

# THE N I H R E C O R D

Still The Second Best Thing About Payday

## Historic Grand Rounds

### To Diagnose His Disease, 'Poe' Visits NIH

By Melanie Modlin

NIH gets its share of famous guests—Presidents, astronauts, TV personalities. But a visit from the late writer Edgar Allan Poe? Quoth the Raven, "Never before."

On Dec. 3, the father of the mystery story (played by actor David Keltz) sought help in solving the mystery of his own morbidity and death. The riveting session—the first in NLM's "Historic Grand Rounds" series—took place in a packed Lister Hill Auditorium.

"How and why, you may well ask, have I now made this heroic leap from the grave—out of space, out of time—to be with you today at the National Library of Medicine?" Poe asked, pacing about in a black frock coat and cravat. "Let it suffice that I am

SEE POE'S VISIT, PAGE 4

### Internship Program Opens Doors For Hispanics

By Matt Holder

There is a folktale, applied to many cultures, wherein a little boy asks a fisherman why one basket of crabs requires a lid, while another basket does not; the answer is that crabs will help one another get out of the basket if they belong to one class, but will pull each other down if they belong to the other. The social criticism is unmistakable.

Daniel Macias, a Mexican-American, recently told the story of the "Mexican crabs" as a speaker at a Freddie Mac forum on diversity. Macias, 24, is a financial analyst intern in the Office of Loan Repayment and Scholarship in the Office of the Director.

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Growing Older Successfully

## Seminar Finds Aging 'Not Just About Old People Anymore'

By Carla Garnett

While it may be true that "the old gray mare ain't what she used to be," it is becoming increasingly clear to researchers that she needn't be put out to pasture because of it. According to panelists at a recent seminar on Successful Aging, staying healthy, fit and active are the keys not only to living well into one's old age, but also living into one's old age well.

"Recent evidence in aging is beginning to generate a lot of exciting suggestions that we may be able to change the nature of old age in fundamental ways," began Dr. Laura Carstensen of Stanford University, whose topic was "New Thoughts on Old Minds." "We are clearly seeing evidence that behavioral, medical and social practices influence aging outcomes, so the cumulative



Seminar panelist Dr. Laura Carstensen discusses aging.

SEE AGING WELL, PAGE 6

Former Director's Memoir

## Fredrickson Reflects on Politics of Recombinant DNA Research

By Rich McManus

Among the privileges of being an esteemed ex-director of NIH are that you can deliver a lecture in Lipsett Amphitheater wearing a comfortable pair of sneakers, and that, a quarter century after the fact, you can let the world in on your savvy political machinations—including hard-sell tactics that verged on the questionable—that enabled science to tread in new directions despite Frankensteinian fears in the public imagination at the time.



Former NIH director Dr. Donald S. Fredrickson

No, we're not talking about human embryonic stem cell research here, though Dr. Donald S. Fredrickson's talk on Dec. 11 was quite consciously a lesson in introducing to the public scientific

SEE FREDRICKSON, PAGE 10



*"The AIDS Crisis," discussed by NIAID director Dr. Anthony S. Fauci, on a radio show called "Dialogue," recently tied for best long-form news interview in the 15th annual March of Dimes Achievement in Radio (AIR) Award from the Washington national chapter. The show, with host George Liston Seay, is produced by the Woodrow Wilson International Center for Scholars in Washington, D.C., and features interviews with public figures, scholars, journalists and authors. The weekly program is carried by 165 cable and radio stations across the U.S., the Armed Forces Network and National Public Radio Worldwide. During the month of January, Fauci's interview can be heard at <http://www.wilsoncenter.org/dialogue>. The program tied with WAMU's "The Man Who Keeps Watch Over the [Vietnam] Wall."*

## Safe in the Palm (Pilot) of Your Hand?

By Cheryl Seaman and Kevin Haney

If you're one of the many people who use a portable communication system—laptop, Palm Pilot, Pocket PC, Blackberry or other PDA (personal digital assistant)—you better be prepared to lose it, and the information in it. For while the new technology is great—the size, convenience, portability and amount of information you can store are phenomenal—so are the inherent security risks. If you use portable communication systems to conduct government business, certain rules apply; you are obliged to protect them, and more importantly, the information they contain.

PDA's have become an invaluable tool for remotely getting email, maintaining a calendar, to-do lists, address books and taking notes; however, they also present several security threats. They've fueled a blurring of the partition between work and personal information because people use them to do their jobs as well as to record a trove of personal information. They often contain identification information, birth dates, personal preferences, Internet addresses, even passwords, and commonly contain confidential/sensitive information.

Applying the same safeguards you use to secure your desktop, be particularly careful when storing sensitive information (patient and/or research data, security information, personnel information or information subject to the Privacy Act) on portable systems. If you are remotely accessing NIH IT resources, all requirements of the NIH remote access policy apply. This guidance is found at <http://irm.cit.nih.gov/security/GuixSecuData.html>.

**Guard Against Theft:** Think of portable devices as cash—and don't tempt people. Easily stolen and concealed, these items are targets. If traveling, consider storing these devices where a thief would not look, for example in a sports bag rather than a computer bag.

**Keep the Data Safe:** Your first defense is a strong password. If the device came with a default password, change it immediately. Never store passwords—especially on a PDA. Sensitive information should be stored encrypted, and if you use a laptop, never save sensitive data on the hard drive. It's a good practice to store data disks separate from the laptop.

Because you can give and receive viruses each time you hook up to the network (or transfer data through an infrared port), make sure you have up-to-date anti-virus software. As with PCs, beware of downloading freeware or shareware software from untrusted sources. They may contain viruses or other malicious code.

Check out the security features on your portable device and enable them (using "private" or "hide"

features). Eventually, vendors will add biometric safeguards, like a fingerprint reader.

Provide some contact information at the login prompt so that an honest person could return the device to you, its rightful owner.

**Be Careful when Synchronizing PDA's with PC's:** It's wise not to leave your PDA in its cradle connected to your PC because someone could enter your office and replace the PDA with their own. They could start sending inappropriate email (with you as the sender), and they could download information from your computer. A screen saver password on your PC is advisable. If you synchronize your PDA with your home computer, you need to be careful that sensitive government information is not being downloaded. Palm Pilot, Version 7, includes a modem and when placed in the cradle to a PC connected to NIHnet, literally establishes an unprotected back door into NIH networks.

**Back up Important Information:** Should you lose your portable device, a recent back-up of the information will help allay that feeling of sickening panic.

**Wireless Communication Isn't Secure:** Despite the advances in available encryption technology, secure wireless transmission of sensitive information cannot be assured.

Check with your local IT staff or information system security officer if you need help securing your portable device. The ISSO roster is found at <http://irm.cit.nih.gov/nihsecurity/scroster.html>. ■

## NIH RECORD

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## NIA Searches for Genes Involved in Age-related Diseases

By Doug Dollemore

A 5-year, \$5 million international research initiative funded by the National Institute on Aging could help scientists unravel the underlying genetic processes involved in certain age-related traits and diseases.

The ProgeNIA project will focus on Sardinia, an isolated Mediterranean island where historically there has been little immigration. As a result, most inhabitants share common ancestors and have inherited many of the same genetic traits. The interrelatedness of this population should simplify the identification of genes involved in age-related conditions such as cardiovascular disease.

"With this project we want to study aging, and in particular to identify genes involved in the development of several pathophysiological conditions typical of old age," said Dr. David Schlessinger, chief of NIA's Laboratory of Genetics. "The Sardinian population, thanks to its genetic patrimony, can make a fundamental contribution to the understanding of human biology."

The project, a collaborative effort of NIA and the Italian National Research Council, officially began last November. It will be directed by Dr. Giuseppe Pilia of L'Instituto sulle Talassemie ed Anemie Mediterranee in Cagliari, Sardinia. The investigators aim to recruit more than 4,000 men and women ages 14 and older to participate in the project. In the first phase, volunteers will undergo a series of tests. During these evaluations, investigators will be looking in detail at two traits: high arterial stiffness and positive emotions. Once volunteers who have extreme values for one or both of these two traits have been identified, investigators will seek out family members to determine if they also have these extremes. After that, investigators plan to conduct genetic analysis on individuals who share those traits to try to identify underlying genes.

The traits were selected for several reasons. Independent data from NIA's Baltimore Longitudinal Study of Aging identifies vascular stiffness as perhaps the most important predictor of mortality

from heart disease. The ability to reduce vascular stiffness could have a major influence on reducing deaths from heart disease. In addition, it has been reported that positive emotions—joy, happiness, love and excitement—can have profound impact on life satisfaction and health as we age. Both the physical and emotional traits are considered to have strong genetic components and have been extensively studied by NIA scientists.

Sardinia, which was first settled around 6,000 B.C., is home to one of the world's few "founder" populations. These populations, including those located in Iceland, Finland and French-speaking Quebec, arose from small numbers of individuals. Over time, these populations grew in size without much immigration from the outside world. Because most of the society is interrelated, individuals share much of their genetic information, which makes it easier to track genetic effects through generations.

The scientists will concentrate their research efforts in Ogliastra, a region on the eastern side of the island surrounded by mountains and the Mediterranean Sea. Because of the terrain, the 300,000 residents of this region have traditionally been isolated from other islanders, making them an ideal founder population. "Sardinians speak of Ogliastra as an island within the island," Schlessinger says.

When a particular genetic trait, such as extreme arterial stiffness, exists in founder populations it is likely that the same one or few genes are responsible for the trait in all affected individuals. Once the genes for a certain complex trait are identified within a founder population, researchers can use this information to isolate interacting genes and assess their importance in more heterogeneous populations, like those of mainland Europe or the United States.

"This study can ultimately help prevent some diseases by letting us know who has the risk factors that indicate they should change diet or exercise or otherwise change their lifestyle in a way that might save lives," Schlessinger said. ■

### Adults Needed for Study

College-educated, middle-aged adults are needed for a 2-day outpatient study at NIMH. Involves blood draw and routine clinical, neurological and cognitive procedures. A stipend is available. Inquire at 435-8970. ■



*Dr. Giuseppe Pilia, director of the ProgeNIA project, in his laboratory. The 5-year study is funded by the National Institute on Aging.*



*A rugged, isolated island, Sardinia is home to one of the world's few large "founder" populations, settled thousands of years ago by a group that constructed sacred sites, like the tomb area shown here.*

## POE'S VISIT, CONTINUED FROM PAGE 1

here through the sheer force of my will, for the singular purpose of imploring you, learned researchers and librarians, to determine the mysterious cause of my recurring illness and death."

Poe then set forth his symptoms in a spellbinding, 40-minute solo turn. Drawing from his writings, the author whose words have haunted us all told how he had been haunted by all manner of health problems.

In the aptly named tale, "Loss of Breath," for example, he noted, "The sensations of my illness were much like those of a man upon the gallows: I heard my heart beating with violence—the veins in my hands and wrists swelled to nearly bursting—my temples throbbed tempestuously—and I felt that my eyes were starting from my sockets...Confusion crowded upon confusion like a wave upon a wave."

Next, with a piercing gaze and florid gestures, Poe acted out his masterpiece, "The Tell-Tale Heart." The audience heard the story differently than ever before, this time listening for clues about the author's health. For example, this revelatory passage: "TRUE!—nervous—very, very dreadfully nervous I had been and am; but why will you say that I am mad? The disease had sharpened my senses—not destroyed—not dulled them...And have I not told you that what you mistake for madness is but over-acuteness of the senses?"

Poe described other physical sensations—dull lethargy, hemi-syncope or half swoon, numbness, chills, dizziness, inertia. One of his doctors said he had "excessive nervous prostration and loss of nerve power, resulting from exposure"—although to what he did not say. One said Poe's "disease affected the encephalon, a sensitive and delicate membrane of the brain." Others theorized about heart disease.

Whatever his health problems, the writer revealed, they always grew worse when he lived in urban areas. During those periods, he felt "horrors haunting my mind, body and soul," a state of mind similar to that of Roderick in "The Fall of the House of Usher." When Poe lived in relatively rural Richmond, Va., or moved to upstate New York, his symptoms abated.

In his later years, Poe lived in Baltimore. When he died there on Oct. 7, 1849, no autopsy was performed. However, the city health commissioner listed the cause of death as "congestion of the brain."

Next, the house lights came up and Edgar Allan Poe put the audience to work. Was the commissioner right? Were any of Poe's doctors on the

mark? Did the author likely die of some other cause?

Audience members took a stab. Heavy metal poisoning? Drugs? Alcoholism? Encephalitis? A brain tumor or lesion? Bipolar disorder? (One even suggested, as delicately as possible, syphilis.) Poe patiently dismissed each one based on his previous research or experience. Then a tall bearded man raised his hand.

He said he was Albert Donnay, an environmental health engineer, and told Poe he believed he was poisoned by repeated exposures to gas lighting in Baltimore, Philadelphia and New York. Donnay said he first presented the theory at a meeting of the American Chemical Society in 1998 and first published it in the *International Journal of Toxicology* in December 1999.

This was the big "ah ha!" The one-man show had been a two-man show from the beginning, with Keltz and Donnay in cahoots. Now Donnay took the podium and presented his findings, complete with slides.

Carbon monoxide (CO) poisoning was unnamed in Poe's day, its symptoms not recognized as a distinct disorder in American medicine until 1869. Its discovery was claimed independently by two physicians, who proposed the same new name, "neurasthenia," from the Greek roots meaning "nervous weakness," to describe it.

Donnay revealed a map of the United States comparing cases of neurasthenia with the average number of gas companies. The correlation looked indisputable.

Some of the most engaging moments came when modern-day Donnay interacted with 19th century Poe. Poe asked whether neurasthenia existed in the 21st century, since gas lighting has gone away. Donnay said that, unfortunately, the syndrome persists even though we have switched to using less toxic natural gas. "We also stupidly started installing ovens without exhaust flues and building attached garages without exhaust fans," Donnay observed. "As a result, millions are still being gas-poisoned in their homes." Donnay is a carbon monoxide specialist working to develop CO detectors for use in motor vehicles. He is also affiliated with the HUD-funded Healthy Homes project at the University of Maryland School of Nursing.

Donnay said he had painstakingly analyzed the symptoms described in Poe's writings; all seemed consistent with gas light poisoning. He also analyzed the U.S. presidents who lived in the White House when it was gas-lit, from 1848 to 1891. Eleven of the 12 showed a neurological abnormality associated with CO poisoning, in which one eye droops lower than the other, while the mouth slants down the other way. (President Abraham Lincoln, a "drooper," complained of the same symptoms that



Edgar Allan Poe came to NIH to clear up the mystery of his own death. He seemed satisfied with the diagnosis: carbon monoxide poisoning from gas lighting. (Actor David Keltz portrayed Poe.)

bedeviled Poe: chronic fatigue, recurring headaches and blurred vision.) Pictures of Edgar Allan Poe show the same facial droop.

Poe couldn't resist asking Donnay whether anything could have saved him from death by carbon monoxide poisoning. The researcher said that if his case had been detected in time and diagnosed correctly, he probably could have been saved by today's standard treatment for the condition. It calls for moving patients to fresh air immediately and providing 100 percent oxygen as soon as possible.

Donnay then commended Poe for writing the first and many subsequent detailed descriptions of carbon monoxide poisoning. "Unfortunately, doctors still have trouble assessing symptoms such as these that they cannot see or hear for themselves. But thanks to you, we now know that chronic CO poisoning has a unique Tell-Tale Face, which should make it much easier for doctors to recognize this syndrome from now on," he said in closing. Poe seemed pleased to have been of help and grateful for Donnay's diagnosis. ■

#### NIH'ers To Head Interferon Society

For the next 4 years, the International Society for Interferon and Cytokine Research will be led by two members of the NIH research community. In 2002 and 2003, the ISICR president will be Dr. Keiko Ozato of NICHD, followed in 2004, 2005 by Dr. Howard Young, NCI. The past president was Dr. Kathy Zoon, CBER, FDA. More information about ISICR and its annual meeting (Torino, Italy, Oct. 6-11) can be found at [www.isicr.org](http://www.isicr.org). ■

*Dr. Randolph Addison has joined the Center for Scientific Review as scientific review administrator for the SSS-U study section in the cell development and function integrated review group. The section reviews small business innovation research grants, applications for shared instrumentation, as well as other applications focused on innovative microscopic instrumentation and techniques. Addison received his Ph.D. in biochemistry from Cornell University, studying mitochondria biogenesis. In postdoctoral research at the University of North Carolina, Chapel Hill, he studied the intracellular mechanisms of energy*



*transduction. He then became an assistant professor of cell biology at Rockefeller University, then continued to study at the University of Tennessee Medical Center in Memphis. Prior to coming to CSR, Addison was a research associate professor of biochemistry and molecular biology at Georgetown University.*

#### Bottone's Book for Kids Hits Smithsonian List

As a child, NIEHS's Frank Bottone was forever asking that infamous childhood question, "Why?"

The answers he compiled over the years formed the basis of his science book for children that just hit the "2001 Smithsonian's Notable Books for Children" list. *The Science of Life: Projects and Principles for Beginning Biologists* is an activity book designed to hook kids' interest in science and show them how to



Frank Bottone

find their own answers to those "why" questions. The book's title reflects Webster's definition of biology, but Bottone describes it as a book on the science of everyday life. Written for kids age 9 and up, the book uses practical knowledge to provide a solid foundation in science and nurture a life-long interest in the topic. It is organized into chapters based on the five kingdoms of life, and it explains the scientific method. Using "stealth learning," where kids are too busy having fun to realize they are learning, the book walks kids through a series of exercises using items commonly found in the home and at school.

Originally, the book was intended for preschoolers, but evolved to fit an older audience. Bottone said he wanted to develop a book that did not speak down to kids. The 32-year-old biologist said it took 3½ years of weekends and evenings to complete the book. He wrote it while he was working at the University of North Carolina at Chapel Hill, prior to coming to NIEHS's Laboratory of Molecular Carcinogenesis.

The book was published in July by Chicago Review Press, an international publisher of academic and trade books. It shows kids how to make their own culture media, which they use in the experiments. They learn things like how bread molds form and how insects communicate. In one such experiment, children grow bacteria and determine the most effective way to inhibit the growth: using an antiseptic, a disinfectant or plain soap and water. Another experiment shows youngsters how to collect and compare night-flying versus day-flying insects and shows how to clone a mushroom from a piece of its own tissue.

The book features an easy-to-understand glossary, an index and a list of web and other resources kids can use to further pursue science.

Bottone's choice of reading material when he has free time? Non-fiction science, microbiology and biological terror.—Colleen Chandler ■

#### HRDD, USDA Offer Classes

HRDD, in partnership with the USDA Graduate School, is offering several human resource management classes throughout fiscal year 2002.

Classes began in January with "Correcting Employee Conduct and Performance." HRDD/USDA will offer "Pay Setting" at the end of January and "Mediating Employee Disputes" in early February. These two courses will focus on federal payment procedures and how to be a good mediator when employee conflicts arise. From Feb. 25-28, "Adverse and Performance-Based Actions" will be offered, which is ideal for federal personnel specialists, administrative specialists and managers who prepare or decide adverse actions. For more information, visit HRDD's web site at <http://www.learningsource.od.nih.gov> or call 496-6211. ■

## AGING WELL, CONTINUED FROM PAGE 1

effects of how people live their lives have very important influences later in life.”

She described imminent changes in the world's vital statistics. In the U.S.—which reflects trends around the world—the proportion of older adults went from roughly 4 percent in 1900 to 13 percent today, and will increase to more than 20 percent by 2030. By 2020, one in 6 people will be over age 65. Women account for the majority of older people now, and although the gap between the sexes is narrowing slightly, elderly women will continue to outnumber elderly men.

“It's not just about old people anymore,” Carstensen pointed out. “When over 20 percent of a given society is over age 65, it matters to all of us—old and young alike.” Everything will change, including families, health care, education, public policy and financial markets, she continued. The nature of work, and people's expectations of work, will change.

“Mostly when we hear this,” she said, “it's framed as a crisis on the horizon. I want to argue that there is nothing inherently wrong with an older population. We need to stop asking, ‘How do we cope with aging?’ and ask, ‘How do we ensure that the

maximum number of individuals reach old age in optimum physical and mental health?’ That is the challenge of the 21st century.”

Carstensen also presented the bad and good news about cognitive changes that come with age: Studies

show that as people age, working memory and perceptual speed decline, and processing of new information is slower. Older people have poorer comprehension of text and experience word-finding difficulty, that “tip of the tongue phenomenon. This is not dementia, by the way,” she explained. “We are talking about normal, cognitive aging.”

On the positive side, areas of preserved functioning or growth include memory for emotional information (“Older people actually outperform younger people in recognition of slides promising an emotional reward”); stories told by elderly people are more interesting and coherent; access to acquired knowledge is maintained (“You can retrieve things you know as well when you're older as you did when you were young”); solving problems related to everyday life, or “what some people call wisdom” remains intact; and mental health (“some say old people are actually happier than young people”) may even improve.

The neurological model of the aged brain has also

been altered in recent years, Carstensen said, as some scientists now suggest that cognitive decline is due more to biochemical changes in intact neural circuitry than progressive cell death. The new model is better also because instead of relying mainly on how an average person ages and performs on mental tests, it considers individual differences among older people.

What accounts for individual differences? Carstensen gave several examples: “Well-educated people do better,” she said. “If you're married, you do better. Being free of important physical illnesses, getting proper amounts of exercise and nutrition also count a lot.

“Interestingly, in the United States, being white is related to better performance cognitively later in life,” she noted, citing an outline of a theory by former NIH associate director for behavioral and social science research Dr. Norman Anderson about possible links related to chronic racism, hypertension, health and long life. “Recent data are beginning to change the question from ‘what's wrong with these individuals?’ to ‘how is the environment failing these individuals?’” Carstensen said.

The fourth and final 2001 seminar in the series sponsored by the NIH Office of Research on Women's Health was opened by Dr. Vivian Pinn, NIH associate director for research on women's health. “Successful aging is a very important topic,” she said, “and we have adopted it as one of our priorities for the coming year in terms of stimulating new and expanded research.”

Dr. Nanette Santoro of Albert Einstein College of Medicine, who discussed the endocrinology of aging, recommended that gerontology researchers now move beyond merely studying changes to a woman's reproductive system.

“We've got to get off the ovary and estrogen as being the whole reason for aging in women,” she said. “There has been intense focus on those issues, yet menopause and aging must be disentangled as two different processes. Over time, we've begun thinking of estrogen as the WD-40 for aging endocrine systems, but if you haven't taken care of the rest of the machinery, throwing a little estrogen on it isn't going to do much. However, if you're finely tuning an already well-kept, or reasonably well-kept machine, [estrogen therapy] may have some benefit.”

She said scientists should begin to incorporate a more holistic view of the body—particularly a woman's body—as it ages. “I think it's really important and significant that we have aging models of endocrine function,” Santoro said, “but they need to be interpreted within the whole person. We need to get out of the situation where we confine our endocrine observations to one system. It's usually good science to isolate the system, but I



ORWH seminar panelists include (from l) Dr. Gloria Sarto, Dr. Thomas Malone, Dr. Pamela Peeke, Dr. Laura Carstensen and Dr. Nanette Santoro.

think we've gone as far as we can with that approach and need to start integrating them again. Healthy aging changes are just beginning to be investigated. We're starting to have a database of changes that may form the basis of therapy, but obviously the eventual goal is to identify issues early. All of us want to live to be 103, like Jiminy Cricket, but we want those to be a good 103 years."

Nutrition and fitness specialist Dr. Pamela Peeke of the University of Maryland School of Medicine offered practical advice on "Power Aging: Eating and Moving for Optimal Aging."

Citing studies on people who lived past 80, she listed several common aspects of their lives: Most have never been obese, alcohol consumption among them is not common, smoking is almost nonexistent, and they are "stress resilient, physically active consistently and psychologically stimulated," she noted. "It's simple. If you want to live well, you move!"

Peeke said that as people reach middle age, some weight gain—"filling in"—particularly between the belly button and the pubis is normal. "The fat that accumulates above the abdominal muscle wall does not impact significantly on mortality and morbidity," she explained, revealing the humorous titles she has given those added inches: "the menopot," for women; "the manopot," for men.

"It's the fat deep inside the belly that is most dangerous," she continued, soberly. "That's associated with diabetes, stroke, high blood pressure, heart disease as well as a variety of cancers. It's no longer how much you weigh, it's also where you weigh it. If you're filling in deep inside your belly, that's a problem."

Peeke said reasons people should "keep moving" as they age include improvements in cognitive function, mood and sense of well being as well as in daily functioning, strength, flexibility and endurance.

"All of our studies—many sponsored by the National Institute on Aging and other gerontology centers—found clearly that all the way through their eighties and into their nineties, people who have been normally sedentary and have lost a tremendous amount of muscle mass can recoup that very nicely and increase power and strength as well," she said. "Sedentary people between the ages of 20 and 70 can lose upwards of 40 percent of their muscle mass and 30 percent of strength. That's why it's so easy to gain weight. They lose that muscle mass that allows them to burn calories efficiently."

She encouraged a regimen that includes walking 30 to 45 minutes a day, lifting weights for 30 minutes 2 or 3 times per week and stretching 3 times daily.

In order to "eat for optimal aging," Peeke suggested increasing fruits and vegetables, adding fish (which contains heart-protecting Omega-3 fatty acids) as a source of protein, drinking green tea for the polyphenols and other chemicals that have been



shown to reduce risk for some cancers, and using monounsaturated oils such as olive oil. Decreasing red meat servings by once per week, she counseled, could reduce the incidence of colon cancer nationwide by 11 percent.

Concluding tips on diet, Peeke quipped, "If you haven't found the fiber message by now, then you are just simply not regular." She also urged the audience to decrease consumption of refined sugar, processed foods, saturated fats, hydrogenated fats and cholesterol. In addition to following general recommendations on vitamins, she suggested, people can help their bodies age better by considering such dietary supplements as lycopene, folate, vitamin E, selenium and a multivitamin.

The seminar also heard from two firsthand experts on aging well. University of Wisconsin professor Dr. Gloria Sarto, who discussed "Aging with Attitude," said that beyond an absence of illness, the mind plays an important part in a person's ability to age well. She listed several key attitude factors: having self-esteem, exerting control or autonomy, developing quality relationships with other people and "seeing life as meaningful."

In addition to her professional duties, Sarto coaches volleyball and soccer, and on occasion shoots hoops. "One does not grow older without a certain amount of resilience," she said. "Find something positive in the face of adversity. See an ordeal as an opportunity to learn."

Offering "Thoughts on Successful Aging," former NIH deputy director Dr. Thomas Malone, who is 75 and for whom NIH's Bldg. 31 fitness center is named, called himself a "living witness for successful aging." Athletically inclined from a young age, he has continued to swim, jog and teach his beloved judo. He said the most stimulating and valuable thing he and his wife had done was to rear his grandchildren after their mother was paralyzed in an automobile accident. The routine of going through the education process all over again, reviewing homework material that includes "the new math" and translating it for these young people has helped him maintain cognitive function, said Malone, who took up flying lessons at age 50 and recently began learning to play the violin. "It's entirely satisfying to do this at an advanced age," he said. "I also think young. I don't for a moment feel or act like I'm in my upper seventies." ■

*Speakers (from l) present similar viewpoints on the topic of aging: Santoro urges a holistic approach to research models, Peeke emphasizes eating right and exercising, Sarto encourages building a strong support system and Malone stresses staying active physically as well as mentally.*

PHOTOS: BILL BRANSON

## HISPANIC INTERNS. CONTINUED FROM PAGE 1

He says the story reminds him of events in his own life. When he began college at California State University, San Bernardino, his high school friends, who began working right away, were less than supportive of his higher education. "They were putting negative thoughts in my head, questioning whether school was the best thing for me to be doing," he said. "It wasn't the positive reinforcement I needed—especially being the first in my family to go to college."

He felt like they were pulling him down, just like the crabs in the folktale.

Macias recognizes that some "Mexican crabs" may have the best of intentions—perhaps trying to protect one another from the unknown, possibly dangerous world outside the basket.

"When I started college," he said, "my parents, even though they cared for me, gave me grief for being away from the house for study groups, meetings, and traveling for conferences—things that were bettering me. Without even knowing it, they were pulling me down."

Macias is one of nearly 630 students who participated in the National Internship Program of the Hispanic Association of Colleges and Universities (HACU) last year. HACU developed the program in 1992 to give undergraduate and graduate students job experience in the federal government and to help federal agencies create a pipeline for hiring Hispanics. The program caught the attention of private corporations who now also hire HACU interns.

Freddie Mac asked HACU to recommend an intern who could add a youth perspective to their "Celebrating Diversity" forum, held during Hispanic Heritage Month last October. HACU recommended Macias, and his supervisor, OLRs Director Marc Horowitz, endorsed his participation.

#### Hispanics underrepresented in government

Macias is not the only Hispanic who has felt trapped, pulled down or who has faced difficulty achieving success; this seems to be an acute problem within the federal workforce, including NIH.

Recently, the Office of Personnel Management sent a report to the President stating that Hispanics are the only underrepresented minority group in the federal workforce. According to the report, Hispanics represent 12.5 percent of the general population and 11.8 percent of the national civilian labor force, but only 6.6 percent of permanent federal employees. Moreover, the gap is increasing.

The percentage of Hispanics at NIH is even smaller—just over 3 percent, according to Milton Belardo, Hispanic Employment Program manager in NIH's Office of Equal Opportunity.

There is good news however. "The federal government has a fantastic opportunity right now,"

says William Gil, executive director of HACU's National Internship Program. "We have more Hispanics going to college than ever before." He says the federal government needs to promote itself to students, and he points out that internships are an excellent way of doing that.

According to Gil, HACU has arranged 3,300 internships—the vast majority in the federal government and most in the Washington, D.C., area—since 1992. Employers offered about 74 percent of the interns future employment opportunities.

Having a HACU intern has certainly been a positive experience for OLRs. While recruiting

*Daniel Macias, a financial analyst intern in the Office of Loan Repayment and Scholarship, recently spoke at a Freddie Mac forum on diversity.*



science students at a HACU meeting in 1999, Horowitz met a number of "gifted and eager" college students who were interested in accounting, administration, business and finance. "I thought HACU could be a valuable resource to identify interns whose interests would match our programmatic needs, and indeed that is the case," he says. "After my experience with this intern, I would have no second thoughts about recruiting from HACU again."

Exposure to the federal government also seems to increase the likelihood that interns will work for the government in the future. Based on evaluations of last summer's cohort, HACU reports that only about 50 percent considered working for the federal government before the internship. After the internship, the number rose to 80 percent.

Macias, who is currently taking a semester off from an M.B.A. program at Cal State, San Bernardino, is a good example of this. He enjoys his work so much that he is considering transferring to the University of Maryland while continuing to work at NIH. Not only has he applied for a permanent position in OLRs, but he has also begun assisting with the outreach and recruitment of other Hispanics to the office. He says, "There's a lot of room for opportunity and growth that I had no idea about."

He also says his responsibilities at NIH give him a chance to apply what he learned in college. He is evaluating a user's manual for the OLRs's Management Information System, as well as suggesting improvements for the MIS itself. He is also learning

#### Being Treated for Depression?

Doctors at NIH are seeking individuals being treated with selective serotonin reuptake inhibitors (SSRIs) such as Prozac or Zoloft and others, which are widely used antidepressant agents. The researchers are also seeking individuals who are not on SSRI medications but who are taking non-SSRI substances (Wellbutrin). Participants will be asked to donate 4 tablespoons of blood for routine screening and evaluation of platelet function. The visit will be no longer than 1 hour and compensation is provided. If interested or you have questions, call Donna Jo Mayo, 496-5150.



the financial analysis and sophisticated calculations that the system performs, and he is performing audits of program participants.

His time in Washington is also likely to influence his final decision. Living far away from his home and family in California has been a new and challenging experience, but also a positive and exciting one. He and his roommates, who are also HACU interns, have taken advantage of the opportunity to see and do new things, including visiting Atlantic City, Harper's Ferry, New York City, and going white-water rafting in Pennsylvania.

Regardless of where he decides to live, he plans to get more hands-on experience while continuing his graduate education, and his ultimate goal is to have his own consulting firm working with start-up and minority companies and non-profit organizations that help develop these companies.

Macias offers the following advice to other Hispanics and minorities: "Take advantage of all the opportunities available to you. There were people before us who didn't have those opportunities, so it's up to us to do so." His advice resonates with the motto of the HACU National Internship Program: *Abriendo las puertas de oportunidad—Opening the doors of opportunity.*

NIH supervisors interested in hiring a HACU intern (there are currently a dozen on campus) should contact Dr. Lorrita Watson at 594-7784 or at lw75v@nih.gov. ■

*Joseph "Chip" Hughes, director of the Worker Education and Training Program at NIEHS, received the DHHS Secretary's Recognition Award for Heroism, Exceptional/Volunteer Service at a recent summit on terrorism in New York City. The award cited Hughes' dedicated support of the health and safety of emergency responders and remediation workers at the site of the World Trade Center disaster. Immediately after the Sept. 11 terrorist attacks, he began mobilizing program resources to provide whatever assistance was*



*necessary to make sure the safety and health of the work force remained a high priority, according to the award citation. He managed to get 3,000 respirators to the scene quickly and initiated action to begin monitoring air quality in the area. Hughes also diverted \$440,000 to support programs at the site.*

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### Perception Study Needs Volunteers

The Uniformed Services University department of medical and clinical psychology needs healthy male and female volunteers, ages 18-80, to participate in a 2-hour study of perception. Payment is \$30. Call (301) 295-9679 to volunteer. ■

### HRDD Class Offerings

The Human Resource Development Division supports the development of NIH human resources through consultation and provides training, career development programs and other services designed to enhance organizational performance. For more information call 496-6211 or visit <http://LearningSource.od.nih.gov>.

|  |               |
|--|---------------|
| Speaking on the Job, Part II: Presenting Yourself and Your Ideas | 1/28-30       |
| IMPAC II Committee Management for CMOs and CMAs                  | 1/29          |
| English Refresher  | 1/29          |
| Comprehensive Math with Refresher                                | 1/29          |
| Introduction to MS Access 2000                                   | 1/30          |
| Pay Setting  | 1/30, 31, 2/1 |
| The Power of Conversations                                       | 1/30, 31      |
| Intermediate MS Excel 2000                                       | 2/5           |
| Effective Memory Development                                     | 2/5           |
| The Professional Office Manager I                                | 2/6, 7        |
| Intermediate MS Word 2000  | 2/6           |
| IT for the Non-IT Manager  | 2/8           |
| Commissioned Officers Leave & Attendance                         | 2/11          |
| Mediating Employee Disputes                                      | 2/11-14       |
| Simplified Acquisitions Refresher for AOs                        | 2/12          |
| Purchase Card Training   | 2/13          |
| Time Management: Organizing Yourself                             | 2/14          |
| Professional Service Orders                                      | 2/14          |
| Speaking on the Job, Part I: Improving Voice Quality             | 2/14, 15      |
| NIH Retirement Seminar-CSRS                                      | 2/19, 20, 21  |
| Introduction to Marketing  | 2/19          |
| Principles of Accounting II                                      | 2/19          |

### NCI's Abrell Dies in Car Crash

Dr. John Abrell, former section chief in the Grants Administration Branch, Division of Extramural Activities, NCI, died Dec. 2 at a shock trauma center in Baltimore following a car wreck on Dec. 1. He had served NIH in several intramural and extramural scientific capacities.

Jack, as his friends called him, was "the HSA (health scientist administrator) of HSAs, the most knowledgeable, ethical, dedicated scientific review administrator that NCI ever had," said NCI's Dr. Manuel Jose Torres-Anjel. "He was tall, handsome, elegantly attired, and very difficult to ignore when he entered a room."

Abrell had been chief of the clinical review section, in charge of the cancer clinical review committee, which reviews the science of NCI's cooperative clinical trial groups.

Before coming to NIH, Abrell received a B.S. degree from Duke University, an M.S. from Dartmouth College, and a Ph.D. in chemistry from Washington University in St. Louis.

He died near his home in Adamstown, Md., where he enjoyed breeding and exhibiting Siberian huskies and Bernese mountain dogs, an avocation that produced many champions.

Abrell is survived by his wife Elinor, one daughter, Laura Bartels, three grandchildren, and many other relatives. His friends and colleagues at NIH join the family in mourning a great loss.

### Library Winter/ Spring Seminars

Trainers at the NIH Library in Bldg. 10 are offering new seminars that can help enhance your research skills:

PDA's (e.g., Palm Pilot): An Introduction - Jan. 24

PDA's: Advanced Applications for Clinical Use - Jan. 24

Nursing Resources - Feb. 14, Mar. 28

Clinical Trials on the Web - Apr. 11

For information on these and other seminars such as PubMed, Web of Science, EndNote, and Reference Manager, go to the NIH Library's training catalog at <http://nihlibrary.nih.gov/training.htm> or call 496-2184. Training is free and for NIH staff only. No registration is required.

FREDRICKSON, CONTINUED FROM PAGE 1

advances that laymen initially found almost unpalatable. Rather, he was describing the advent of recombinant DNA research, which grew out of discoveries on the West Coast in the early 1970's, before Fredrickson became director of NIH in 1975. His recollections, given as a History of Genetics Lecture, form the basis of his new book, *The Recombinant DNA Controversy: A Memoir*, available in the FAES book store.

"It's not to be forgotten that we're 3 months into a war," he began, "but we're also in the midst of a revolution—and we have been for the past 30 years—and it's the most important one in the history of medicine and biology. I was in the first phase of it," he recalled of his 6 years as NIH director, "and it was the most enjoyable period of my life, I think."

Relying on memory and on anecdotes from the book, Fredrickson, 77, traced the labyrinthine 5-year journey from when he first learned about restriction enzymes and molecular biology's ability to cut and paste segments of DNA, to eventual creation of HHS guidelines governing recombinant DNA research, and establishment of a recombinant DNA advisory committee (RAC) that exists to this day. Though the means to these ends was somewhat tortuous, Fredrickson argues that science's success in being able to use this new tool, in the face of initial public alarm, was due to two things: keeping the public, via Congress, fully informed, and maintaining, intact, what he called a sort of "Jeffersonian social contract" between intellectual leadership and society at large whereby mutual respect and openness, not harsh regulation, rule the day.

The talk was a kind of primer for new NIH directors: here's what to do when history throws you a curve you didn't see coming. Fredrickson, a heart disease expert with a sort of unselfconscious patrician air (he could not bring himself to use the word "protests" to describe much-publicized anti-recombinant DNA research uproars in Ann Arbor, Paris and Cambridge, Mass.; he called them "manifestations"), had no idea what recombinant DNA research was all about when he took office on July 1, 1975.

Two years earlier, at a Gordon conference on nucleic acids, Dr. Herbert Boyer, in whose laboratory the first restriction enzyme capable of cleaving DNA—EcoR1—had been discovered, had informed molecular biologists that the technique had evolved to the point that "we can put any pieces of DNA together that we want," Fredrickson recounted. Realizing immediately that the public would fear creation of new and dangerous chimeras, scientists including then NCI biologist Dr. Maxine Singer urged that a letter be drafted to the National Academy of Sciences, and published in *Science*, that

would alert the world to the new recombinant science, and propose rules for its application.

"A group formed to decide what it all meant, and (Stanford biologist) Paul Berg was named chair," Fredrickson said. The group agreed on four immediate goals: institute a world moratorium on the research, to allay public fears of the creation of new genes; consider what might happen if novel genes were set loose; ask the NIH director, then Dr. Robert Stone, to appoint a committee to draft guidelines and perform risk assessment; and hold an international meeting very soon with all the leaders in the field to discuss guidelines.

Back at NIH, Stone quickly formed a 15-person study section—the first RAC, all of whom were biological scientists save one layman.

The big international meeting was held at Asilomar, Calif., a favorite retreat destination for Stanford's science faculty, to which Berg belonged; interestingly, Fredrickson would not visit Asilomar for another 25 years. At this meeting, scientists from many nations and scientific specialties hammered out concerns about containment and crafted a framework for guidelines, only to be deflated late in the meeting with news, from lawyers, about liability issues. "A fear arose that the government would take it all over," Fredrickson said. Indeed, the NIH representative to the meeting, Bill Gartland, was told by the vice chairman (Dr. David Baltimore) at the meeting's end, "Tomorrow, it will all be yours."

"Little did I know what was coming," said Fredrickson, who succeeded Stone. The new director relied on advice from eminent NIAID virologist Dr. Wallace Rowe to get up to speed on the new science of recombinant DNA. From what he learned from Rowe and other prominent intramural scientists, Fredrickson set three goals: the public must have a say and be kept informed on the guidelines; the guidelines must be just that, not regulations holding the force of law; and NIH should be the venue for establishing the guidelines, as well as the principal source of funding of the new science.



Fredrickson speaks in front of slide image of Dr. Paul Berg.

Fredrickson quickly hired what he dubbed “my kitchen RAC”—lawyer and physician Dr. Joseph Perpich, who “knew the choreography of Capitol Hill” from having worked on Sen. Ted Kennedy’s staff, and Dr. Bernard Talbot, then an NIAID scientist and now a medical officer at NCRR, who was asked to go out and recruit intramural specialists who could advise Fredrickson.

The details of how Fredrickson’s management team shepherded a livable version of the recombinant DNA research guidelines through NIH’s parent agency HHS, its leader Joe Califano, while at the same time recruiting support from Congress through some key personal contacts form much of the book.

In one episode, Fredrickson writes about a session at the Navy hospital bedside of an important congressional leader who happened to be a diabetes patient and amputee to whom Fredrickson suggested, within earshot of several influential congressmen, that the new research could lead to production of human insulin; conceded the author, “I guess I

was unscrupulous.” Other chapters chronicle how Fredrickson’s team avoided the pitfalls of regulation, dealt with court cases (*Mack v. Califano*, *Friends of the Earth*, et. al.), witnessed public approbation (one “manifestation” near Harvard included the banner “Stop DNA Research—There are already more forms of life in Harvard Square than the world can stand”) and negotiated that all-time wonk albatross, the Environmental Impact Statement.

Fredrickson says he is “quite sure” that NIH’s strong effort to keep the public informed saved recombinant DNA research, but he allows that the agency’s methods didn’t keep everyone happy. He doesn’t seem to care, as long as NIH came out respectably.

“The guidelines are still alive after 25 years,” he declared, and so is the RAC, despite one of Fredrickson’s successors’ efforts to kill it. “In all, it was a good reflection on NIH, and certainly brought great credit to the scientists who participated.” ■

## CSR’s Martin Slater Retires

By Don Luckett

“Well-executed, disciplined, and caring”—these words describe the charcoal and chalk drawings of Dr. Martin Slater, who recently retired from the Center for Scientific Review as scientific review administrator of the microbial physiology and genetics 1 study section. His drawings have appeared in local exhibits, and he has been a featured artist on the About.com drawing/sketching web page.



Dr. Martin Slater

The lines of his career also have been well-executed, disciplined and caring. Slater devoted 21 years to his study section. “He cared a lot about his work and the scientific community he served,” said Dr. Rona Hirschberg, chief of CSR’s infectious diseases and microbiology integrated review group. “He did a really good job and was highly regarded by the community.”

Slater began his career with a B.S. in bacteriology from the University of Pittsburgh and then earned an M.S. in microbiology from Miami University, Ohio, and a Ph.D. in microbiology from the University of Hawaii. He studied *Mycoplasma* and focused on the control of cell division. He conducted his postdoctoral research at Tufts Medical School, studying reversible inhibition of DNA replication. He specifically assessed how hydroxyurea could regulate cell division in yeast cells. Hydroxyurea currently is used to inhibit cancer cells as well as the

human immunodeficiency virus. Slater then went to the Worcester Foundation for Biomedical Research in Massachusetts, where he conducted research on tumor viruses.

In 1975, he came to NIH to join the intramural program at NIDDK. There, he conducted research on cell division and the synthesis of chitin in yeast cells. He also helped initiate research on the genetic control of chitin synthesis. Looking back on his research career, Slater noted the value of questioning first impressions. Paraphrasing a quote from an old physiology textbook, he said, “The task of the intellect is to find relationships between things that don’t seem to be related and the differences between things that seem the same.”

Before retiring from CSR, Slater displayed his artwork in a one-man exhibit in the center’s library. His images showed the talent he developed in drawing classes at Montgomery College, the Rockville Arts Place, and the Torpedo Factory in Alexandria. One of the drawings he exhibited previously won honorable mention at a Montgomery County Art Association exhibit. He was particularly proud of it—a portrait of his oldest daughter, Allison.

In retirement, he may explore interests in yoga and astronomy. But he intends to devote most of his time to being an artist. With his drawings, he may continue to show us “the relationships between things that don’t seem related and the differences between things that seem the same.” ■



Slater is particularly proud of his portrait of his daughter Allison.

## NHGRI Research Fellow Wins Marshall Scholarship

By Judith Wyatt

When Yong Suh decided he wanted to study the theoretical pathways linking Alzheimer's and Parkinson's disease rather than begin an M.D./Ph.D. program, he knew the scientist with whom he wanted to work and the university he wanted to attend. All he needed was the funding.

So, this research fellow in Dr. Francis Collins' lab at NHGRI, who has won more than 20 merit scholarships—including the National Merit Scholarship, the Goldwater Scholarship and the Medical Science Training Program Scholarship (M.D./Ph.D.)—looked to the British Marshall Scholarships, a \$50,000, 2-year award that offers 40 American students an opportunity to attend any British university.

Suh had found a mentor in British Royal Institution director Dr. Susan Greenfield, who makes her research home at Oxford University, plumb-

ing the possible common etiology between Alzheimer's and Parkinson's disease. Suh's primary objective was to work with Greenfield. Winning a Marshall scholarship could help him do just that. "Dr. Greenfield thinks outside the box," said Suh, from Collins' lab, where he is currently involved in research on the genetics of type II diabetes. "She has novel ideas—and I thought she would be a great person to learn from."

Suh contacted Greenfield, who was interested in having him join her research. He applied for the Marshall in Atlanta through the British consulate; the paperwork went in before Thanksgiving and he won the scholarship in December.

Three months after his year at Collins' lab is over in June, Suh will join 39 other Marshall winners—who will pursue studies in philosophy and economics, development, information systems, mathematics and pharmacology—and work with Greenfield to earn a master's degree in neuropharmacology. The Marshall scholarship is one of the highest undergraduate accolades, considered equal to becoming a Rhodes scholar.

Suh's research interest was motivated by volunteer work at hospitals in his hometown of Lilburn, Ga. He discovered a love for medicine, but also wanted to understand the science behind the disease symptoms he saw.

"I saw how Alzheimer's and Parkinson's have such devastating effects on patients and families alike. It was compelling to me," explained Suh, who has already been accepted at the University of Rochester's M.D./Ph.D. program. "The hospital

brought the science to life for me and made the symptoms I was seeing clear."

Suh was 16 when he began undergraduate work at the Honors College of the State University of West Georgia, majoring in chemistry and studying the biochemistry of how proteins unfold. He graduated at 20 last June and applied for an Intramural Research Training Award at NHGRI at the same time he applied for medical school. When he won the NHGRI award, he decided to postpone medical school in favor of research with Collins.

"I've had a chance to learn and contribute to this vast research involving type II diabetes," said Suh, "and conduct high throughput, genomic research.

"But I've also had the opportunity to know the man behind the scientist. Dr. Collins is a man of science, but he's also a musician and a religious man, who is very involved with his students."

Suh feels "enormously grateful" to be working at NHGRI and to have won the Marshall scholarship, which was established in 1953 as a British gesture of thanks to the United States for its assistance after World War II under the Marshall Plan.

"The Marshall scholarship also encourages fellowship among the students," said Suh. "I think that's another really important part of it—it can be the foundation of a lifetime of relationships." ■



NHGRI research fellow Yong Suh has won a Marshall scholarship to study, starting in June, at Britain's Oxford University.

### Wednesday Afternoon Lectures

The Wednesday Afternoon Lecture series—held on its namesake day at 3 p.m. in Masur Auditorium, Bldg. 10—features Dr. David W. Piston on Jan. 30; he will speak on "Imaging the Dynamics of Living Systems from Single Cells to Whole Animals." He is director, W.M. Keck Foundation Free Electron Laser Center, associate professor, molecular physiology & biophysics, physics and biomedical engineering, Vanderbilt University.

On Feb. 6, Dr. Eric J. Nestler, Lou and Ellen McGinley distinguished professor & chairman, department of psychiatry, University of Texas Southwestern Medical Center, Dallas, will talk about "Molecular Basis of Addictive States."

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

### College English, Math Refreshers

NIH'ers are required to take English and math placement exams prior to enrolling in nearly all of the courses Montgomery College offers. So don't forget to enroll in these two college classes that begin on Jan. 29. Through a partnership, HRDD and MC are offering several other college classes this semester; for details visit <http://LearningSource.od.nih.gov>. ■