THE NIH RECORD

Still The Second Best Thing About Payday

Glutamine Glut and Disease

Zoghbi To Deliver NIH Director's Lecture, Feb. 12 in Masur

By Jennifer Wenger

Spinocerebellar ataxia type 1, a hereditary disorder of the nervous system that makes it increasingly difficult for a person to move and speak, is marked by an errant protein that results when three nucleotides collectively coding for the amino acid glutamine—C, A and G—are repeated many times over. Similar neurological disorders such as Huntington's disease, spinobulbar muscular atrophy and other types of spinocerebellar ataxia are caused

Dr. Huda Y. Zoghbi

SEE **ZOGHBI**, PAGE 2

Clinical Center's Top-Floor Chapel Serves Many Faiths

Did you know that NIH has a chapel on campus? Located on the 14th floor of the Clinical Center, the spiritual ministry department (SMD) has provided spiritual support to thousands of patients, staff and visitors.

The SMD was established in 1953, when the Clinical Center opened, to provide spiritual support for patients participating in clinical trials and their families. It is led by chaplains from the Catholic, Protestant, Jewish and Muslim faiths. The department provides 17 religious services weekly and 24-hour coverage for persons of all faiths. Chaplains are available for personal appointments with anyone at NIH, and they conduct or participate in memorial services

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HIGHLIGHTS

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'Persist Until Success'

Former Virginia Governor Wilder Keynotes King Celebration

By Carla Garnett

Given the theme of this year's Martin Luther King, Jr., birthday celebration, "A Lesson in Peace that Cannot Be Erased," it seemed only fitting that the keynote address be delivered by Douglas Wilder, who is both a distinguished professor at Virginia Commonwealth University and a virtual history lesson as the first African American ever elected as a U.S. governor.

Keynoter Douglas Wilder

"This holiday is a quilt piece, a patchwork of all of the people who have been involved through the years—nameless, faceless, unidentifiable—who...came together to lift the veil of oppression," Wilder said, recalling words he used when first announcing that Virginia had adopted King's birthday as a state holiday. "This is the

SEE **KING CELEBRATION**, PAGE 6

'Welcome to CSI–Bethesda'

Science Plays Widening Role in Forensic Analysis

By Rich McManus

It's getting so that the world's bad guys had better earn their Ph.D.s before they commit their crimes; a STEP Science for All session on "Forensic Science: Unraveling the Riddles" showed not only that it's harder to get away with bad deeds than ever before (the leadoff speaker showed you can glean information simply from patterns of spattered blood), but also that damning evidence persists long after the misdeed, from minutes (Virginia's chief medical examiner offered graphic evidence of postmortem rigor and livor) to months (a scientist whose company specializes in DNA identification reported on post-9/11 recovery efforts) to decades (an Army scientist is teasing out the mysteries of why the 1918 influenza pandemic was so

Lead-off speaker Ross Gardner at STEP event

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Dr. Sally M. Anderson has been appointed deputy director of NIAAA's Division of Basic Research. Her duties include the supervision and management of staff overseeing portfolios in support of behavioral and biomedical research, neuroscience, genomics, proteomics and multidisciplinary research focusing on aspects of alcohol abuse, alcoholism or other alcohol-related problems. A long-time member of the NIAAA neuroscience and behavior integrated review group, Anderson has also served on review committees for NIDA, NIMH and the VA. She began her association with NIH as an intramural investigator for NIMH and went on to work for NINCDS (now NINDS). Most recently, she served at the Walter Reed Army Institute of Research.

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by repetition of the same three nucleotides in different genes.

In the upcoming NIH Director's Lecture, "Pathogenesis Studies of Polyglutamine-induced Neurodegenerative Diseases," Dr. Huda Y. Zoghbi, professor of neuroscience and genetics at Baylor College of Medicine, Houston, and investigator for the Howard Hughes Medical Institute, will discuss her recent research findings on spinocerebellar ataxia and similar neurological disorders caused by the recurring amino acid. The lecture will take place on Wednesday, Feb. 12, at 3 p.m. in Masur Auditorium, Bldg. 10.

A co-discoverer of the gene that causes spinocerebellar ataxia type 1, SCA1, Zoghbi has studied the effects of the mutant form of the ataxin-1 protein—what SCA1 encodes—in both mice and fruit flies. For example, she and collaborators have found that the expanded ataxin-1 is resistant to the normal cellular process by which healthy proteins are broken down and recycled, thus making the disease more likely to occur. How different types of cells in the brain cope with the mutant protein is another subject of interest. Cells that are able to capture the misshapen proteins early on and stash them away in the nucleus are likely to suffer less damage than those in which the protein roams free, she and her colleagues have demonstrated.

In a June 2002 article in the journal *Neuron*, Zoghbi and colleagues describe how, by inserting 154 repeats of the CAG trinucleotide into the mouse's *Sca1* gene locus, researchers can produce a mouse that exhibits characteristics strikingly similar to the human form of the disease. Previously, the mouse's comparatively short lifespan, and hence, its inability to exhibit some of the symptoms that occur in humans in the later stages of the disease, limited researchers' ability to use the mouse as a model for understanding how the disease affects people.

What makes the repeating amino acid so toxic to a neuron, and why some regions of the brain are affected more drastically than others are two topics that Zoghbi will be addressing. She will also discuss how the study of mouse and fruit fly models will help shine new light on the cause—and possible treatment—of spinocerebellar ataxia and related neurodegenerative disorders.

Born in Beirut, Lebanon, Zoghbi earned a B.S. degree in biology from the American University of Beirut in 1975, where she also began medical school. When civil war broke out in Lebanon, she transferred to Meharry Medical College, Nashville, earning her M.D. degree in 1979. She has been a member of the Baylor faculty since 1988, and is also a pediatrician at Houston's Texas Children's Hospital and Ben Taub General Hospital. She was named investigator for the Howard Hughes Medical Institute in 1996.

Zoghbi's honors include the Sidney Carter Award from the American Academy of Neurology, the Javits Neuroscience Investigator Award from NINDS and the E. Mead Johnson Award for Research in Pediatrics from the Society for Pediatric Research. She was elected to the National Academies' Institute of Medicine in 2000 and the American Association for the Advancement of Science in 2002.

In addition to locating the gene for spinocerebellar ataxia type 1, Zoghbi discovered the gene that causes Rett syndrome and identified Math1, a gene that governs the development of hair cells in the inner ear.

The talk is part of the NIH Director's Wednesday Afternoon Lecture series. For more information or for reasonable accommodation, call Hilda Madine, 594-5595. ■

Golf Association Seeks Members

The NIH Golf Association (18-hole coed league) is looking for new members for the 2003 season. The association currently has six teams of up to 25 players each and schedules eight spring/summer stroke-play outings and up to five match-play end-of-summer outings each year at local courses (all mid-week and play is optional). The group caps the year off in the fall with an outing including golf/cart/food for all members and their guests. Prizes and trophies are awarded and handicaps are maintained from 0-40 so all are welcome. For more information contact Howard Somers, 496-8477 or visit http://www.recgov.org/nihga/ for more information. ■

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NIH Record Office
Bldg. 31, Rm. 5B41

Phone 496-2125
Fax 402-1485

Web address
http://www.nih.gov/news/NIH-Record/archives.htm

Editor
Richard McManus
rm26q@nih.gov

Assistant Editor
Carla Garnett
cg9s@nih.gov

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The Record is recyclable as office white paper.

NIEHS director Dr. Kenneth Olden goes for a spin in the institute's new Global Electric MotorCar, or GEM. The car is street legal but has a top speed of 25 miles per hour. It will only be used on the institute's main campus. Facilities Engineering Branch staff use the car instead of a fleet vehicle to run errands between buildings. With a GSA cost of $10,500, the car will pay for itself in about 3 years, officials estimate. NIEHS, located in Research Triangle Park, N.C., recently won the first-ever Environmental Leadership Award from the Environment@RTP, a committee of the Research Triangle Owners and Tenants Association. The award cited use of the electric vehicle as well as overall environmental management, sustainable environmental results, leadership and innovation, employee education, community outreach and voluntary initiatives. The car is produced by DaimlerChrysler. It uses six 12-volt batteries, and has a built-in recharger. Using AC house current, the car recharges in 8 to 10 hours, with a range of 30 to 35 miles per charge. The car looks a bit like a fancy golf cart with hard doors, but it also features slide-down windows, a cargo box and—thank goodness—a heater.

NIH Pollution Prevention Efforts Recognized

NIH recently received the "Businesses for the Bay 2002 Significant Achievement Award for a Government Facility." Businesses for the Bay (B4B) is the Chesapeake Bay Program's voluntary pollution prevention program; it includes more than 500 businesses, industries, government facilities and other organizations in the bay watershed. The award was presented at the organization's annual conference, "Towards Zero Regulation – Business Strategies for a Healthier Chesapeake Bay," held in Linthicum Heights, Md.

On hand for NIH's award from Businesses for the Bay are (from l) Richard Pecora, secretary of Maryland's department of the environment; Steve Ficca, NIH associate director for research services; and Ed Rau of the Environmental Protection Branch, ORS.

Institutional pollution prevention programs competing for B4B awards were judged by several award criteria. The major NIH accomplishments cited were: 99+% reductions in generation of mixed waste (radioactive/chemical waste); exceeding goals for total reductions of chemicals reported under EPA's Toxic Chemical Inventory reporting system; the "Mad as a Hatter? Campaign for a Mercury-Free NIH" and its extensive outreach efforts to schools and communities; power plant improvements including construction of a new cogeneration facility that will minimize use of the more polluting conventional methods of power generation—when this facility comes online later this year it is expected to produce a regional savings of 815.5 tons of air emissions per year; installation of a state-of-the-art water reclamation system at NIH's Poolesville facility preventing discharges of 100,000 gallons per day of waste water from the facility's treatment plant to surface waters.

Steve Ficca, director of the Office of Research Services, and Ed Rau of the Environmental Protection Branch, Division of Safety, ORS accepted the award. They emphasized that contributions to the award-winning effort were made by diverse disciplines—from the many individual investigators who have worked to improve laboratory waste minimization at the bench top, to the engineers and developers of major facility infrastructure improvement projects such as the new power generation and wastewater reclamation facilities. ■

Healthy College Grads Sought

The Clinical Brain Disorders Branch, NIMH, is looking for normal volunteer college-educated men and women between the ages of 30 and 50 for a 2-day outpatient study of variables that might be related to the cause of schizophrenia. The study includes MRI, neurocognitive testing and a neurological exam, among other things. A stipend is available. Call 1-888-674-6464 for additional information. ■

CHAPEL, CONTINUED FROM PAGE 1

for patients and staff.

The 14th floor chapel also provides a quiet place for prayer or meditation. A unique feature of the room is its rotating stage, which may be curtained as a plain backdrop or rotated to present altars for worshipers of Protestant, Catholic and Jewish faiths.

Muslim worshipers are provided prayer rugs, and those of other faiths also have appropriate worship aids made available.

Rotating altar at the chapel serves multiple faiths. This view is from the congregation, looking toward the altar; marble pulpits are at left and right.

The SMD provides an opportunity for chaplains to gain experience in dealing with the sick. Established during the 1960s, the Clinical Pastoral Education program is staffed by chaplains who are interns in a 400-hour program accredited by the Association of Clinical Pastoral Education.

As a part of its documentation of the history of the Clinical Center, the Office of NIH History will collect documents, oral histories and artifacts related to the chapel and SMD. If you have any information about the spiritual ministry department, contact Brooke Fox at the Office of NIH History, 496-6610.

Muslim prayer rugs are available for services at the chapel.

Mathematical-Biological Linkages Meeting

NIH and the National Science Foundation are co-sponsoring a symposium on "Accelerating Mathematical-Biological Linkages" on Wednesday, Feb. 12. The symposium will highlight opportunities at the interface of mathematics and biology and encourage collaboration across that interface. To illustrate the breadth of the interface, symposium sessions will cover the topics of cell structure and function, multispecies systems, and bioinformatics and computational problems. The keynote address, "Mathematics Is Biology's Next Microscope...Only Better; Biology Is Mathematics' Next Physics...Only Better," will be given by Dr. Joel E. Cohen, head of the Laboratory of Populations at Rockefeller University and Columbia University and a MacArthur Foundation fellow.

The meeting runs from 9 a.m. to 5 p.m. in Rms. E1/E2 of the Natcher Conference Center. The meeting is free, but attendance is limited to the first 150 registrants. Register at http://www.bisti.nih.gov/mathregistration. For more information, contact Dr. John Whitmarsh at whitmarj@nigms.nih.gov or 594-0828. ■

NIH Sailing Association Open House

The NIH Sailing Association invites everyone to its open house on Thursday, Feb. 27 from 5 to 8 p.m. at the FAES House on the corner of Old Georgetown Road and Cedar Lane. Would you like to learn to sail? Does the idea of racing sailboats appeal to you? Can you imagine being part of a group filled with skilled sailing instructors, enthusiasts and boat owners? Membership includes instruction, sailboats for charter, racing, cruises, parties and fun. Admission is $5 at the door and includes pizza and sodas; $2 for beer or wine. For more information, visit www.recgov.org/sail. ■

Employee Needs Organ Donation

An employee with type A blood is in need of a kidney transplant. If there is anyone interested in being tested as a possible donor match that has either type A or O blood, call Wanda at (301) 524-7432. Federal government donors can use up to 30 days of donor leave, which is not associated with your sick or vacation leave. ■

Have Uterine Fibroids?

Call NIH at 1-800-411-1222 for information on a study using a new medication for 3 months before hysterectomy. Study-related treatment provided at no cost. Compensation is provided. TTY: 1-866-411-1010, or email prpl@cc.nih.gov. ■

NIDDK Bestows EEO Awards

NIDDK initiated Equal Employment Opportunity Special Achievement Awards in 2002. Institute director Dr. Allen Spiegel presented plaques and award certificates to two individuals and a committee of eight at a recent gathering of senior staff. A reception celebrating their achievements followed. The awards recognize staff who have demonstrated a commitment to furthering equal employment opportunity at NIH and in nonpartisan community activities.

Individual honorees were Susan Harrelson, administrative officer in NIDDK's intramural division and Dr. Anne Sumner, an intramural researcher. Harrelson was recognized for her "exceptional leadership and commitment to fostering teamwork," for mentoring others and for creating "an outstanding environment in the Administrative Management Branch." Sumner was cited for her "dedication to equal opportunity for all," and for providing an example to others who want to pursue a biomedical research career.

The NIH-National Medical Association partnership committee was honored for "five years of outstanding commitment to improve the training of under-represented physicians in biomedical research," and for establishing a partnership between NIH and the professional association of African-American physicians. Members of the committee are Dr. Lawrence Agodoa, Jackie Dobson, Dr. Frank A. Hamilton, Karen Howard and Rose Pruitt of NIDDK, and Walter Jones, Clinical Center; Ludlow McKay, Health Resources and Services Administration; and Dr. Charles A. Wells, NIEHS.

"Those who actively promote equal opportunity within NIDDK and in the larger community deserve recognition. Their contributions strengthen our workforce, enrich our work environment and enhance our effectiveness," said Rebecca Tudisco, NIDDK EEO manager. NIDDK's Syd Carter, Jackie Dobson, Robert Hammond and Renetta Turner developed the awards. NIDDK awardees are eligible for the NIH EEO Award of the Year, presented annually by the NIH director. ■

Dr. Allen Spiegel (l), NIDDK director, congratulates NIDDK staff and others for their contributions to equal employment opportunity in 2002. They are (from l) Ludlow McKay (HRSA), Dr. Frank A. Hamilton, Jackie Dobson, Walter Jones (Clinical Center) and Dr. Anne Sumner.

Also recognized for their EEO efforts were (from l) Dr. Charles A. Wells (NIEHS), Karen Howard, Susan Harrelson and Rose Pruitt.

PTSD Study Recruits Subjects

NIMH is seeking volunteers over 18 years old who suffer from post traumatic stress disorder (PTSD) to participate in research studies that include mental health assessment, brain imaging (compensation provided) and/or a medication trial. Call 1-866-627-6464 (TTY 1-866-411-1010). ■

NIGMS Revamps Web Site

The National Institute of General Medical Sciences began the new year with the launch of its revamped web site, which now offers easier access to funding opportunities, free publications and the latest news from the institute. The site is available at www.nigms.nih.gov.

Visitors to the site will find information about NIGMS programs in genetics and developmental biology; cell biology and biophysics; pharmacology, physiology and biological chemistry; bioinformatics and computational biology; and minority biomedical research and training.

In addition, visitors can view online versions of the institute's award-winning publications. Free printed copies can also be ordered online.

"The new NIGMS web site is designed to be easier to use and more visually appealing while continuing to offer a wealth of content," said Dr. Judith Greenberg, acting director of NIGMS. "Researchers can access valuable and timely information about relevant grants and opportunities for collaboration. Teachers and students can learn about the principles and promise of contemporary biology from our publications. And journalists and other members of the public can find out about important new discoveries in biomedical science that our institute has helped make possible," she said.

The new site is divided into five sections: research funding; training & careers; minority programs; news & events; and "About NIGMS."

The site also features improved navigation and search tools. In addition, it is fully accessible by users with assistive technology devices, such as screen readers for the visually impaired. ■

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time to commemorate the ideals and the sacrifices of those giants as well as to inspire young people to give purpose to their lives. We're not here to celebrate a speech nor a speaker, but to address the concerns still unaddressed by the nation."

Described by NIH deputy director Dr. Ruth Kirschstein as "a program that has become part of the fabric of NIH," the observance held on Jan. 16 also contained traditional salutes to King's vision of harmonious diversity, with performances by the NIH Preschool Song & Dance Troupe and the

PHOTOS: ERNIE BRANSON

***Recalling the Dream** (from l): NIBIB director Dr. Roderic Pettigrew; NINDS EEO Officer Levon Parker; NIH associate director for research on women's health Dr. Vivian Pinn; and NIH deputy director Dr. Ruth Kirschstein discuss Dr. Martin Luther King Jr.'s legacy.*

reading of the litany in several languages by NIH employees. Pianist Wydell Croom, accompanied by saxophonist Brian Mills, offered additional music for the occasion with renditions of "Someday We'll All Be Free" and "Lift Every Voice and Sing."

It was, however, the children—ever the scene-stealers of the program who sang and pantomimed several tunes, including "You Can Be a Rainbow, Too"—and the promise of the world's next generation of visionaries that continued to be the focus of the celebration.

"I couldn't imagine an artist depicting the dream of Martin Luther King any better," Wilder said, referring to the array of youngsters from different backgrounds and races merrily singing together.

"Dr. Martin Luther King, Jr., revolutionized the basic structure of American society," Kirschstein acknowledged. "Dr. King's birthday is a time for each of us to recommit ourselves to the very ideals for which he lived and for which he died. He was one of the most influential Americans of the 20th century. His impact was felt near and far. Needless to say, many NIH training programs and research initiatives—particularly NIH's role in closing the health disparities gap—were inspired by the work of Dr. King."

Using the program's theme, Wilder reminded attendees that education always has been the cornerstone of the Civil Rights Movement. "How well we educate our children will determine America's responsibility, and its prosperity," he said. "Global competition demands such."

The former governor, who described himself as a reluctant politician who entered the campaign fray only when he found that constructive criticism of public policy alone was not enough, offered NIH'ers a message of hope. He urged individuals to begin to make a difference now.

"We can't measure our agenda by who gets elected to be President, governor, senator or whatever," Wilder said, recalling that when the Civil Rights agenda began, those in the White House or the State House were not directly involved in the movement. "It doesn't matter who is elected, so long as we elect ourselves. There is not a day or a time when the critical issues facing our country can afford not to be addressed. We are a young nation. Sometimes the world forgets that. We're just about two and a quarter centuries old. Our strides, our accomplishments and our leadership among the nations belies the short span of our existence. When one takes into account (that the nation was) almost torn asunder by a great war prior to our emerging maturity, it's quite an amazing event."

History, Wilder noted, ought to be used to help keep a strong nation healthy.

"Is this nation sick?" he asked. "What exactly is the malady? What are the symptoms? Is it infectious or communicable? What therapeutics have been used? What have been the impacts of the

Kemi Adetola of the Clinical Center and Dr. Richard Harrison of NIDA are only two of the several NIH'ers called upon to lead the reading of the King litany; Adetola read in Yoruba, the language of Nigeria, and Harrison read in the Osage language.

various interventions? We can use negotiations and public policies to heal where scalpels have been used in war. What could be more fitting than the message that men fought a great war—the Civil War—and yet it caused a nation to be born. We're at that point in our nation, when we can look to the past and learn from our mistakes. If we don't know the past, we can't learn."

The diversity of the United States is one of the country's treasures, Wilder pointed out. "We are a nation of many races, religions, cultures and heritages and we always have been—from the day it started," he said. "It is this unity of variety and abundance that makes us great. We're not perfect and we will continue to make mistakes, but I'm convinced that Americans are good-willed. We'll prevail against the bigots and the zealots that selfishly promote themselves."

Wilder cautioned against engaging "naysayers, who don't see progress" and "hatemongers, who seek to slow down progress at any price." He encouraged pride in today's generation, warning about the dangers of overglorifying bygone days.

Pianist Wydell Croom and saxophonist Brian Mills perform.

"There never were any 'good ol' days' for all of America's people," he asserted. "The untapped sources of human potential that exist today are sometimes too awesome to contemplate. No, all of the great minds and visionaries have not passed into the abyss. There have been no greater minds than exist today. No greater opportunities have existed anywhere in the world than exist in America today. And yet, no greater challenges have ever existed than exist today. We find on too many occasions that the very taproots of our society are infected with the malignancies of greed, corruption, selfishness, exploitation. We've got to recognize some of the causes of our problems. When there is an increasing loss of respect for the things that we hold venerable, it takes away from the already-too-few stalwarts who would be part of the solution."

Finally, Wilder evoked King's wish that all people be judged solely by their character, instead of by the somewhat capricious labels society often affixes to its citizens.

"This beacon light that our nation holds could still be brighter," he concluded, "but it will not be found by the continued jousting of who's good and who's bad in our society. Only by respecting and protecting the rights of every American can any American be able to guarantee to his posterity the beauty and the bounty of this land. There are far more things that unite us than divide us. We've got to get away from labels and using them to define individuals. We must define ourselves."

Wilder suggested that today's young people learn a litany with words as strong as those Thomas Jefferson wrote in the Declaration of Independence, "We hold these truths to be self evident. That all men are created equal..."

Children, he said, should be taught to say and believe, "I will persist until I succeed, because I was not delivered into this world in defeat, nor does defeatism run through the blood of my ancestors. I'm not some sheep waiting to be prodded by a shepherd. I am a lion. I don't want to associate with the sheep. I don't want to know the sheep, because the slaughterhouse of failure is not my destiny. I will persist until I succeed."

Dr. Roderic Pettigrew, first permanent director of NIH's newest institute, the National Institute of Biomedical Imaging and Bioengineering, ended the observance with a personal perspective on MLK Day, in light of his upbringing in the deep South during the Civil Rights era.

He began with a description of his early life experiences, posing the question: "Dream or nightmare?" He said he clearly recalls being a frightened 10-year-old in Albany, Ga., where racial intimidation and violence were commonplace. At the time, he said, he often did not think he would live to adulthood. In this regard, he said his experiences were more like a nightmare than a hopeful dream.

Program emcee Parker (l), poster art/cover designer Earle Barnes (c) of NCI and organizing committee member Mike Chew of OEODM/NCCAM show NIH's MLK Day 2003 Poster.

Pettigrew said his outlook changed, however, when King brought his "dream" of hope, his championship of "human worth" to Albany and the region. Pettigrew contrasted the "majesty of King's literary style—characterized by the masterful use of metaphors, similies and analogies—with the simple power of his message. Simple yet strong themes like fair play, dignity of work and a call for mutual respect were at the core of King's writings and oratory." The power of his universal message still resonates, Pettigrew concluded. "Living this dream seems to require only that we respect our fellow man, that we believe in and respect ourselves, that we practice fair play and that we value human worth. Doing this would enable each of us to live the dream and escape the nightmare."

Performances by the NIH Preschool Song & Dance Troupe—particularly their enthusiastic rendition of the tune, "You Can Be a Rainbow, Too"—serve as inspiration for the annual celebration.

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virulent) to centuries (an authority on exhumations detailed how a skeleton may speak).

Small wonder, then, that the Dec. 13 session drew an overflow crowd to Lister Hill Auditorium. "Welcome to CSI—Bethesda," quipped Teresa Nesbitt of the Center for Scientific Review, who chaired the event's organizing committee. "Today we're going to find out that dead men really do tell tales."

Dr. Marcella Fierro

Leadoff speaker Ross Gardner, police chief in Lake City, Ga., a suburb of Atlanta, gave a sort of Crime Scene 101 primer, arguing that such scenes are really laboratories dotted with physical evidence that tells a story. An objective, rational approach to deciphering evidence ideally leads to justice for all parties involved, he said.

"It's like assembling a jigsaw puzzle, with a nasty twist," he explained. "We have the archaeologist's dilemma—how to make sense of artifacts." Despite relying on the tools and spirit of science, Gardner says crime scene investigation remains an art. Much depends on how physical evidence gets interpreted. "Physical evidence will never lie to you," he said, "but we can misinterpret it." Gardner said a major fault of his profession is a tendency to let conclusions determine the facts, rather than vice versa.

Quoting one of the founding fathers of crime scene investigation, Gardner said, "Every contact leaves its trace." Those traces are becoming more susceptible to scientific study, he showed. Police can use a SceneScope employing ultraviolet and other sources of light to make body fluids and fibers more visible; they use "superglue fuming" to stabilize latent fingerprints; SPR, or small particle reagent, allows detectives to raise prints from wet surfaces; and DNA identification is getting more powerful every year—the latest advance is STRs, or short tandem repeats, a technology that combines restriction fragment length polymorphisms with PCR amplification.

Interestingly, Gardner thinks DNA evidence is oversold: "DNA doesn't in and of itself define guilt," he cautioned. And though he said that detectives' ability to recover fingerprints is getting better, analysis of the prints remains a relatively static field.

Concluding his talk, he demonstrated that study of shards of broken glass can reveal which direction the force came from, and that soil science has become so accurate that a talented investigator can tell you exactly where in your backyard a particular specimen originated.

Demonstrating that "the body itself is a crime scene," was Dr. Marcella Fierro of Virginia Commonwealth University, who is the state's chief medical examiner. A forensic pathologist, she explained the many instances of death that call for investigation by a medical examiner. As firm an adherent of the scientific method as Gardner, she proffered "Tylk's Law: Assumption is the mother of all foul-ups."

Witness to the aftermath of all kinds of grisly crimes, Fierro shared the results of her studies with professorial, sometimes mordantly humorous, detachment. For example, she observed that "only on TV do they determine time of death with such accuracy," pointing out that many variables, including body temperature, livor (the pooling of blood, due to gravity, in certain parts of the body) and rigor (stiffness following death) must be taken into account. "Time of death is always an estimate," she said, "and is based on the window of time within which the victim was last reliably seen alive and when he or she was reliably found."

Dr. Mitchell Holland

Because a decaying body is subject to a predictable pattern of colonization by maggots and carrion beetles, entomology has had more to offer forensic medicine recently, she said. The contents of a victim's stomach can also be valuable, Fierro noted, as is study of other major organs. The heart, for example, always gets a look at autopsy because coronary artery disease is the leading cause of sudden, unexpected, natural death, she said. Other common killers are arrhythmias, fatty livers, asthma and diabetic ketoacidosis. Cocaine abuse is particularly dangerous for the heart, she warned.

Victims of car crashes, she said, suffer a typical constellation of injuries. "There is a classic pattern for the unbelted driver," she explained. Other dead giveaways include "the unmistakable" arborization pattern in the skin of lightning-strike victims and stress ulcers erupting in the stomachs of victims who died physiologically stressed over a number of hours.

Fierro occasionally interrupted her remarks with editorial asides, including a call for more federal money devoted to forensic pathology research, and pleas for mandatory helmet-wearing for motorcyclists and mandatory hard-wired smoke detectors for residences. She also predicted new dilemmas as

Female Volunteers Needed

The Behavioral Endocrinology Branch, NIMH, is seeking female volunteers ages 18-55 to participate in studies of the effects of menstrual cycle hormones on brain and behavior. Volunteers must have regular menstrual cycles with no changes in mood in relationship to menses, be free of medical illnesses and not taking any hormones or medication on a regular basis. They will complete daily rating forms and be offered participation in one or more protocols. Payment will be in accordance with the duration of each visit and the type of protocol. For more information, call Linda Simpson-St. Clair, 496-9576.

terrorism becomes a more prominent form of homicide: sometimes victims' bodies are too toxic to return to the family following autopsy. "This culture doesn't ascribe to mass graves," she observed. "Families want the remains of their loved ones back."

Sorting through evidence recovered from a mass gravesite was the dire task of responders to the World Trade Center on 9/11, including scientists from the Bode Technology Group, Inc., whose vice president and laboratory director Dr. Mitch Holland offered examples of DNA's power as a "unique biometric tool." He suggested that all Americans might one day submit to DNA profiling, much as they now register for Social Security numbers and obtain driver's licenses. Such profiling would not only help catch more criminals, he argued, but would also offer a means of identification in the event of tragedy, establish paternity in disputed cases and help the nation keep track of immigrants.

He applauded the establishment of convicted offender databanks—DNA repositories (the largest of which is called CODIS, now holding more than 1.25 million samples)—that could help solve cases that lack suspects. He said the profiling is limited to "nonsense" DNA stretches that don't code for genes or traits. He assured "a profile is useless unless there's something to compare it to," or an "exemplar" sample.

The typical profile he proposes would consist of 26 or more numbers, corresponding with 13 or more regions of DNA called STR alleles. "It would be very much like an extended Social Security number," he said.

The state of Virginia is "one of the most progressive users of DNA profiling in the U.S.," Holland reported, maintaining samples from more than 200,000 convicted offenders. He said the databank has resulted in more than 1,000 "cold hits" (solved cases) in Virginia so far; nationally, databanks have solved more than 6,000 cases.

"It's an extremely effective technology," Holland said, "but we're in our infancy in terms of our ability to use it." To enhance the field, he proposed two steps: build up DNA databases and establish labs willing to test cases that lack suspects.

"There are thousands of crime scene profiles without suspects in Virginia," he said, "and more than 45,000 in the U.S."

In Baltimore, there are more than 2,600 unanalyzed—for want of funds—rape kits, he reported, "and that's just the tip of the iceberg; there are probably 500,000 unprocessed rape kits nationwide." More and more perpetrators will be caught, and there will be far less crime" if his proposals come to fruition, he said. "The hits are starting to come more rapidly."

Holland, who said his company wants to hire 20 new scientists, said that 9/11 and various airliner crashes have made DNA identification a burgeoning field. Bode Technology received 2,000 partial remains, some only an inch long, within a month of 9/11, and in total analyzed some 13,000 WTC bone fragments, 5,500 soft tissue samples, as well as 3,200 reference samples from victims' families. "Our biggest challenge was a lack of references," he said, calling for voluntary nationwide sampling.

Damage from fire and water at Ground Zero reduced Bode's success rate in recovering useable DNA samples from a normal post-tragedy rate of 90-95 percent, to about 70 percent, Holland said. "Even fragments that came to us as literal charcoal got sampled," he said. "Everything that was recovered got tested."

He said methods of extracting and amplifying stretches of DNA are improving constantly, almost to the level of single-cell analysis (although he noted that there are anomalies at that level). At the very least, he recommended that those who pursue at-risk activities such as fire fighting, law enforcement, military service and work conducted in dangerous places (embassies, countries abroad) have their DNA profiled prior to deployment.

Dr. James Edward Starrs of George Washington University has led several exhumations of high-profile historical figures, including Jesse James and John Wilkes Booth.

PHOTOS: ERNIE BRANSON

The seminar shifted backward in time for the last two speakers. Law professor James Edward Starrs of George Washington University—who has gained notoriety for his exhumations of Jesse James, Uncle Sam (George Washington's brother—buried for more than 200 years near Charles Town, W.Va., he was more excavation than exhumation, Starrs asserted) and John Wilkes Booth, among others—explained the rationale for his work (there must always be scientific value) and his methods (including ground-penetrating radar, and, for his current study of the Civil War battlefield at Gettysburg, bone-sniffing dogs). Starrs has exhumed more than 20 corpses for a variety of reasons (relocation and/or identification of remains, determination of cause and/or manner of death, recovery of pathogens) and has, in some cases, rewritten history based on his findings.

"Exhumation should be the exception, not the rule," he assured the audience. But curiosity is nonetheless a strong goad; Starrs says his motto is, "You never know what's there until you're there."

Exhumation also factored in the studies of final speaker Dr. Jeffery Taubenberger, chief of the division of molecular pathology at the Armed Forces Institute of Pathology (AFIP). Keen to understand, for purposes of future public health, why the 1918 influenza pandemic was so lethal (more than 50 million people died worldwide, most from untreated pneumonia secondary to flu infection), he recovered evidence for his theories from such unlikely places as

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flu victims unearthed in 1997 from Alaskan permafrost, from AFIP slides made at autopsy of soldiers killed by flu in 1918, and most spectacularly, from RNA specimens taken from the hindquarters of birds of the 1918-1919 era that had been collected by the Smithsonian Institution (flu is originally an animal pathogen, primarily of the gastrointestinal tracts of waterfowl, that has made its way, via pigs, to man).

Playing multi-decade connect-the-dots with RNA fragments, Taubenberger and colleagues are trying to imagine scenarios wherein influenza A, a relatively fragile single-stranded RNA virus, can go from being fairly benign (the vast majority of flu patients recover, he said, though flu kills some 20,000 people in the U.S. annually, mostly neonates and the elderly) to being a widespread killer, even of young, healthy people in their prime. Eight AFIP specimens recovered from more than 100 autopsies conducted on soldiers killed by the 1918 pandemic yielded RNA viral fragments, Taubenberger said. "But they're in terrible shape and in tiny amounts." His team is trying to reconstruct the virus's entire genome from these tissues.

Dr. Jeffery Taubenberger

One of the bodies exhumed in Alaska had enough viral RNA to allow reconstruction of the entire genome. Taubenberger's team is also searching for influenza RNA in waterfowl, who along with pigs and people, were stricken by the 1918 flu. Six of 25 birds preserved from the era yielded flu virus RNA; AFIP scientists are sequencing chunks of the virus and have so far completed five of eight gene segments. But the question of the deadly strain's origins, and the key to its lethality, remains unanswered.

The AFIP team's studies are not merely academic. History shows that major flu epidemics occur every 30 years or so. The last one was in 1968, "so statistically speaking, we may be due for another pandemic. But we don't know when, how or by what strain," Taubenberger cautioned. "The outbreak of flu in chickens in Hong Kong in 1997 might be a warning sign," he said. "And flu spreads by jumbo jet now, not by steamship (as in 1918, when U.S. troops carried the virus to Europe)...I think it's clear that influenza epidemics are nothing to sneeze at."

To view the STEP session on forensic science in its entirety, visit videocast.nih.gov.

Female Volunteers Needed

The Behavioral Endocrinology Branch, NIMH, seeks healthy female volunteers ages 40-50 to participate in longitudinal studies of the perimenopause. Volunteers must have regular menstrual cycles and be medication-free. Periodic hormonal evaluations, symptom rating completion and occasional interviews will be performed. Subjects will be paid. Call Linda Simpson-St. Clair, 496-9576.

NINDS Mourns Research Scientist Stoner

By Shannon E. Garnett

Dr. Gerald L. Stoner, 59, chief of the NINDS neurotoxicology section, died on Thanksgiving Day, Nov. 28, 2002, from complications following a fall at his family farm.

A native of West Donegal Township in Lancaster County, Pa., Stoner was born in 1943. He earned his bachelor's degree in natural science from Eastern Mennonite College in Harrisonburg, Va., in 1965, and his Ph.D. in biochemistry from the Columbia University College of Physicians and Surgeons in New York in 1974.

Dr. Gerald L. Stoner

Stoner's career spanned more than 20 years at NIH. His research on JC virus—a common human polyomavirus that causes a fatal demyelinating disease of the nervous system called progressive multifocal leukoencephalopathy—and its different isotypes has been important in understanding the disease.

"Gerald was a quiet, kind and dedicated scientist, who will be greatly missed by his friends, fellow coworkers, and scientists within the JC virus community and NIH," said Caroline Ryschkewitsch, a medical technologist who worked with Stoner in the neurotoxicology section.

Before coming to NIH, Stoner served as a research associate in the department of microbiology and immunology at Albert Einstein College of Medicine of Yeshiva University in New York. He left that position to become a senior research scientist, studying the immunology of leprosy, at the Armauer Hansen Research Institute in Addis Ababa, Ethiopia.

Stoner joined NIH in 1981 as a senior staff fellow in the Laboratory of Experimental Neuropathology, NINDS. In 1988, he became chief of the neurotoxicology section, the position he held at the time of his death.

Throughout his career, Stoner published more than 100 articles, chapters and reviews, and provided editorial services to many journals, including serving on the editorial board of the *Journal of Neurovirology* since 1994. He was coeditor of the book *The Human Polyomaviruses: Molecular and Clinical Perspectives*, published in 2001.

Stoner held memberships in several professional societies including the American Association for the Advancement of Science, the American Society for Microbiology, the American Society for Virology and the Society for Neurovirology.

He is survived by his mother, two daughters, two sisters, two brothers and a grandson.

New Computer Classes Available from CIT

The Center for Information Technology is beginning its Spring 2003 term of classes. Joining returning favorites are many new seminars scheduled for scientists, computer support staff and end users. Classes are offered without charge and sign-up is available at http://training.cit.nih.gov.

Web developers and programmers can attend four new courses. "Introduction to Dreamweaver MX" will be a hands-on approach to learning about this leading tool in web development. Microsoft is also bringing advanced classes to supplement their .NET curriculum with "Enterprise Web Solutions" and "Secure .NET Development." For current Java programmers who want to improve the quality of their software, "Java Power Tools" is a 6-session course that will look at a variety of programming techniques.

End users will find three new classes on new or updated software. "Apple Keynote" and "What's New in PowerPoint 2002" will look at two different options in presentation software. "What's New in Outlook 2002" will examine the improvements available with this newest version of the Outlook email client.

For scientists, there are many new titles. CIT's Center for Molecular Modeling is sponsoring "Docking Flexible Ligands with FlexX" and "RACHEL: A New Tool for Lead Optimization." AFNI (Analysis of Functional NeuroImages) is adding to the five returning classes with "SUMA (SUrface MApper)." This class will go through the various steps required to display functional activation maps on cortical surface models. Partek will also be adding some titles to its existing offerings: "Cluster Analysis & Advanced Visualization of Gene Expression Data" and "Advanced Statistical Analysis of Microarray Data Using ANOVA Techniques." Finally, for scientists and scientific support staff, "Web Writing for NIH Science" will provide a model for conveying scientific information to a variety of audiences via the web.

In statistics, "Bringing Data Files into SAS" will help new users to bring in and work with existing data from other sources. The SAS Institute will also be bringing back two other classes.

IT project managers will also have two new options. "Security in the Application Development Lifecycle" will discuss security concerns that arise in application development and how to deal with them throughout a project. "Introduction to Requirement Lifecycle Management" will examine how to determine solid requirements at the start of a project.

Finally, the new nVision reporting system for travel will be debuting during the Spring term. Training will occur for all who wish to learn about accessing the travel data coming out of the NBS Travel system.

For details, visit the web site above or call 594-6248 (GOCIT) if you wish to discuss course registration, teaching a class or other training issues. ■

FEW Meeting Set, Feb. 11

Federally Employed Women, Bethesda chapter, will have a business meeting on Tuesday, Feb. 11 from noon to 1 p.m. in Bldg. 40, Rm. 1201-1203. The chapter will discuss its vision, mission and focus, and address new issues and concerns. All are invited to attend. Sign language interpretation will be provided. For other reasonable accommodation, contact Allyson Browne, abrowne@mail.nih.gov or 451-0002.

OD Office Salutes Plain Language with Awards Ceremony

The NIH Office of Equal Opportunity and Diversity Management recently held a recognition ceremony to encourage and recognize its staff for efforts in practicing plain language skills. Staff whose plain language products had been submitted to the NIH Plain Language Awards committee for review received a thank you and a certificate from Lawrence Self, OEODM director, who urged them to continue producing documents in plain language.

Lawrence Self, OEODM director, presents a certificate to Glenda Keen, OEODM plain language project officer.

At the NIH ceremony, OEODM staff submitted 13 products for review and earned three awards. OEODM recognized these staffers for their partipation: Linda Morris, Michael Chew, Charly Wells, Milton Belardo, Carolyn Bellamy, Gary Morin, Joan Brogan, Carolyn Hunter, Molly Gleeson, Carlton Coleman, Victor Canino, Melvena Bean, Jayne Callahanhenson and John Gimperling. Glenda Keen, OEODM plain language project officer, received a certificate for outstanding coordination and promotion of the initiative in OEODM.

In addition, all OEODM employees have included a plain language requirement in their performance plan under the communication element. The office also successfully conducted two in-house plain-language training classes. ■

Chamber Music Concert Scheduled

The Rock Creek Chamber Players will perform on Sunday, Feb. 16 at 3 p.m. in the 14th floor assembly hall, Bldg. 10. The program will include Mozart's G minor string quintet; Nielsen's "Serenade in Vain" for clarinet, horn, bassoon, viola and cello; and other works to be announced. For more information about this free public concert, sponsored by the Clinical Center's recreation therapy section, call (202) 337-8710. ■

NIGMS' Mitchell Competes for Pageant Crown

She might not have won the crown, but in the hearts of her NIGMS colleagues, Jilliene Mitchell is this year's Miss Maryland USA.

Mitchell, an editorial assistant in the Office of Communications and Public Liaison, recently competed in a statewide pageant to win the coveted crown and the title of Miss Maryland USA 2003.

The pageant, held recently in Cambridge, Md., was a weekend-long event that capped 6 months of preparation for Mitchell. In addition to working full-time at NIGMS during the period, she met with a personal trainer three times a week, did volunteer work for the American Diabetes Association, and participated in coaching sessions with Wendy Davis, the first African American to win the Miss Maryland USA title back in 1994.

Jilliene Mitchell, an editorial assistant at NIGMS, competed for the crown of Miss Maryland USA.

A novice to pageant life, Mitchell found herself up against some 60 other contestants, many of whom were seasoned pageant regulars (this year's winner was second runner-up in last year's Maryland Teen USA pageant).

"I never imagined myself a contestant in a pageant," Mitchell admitted. She said it was a friend who convinced her to enter.

"I looked at winning the pageant as the chance to become a positive role model for young girls, particularly young African American girls who don't often have positive role models," Mitchell said. Part of the responsibilities of the reigning Miss Maryland USA include promoting community service programs, charities and literacy throughout the state. In addition, the title holder serves as an ambassador for Maryland both nationally and internationally.

Overall, Mitchell said the competition was a great experience.

"I had the opportunity to meet many new and interesting people, including one who was a fellow Hampton University alumna—we ended up being roommates during the competition," she said.

"It was also interesting to learn that the pageant was about much more than physical appearance," she said, adding that it was about "intelligence, confidence, poise and giving back to the community through various activities."

As to next year's competition and her likelihood of a return to pageant life, Mitchell gives a firm "no," but quickly adds, "Well...we'll see."—**Susan Athey**

Mitchell is surrounded here by parents Anthony and Dorothy Mitchell.

NIH Wins Energy Management Honor

NIH and HHS recently received their first Presidential Award for Leadership in Federal Energy Management. The award was accomplished through the Partnership for Energy Performance (PEP) that included the U.S. Army garrison at Ft. Detrick, NCI, Frederick Cancer Research and Development Center and private-sector partners.

The uniqueness of the public-private joint venture and the outcome anticipated were the grounds for the team receiving the 2002 Presidential Award. The effort put the garrison and the NCI-FCRDC campuses in an outstanding position to meet and/or exceed the energy reduction goals established by Executive Order 13123, which mandates federal agencies to conserve energy and meet specific energy-reduction goals by FY 2005.

Under a utility area-wide agreement established in 1994, PEP developed a utility services contract to acquire energy conservation services and more than $25 million in facility improvements. The private-sector partners include Potomac Edison Co. (Allegheny Power) and the Science Applications International Corp. (SAIC is the contractor that handles design, construction and maintenance requirements for the NCI-FCRDC government owned-contractor operated site).

Wednesday Afternoon Lectures

The Wednesday Afternoon Lecture series—held on its namesake day at 3 p.m. in Masur Auditorium, Bldg. 10—features Dr. Huda Y. Zoghbi on Feb. 12, giving an NIH Director's Lecture on "Pathogenesis Studies of Polyglutamine-Induced Neurodegenerative Disease" (see story on p. 1).

On Feb. 19, Dr. William T. Newsome, professor, department of neurobiology and HHMI investigator, Stanford University School of Medicine, will discuss, "Neural Correlates of 'Experienced Value' in the Parietal Cortex."

For more information or for reasonable accommodation, call Hilda Madine, 594-5595.