

THE NIH RECORD

Still The Second Best Thing About Payday

In a Class of Their Own

PRATs Are Tomorrow's Leaders In Pharmacology

By Alisa Zapp Machalek

Steroid receptor pharmacology. Computer simulation of synaptic transmission.

Biochemical basis of learning and memory.

These are just a few of the areas under investigation by the new class of PRAT [Pharmacology Research Associate]

postdoctoral fellows. The class, comprising six fellows working at five NIH institutes, came on board Oct. 7.



Dr. Juanita Sharpe

SEE PRAT PROGRAM, PAGE 4

Khoury Lecture Explores Stem Cell Possibilities

When it comes to healing itself, the human body cannot perform the feats that a starfish can—we cannot grow back lost

limbs. However, our bodies still retain remarkable potential to heal from injury or disease. Might this power be tapped or tweaked to enhance our regenerative abilities, allowing us to regrow tissues and organs that we could not before? Might our bodies even be persuaded



Dr. Nadia Rosenthal

to slow or reverse the aging process?

SEE KHOURY LECTURE, PAGE 2

HIGHLIGHTS

1
An Enlightened View of Women's Health

Literacy is Crucial For Health

3
Masur Is Astute Clinician

New AIDS Exhibit At NLM

5
Celebrating Roscoe Brady's Research

9
NIH Holds Meeting On Hormone Therapy



12
Limits on Personal Use of IT

U.S. Department of Health and Human Services National Institutes of Health

December 10, 2002
Vol. LIV, No. 25

Beyond the 'Bikini View'

Scientists Urged to Expand Gender-Specific Research Portfolios

By Carla Garnett

Sex matters. It's that simple—and that complicated, according to an Oct. 21 lecture sponsored by the Office of Research on Women's Health to kick off NIH's new intramural research agenda on women's health.

"I think it's highly appropriate that—after having made sure that the way we do research and the way we support activities in the extramural program correctly address women—we finally come around to the intramural program," said NIH deputy director Dr. Ruth Kirschstein, in opening remarks. The first director of NIH's Office of Research on Women's Health, Kirschstein introduced the keynote speaker for the first in a series of lectures that also launched the women's health scientific interest group at NIH.

In a lecture titled "Women's Health in the 21st Century: Morphing into Sex-Based Biology/Gender-Specific Medicine," keynote speaker Dr. Marianne Legato, a cardiologist who founded and directs the Partnership for Gender-Specific Medicine at Columbia University's College of Physicians and Surgeons,

SEE GENDER, PAGE 10

Why Johnny Is Sick

Researcher Strengthens Health, Literacy Link

By Jennifer Wenger

If Johnny can't read, then his health is likely to suffer, too, someday.

Such are the stark findings of Dr. Dean Schillinger, University of California, San Francisco, associate professor of medicine at San



Dr. Dean Schillinger of UCSF

Francisco General Hospital, whose research is drawing a clearer connection between health literacy and the chances of beating, or at least successfully controlling, chronic illness. He recently delivered the first lecture in a series on health literacy at NIH. His talk, titled "Babel Babble: What Is the Doctor Saying? What Is the Patient Hearing?," was sponsored by NIDCD.

A person's health-literacy skill is his or her ability to read and understand health information and

SEE HEALTH LITERACY, PAGE 6



Dr. Barry R. Komisaruk, a program director in the NIGMS Division of Minority Opportunities in Research, recently received a 2002 National Role Model Mentoring Award. The award was presented by Minority Access, Inc., a nonprofit educational organization that assists federal agencies, universities and corporations to improve their recruitment, retention and training of minority researchers. Komisaruk was cited for his 17 years of service on NIGMS' Minority Biomedical Research Support grant at Rutgers, The State University of New Jersey. He spent 14 years as the grant's principal investigator, mentoring more than 100 minority students. He was among 10 individuals selected for a mentoring role model award. He received the award, an engraved clock, at the National Role Models Conference in Washington, D.C., recently.

KHOURY LECTURE, CONTINUED FROM PAGE 1

Dr. Nadia Rosenthal, an international expert on developmental genetics and the mechanisms of aging, will discuss these questions and report on how her recent stem cell research explores these issues when she delivers this year's George Khoury Lecture. The talk, titled "Prometheus' Vulture and the Promise of Stem Cells," will take place on Wednesday, Dec. 18, from 3 to 4 p.m. in Masur Auditorium, Bldg. 10.

Rosenthal has dedicated her career to understanding how the body builds itself from a single cell—and how it rebuilds itself when necessary. Her research focuses on mouse developmental genetics, particularly skeletal muscle and embryonic heart development. She has elucidated genetic pathways that control growth and disease in these tissues. In addition, she studies the molecular biology of aging and creates mouse models of human disease.

Rosenthal is head of the European Molecular Biology Laboratory (EMBL) in Monterotondo, Italy, near Rome. Since her arrival in Europe last year, she has become a member of the European Molecular Biology Organization and has been awarded the Ferrari-Soave Prize in Cell Biology. Other honors include an Established Investigator Award from the American Heart Association and the Whitaker Health Sciences Award from the Massachusetts Institute of Technology.

Rosenthal received her Ph.D. in 1981 from Harvard Medical School, and she has held the positions of senior associate at the Howard Hughes Medical Institute and associate professor of biochemistry at Boston University School of Medicine. For the last decade, she has served as consultant in molecular medicine at the *New England Journal of Medicine*. In 2001, she moved to EMBL from the Cardiovascular Research Center at Harvard Medical School, where she directed a biomedical research laboratory at Massachusetts General Hospital.

From 1981 to 1983, Rosenthal trained as a postdoctoral fellow in the laboratory of Dr. George Khoury at NIH, where her research focused on molecular virology. The Khoury Lecture is dedicated to the memory of George Khoury, who made seminal contributions to our knowledge of how genes are regulated and trained many outstanding young scientists who continue his work today.

All are welcome to attend a reception outside the auditorium with Rosenthal after the lecture. For more information, call Hilda Madine at 594-5595.—Jeff Miner 

Calcium Study Seeks Subjects

An NIH study is seeking healthy adult volunteers to examine the health effects of calcium supplementation over 2 years. Call 1-800-411-1222 (TTY: 1-866-411-1010) or email prpl@cc.nih.gov. Compensation is provided. 

FAES Announces Spring Courses

The FAES Graduate School at NIH announces the schedule of courses for the spring semester. The evening classes sponsored by the Foundation for Advanced Education in the Sciences will be given on the NIH campus.

Courses are offered in biochemistry, biology, biotechnology (daytime courses), chemistry, immunology, languages, medicine, microbiology, pharmacology, statistics, toxicology, administration and courses of general interest.

It is often possible to transfer credits earned to other institutions for degree work, and many courses are approved for category 1 credit toward the AMA Physician's Recognition Award.

Classes will begin Jan. 27; mail registration ends Dec. 27 and walk-in registration will be held Jan. 8-14. Tuition is \$100 per credit hour, and courses may be taken for credit or audit. Courses that qualify for institute support as training should be cleared with supervisors and administrative officers as soon as possible. Both the vendor's copy of the training form and the FAES registration form must be submitted at the time of registration. Note that FAES cannot access training forms entered in the NIHTS system; a signed hard copy (vendors' copy of SF 182 form) is needed in order to process registrations for classes.

Schedules are available in the graduate school office in Bldg. 60, Suite 230, the foundation bookstore in Bldg. 10, Rm. B1L101, and the business office in Bldg. 10, Rm. B1C18. To have a schedule sent, call 496-7976 or visit <http://www.faes.org>. 

NIH RECORD

Published biweekly at Bethesda, Md., by the Editorial Operations Branch, Division of Public Information, for the information of employees of the National Institutes of Health, Department of Health and Human Services. The content is reprintable without permission. Pictures may be available on request. Use of funds for printing this periodical has been approved by the director of the Office of Management and Budget through Sept. 30, 2003.

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

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

 *The Record is recyclable as office white paper.*

Masur Delivers Astute Clinician Lecture

By Colleen Henrichsen

"AIDS: A Window on Infectious Diseases," was the topic of the fifth Astute Clinician Lecture presented by Dr. Henry Masur, chief of the Clinical Center critical care medicine department, on Nov. 6.

Masur's early career focused on intracellular protozoa and how they evade host immune response. He was a resident at New York Hospital in 1979, when a 27-year-old man with no known immunosuppressive condition was diagnosed with *Pneumocystis carinii* pneumonia (PCP). Masur recognized that there was little precedent for this occurrence.

"In the 1970's, only 70-80 cases were diagnosed a year. In adults, those usually occurred in patients with organ transplants or oncologic problems," he said.



Dr. Henry Masur

"When I presented this case at intra-city infectious disease rounds in New York, a number of hands shot up from other clinicians who had recognized similar cases." His report of this outbreak was one of three that formed the first published report of AIDS.

Masur moved to NIH in 1982 to expand his investigations. This included studies of why HIV patients had a poor survival rate. He found that organisms that were previously rarely recognized—toxoplasma, cytomegalovirus and mycobacterium avium—were frequent causes of illness and death in HIV patients.

He worked on improving methods of diagnosing and treating these complications. Masur and his NIH collaborators developed new diagnostic tests for PCP, new therapeutic agents and new management strategies. They developed and patented the most widely used laboratory test to recognize PCP, developed improved techniques for obtaining patient samples for testing and developed and patented a new agent to treat PCP.

Masur also led efforts to make this information useful. "It's important to make sure the health care community and patients are aware of advances so that they really change patient outcomes," he said.

To that end, he and his colleagues at NIH, with support from the Office of AIDS Research, established the PHS Guidelines for Prevention of HIV-related Pneumocystis Pneumonia in 1989, which were the first HIV-related guidelines. In 1995, the CDC and the Infectious Disease Society of America

joined NIH as sponsors of these guidelines. The USPHS-IDSA Guidelines for Prevention of HIV-Related Opportunistic Infections are updated regularly. USPHS-IDSA Guidelines for Therapy of HIV-Related Infections will be published soon.

A native of Washington D.C., Masur graduated from Cornell Medical School. He trained in internal medicine at New York Hospital and Johns Hopkins Hospital and trained in infectious disease at Cornell, where he was on the faculty from 1978 to 1982. He came to NIH to become assistant chief of critical care medicine in 1982, and has held his current position as chief since 1989.

The Astute Clinician Lecture was established through a gift from Haruko and Dr. Robert W. Miller. It honors a U.S. scientist who has observed an unusual clinical occurrence, and by investigating it, has opened an important new avenue of research. ■

NLM Opens 'AIDS Ephemera' Exhibit

Out of the tragedy of the AIDS epidemic came a vibrant culture of ephemeral art—buttons, posters, cards, comic books and the like—designed to educate, motivate and inspire. Now, NLM has mounted an "AIDS Ephemera" exhibition, occupying the glass cases near the front entrance of Bldg. 38, the National Library of Medicine. It continues through May 27, 2003.

Produced by government health departments as well as private organizations, the visual culture of AIDS promoted knowledge of symptoms as well as means of prevention. To convey the public health message as broadly as possible, the material appeared in Spanish and French, as well as English. To grab attention, artists played with stereotypes of some of the disease's most affected subcultures—gay men in particular.

Some of the materials are playful or humorous, while others stress values such as responsibility and compassion.

The exhibit can be viewed during the library's regular business hours: 8:30 a.m. to 5 p.m. on Monday, Tuesday, Wednesday and Friday; 8:30 a.m. to 9 p.m. on Thursday; and 8:30 a.m. to 12:30 p.m. on Saturday.

NLM History of Medicine Division staffers Dr. Paul Theerman and Jan Lazarus curated the exhibit, assisted on copyright issues by Belle Waring. Troy Hill from NLM's Audiovisual Program Development Branch designed the exhibit. ■

TALK TO US



212-447-8200

THE AIDS HOTLINE

Everyday 9AM to 9PM

TDD 212-532-8570/8683

Hablamos Español

© The Estate of Keith Haring

This playful work by Keith Haring displays his trademark energy and street art style. Haring himself died of AIDS on Feb. 16, 1990.

PRAT PROGRAM, CONTINUED FROM PAGE 1

The PRAT program, established in 1965 and sponsored by NIGMS, provides training, career advice and networking opportunities to postdoctoral researchers. It is a 2-year program with the possibility for a third year. The overarching goal of the program is to train leaders in the field of pharmacology, says Dr. Pamela Marino, one of the PRAT co-directors.

Like the field of pharmacology, the PRAT program is cross-disciplinary. Fellows choose a preceptor at any NIH institute or the FDA and may conduct research in a wide range of fields, including molecular pharmacology, signal transduction mechanisms, drug metabolism, immunopharmacology, chemistry and drug design, structural biology, endocrinology, bioinformatics and neuroscience.

Take for instance Dr. Daniel Kolker, a first-year PRAT. Before coming to NIH, he studied biological rhythms by investigating whether an animal's ability to learn varies throughout the day. Now, as a fellow in NICHD, he is uncovering the molecular

basis for such behaviors by examining the cellular pathways that govern learning and memory.

Many of the fellows consider bumping shoulders with those in other fields to be one of the most valuable aspects of the program. They interact regularly through PRAT-sponsored seminars and events.

"Having peers outside my normal areas of interaction gives me a new and different perspective on my work," says Dr. Juanita Sharpe, a third-year fellow.

A monthly seminar series in which the second-year fellows present their work "allows you to practice talking about science so everyone can understand it—not just those in your field," Sharpe adds. That this skill will be especially useful for job interviews is

not lost on the fellows who, as a rule, are clearly focused on their next career transition—into permanent employment.

Most PRATs are considering jobs in academia, and if the trend continues, most will succeed, says

Marino. Of the 340 PRAT program graduates, more than 90 percent have continued in research careers, with more than 60 percent of these in academia or other research institutions.

One goal of the PRAT program is to expose fellows to a wide range



Dr. Benjamin Kagan, a first-year fellow at NIDDK, is excited about the opportunity the PRAT program provides to network with other pharmacology Ph.D.s.

of career options. At the monthly seminar series, guests invited by the fellows present diverse career options open to pharmacologists.

Through these seminars, "PRAT confirmed what I want to do professionally," says Dr. Kristi Egland, a second-year fellow. For her, that is doing research and teaching in academia. "We had a seminar by [an] editor of PNAS. Not for a minute did I want to do that job, but knowing what other people do helps you be better at your job," which includes communicating with those in related professions. "People in all these fields interact—people in academia interact with those in industry through clinical trials. And," she adds with the pragmatic twist typical of PRATs, "they might also help pay for your research."

Dr. Erik Snapp, who just graduated from the program, was impressed at how practical the career seminars are. "People from search committees come in and tell us what they're looking for, like how to interview for a job in biotechnology versus at a university, and how to write your CV" so that it is customized for the type of position you're interested in.

He says the careers that have been represented include not only academia and biotechnology, but also patent law, science education and grants administration.

"We've had a number of speakers who were former PRATs who have gone on to be successful in their careers. It's quite inspiring. It held out the hope that we might have a bright future." If history is any measure, this hope is not misplaced. ■



According to Dr. Kate Prybylowski, a second-year fellow at NIDCD, "The PRAT program lets you see the best of what you'd get in academic research."

PHOTOS: ERNIE BRANSON, ALISA ZAPP MACHALEK

Applications Due Soon for Next Class of PRATs

The deadline for applications to the NIGMS Pharmacology Research Associate (PRAT) program is Jan. 3, 2003, for positions starting in October 2003. PRAT fellows receive competitive salaries as well as supply and travel funds to support research in their preceptors' laboratories. Candidates apply in conjunction with an identified preceptor, who may be any tenured or tenure-track scientist at NIH or FDA. For more information or application materials, contact the PRAT program assistant at 594-3583 or prat@nigms.nih.gov.

A sister program called Clinical Pharmacology PRAT and nicknamed ClinPRAT was launched 4 years ago and is open to individuals with M.D. degrees. It is designed to create a cadre of scientists in the clinical development, evaluation and therapeutic use of small molecule- and biotechnology-based pharmacotherapy. For more information on this program, contact Dr. Art Atkinson at 435-8791 or aatkinson@mail.cc.nih.gov or visit the ClinPRAT web site at <http://www.cc.nih.gov/OD/clinprat/>.

NINDS Celebrates the Research Accomplishments of Roscoe Brady

By Shannon E. Garnett

NINDS recently sponsored a scientific symposium honoring the research career—spanning five decades—of Dr. Roscoe O. Brady, chief of the Developmental and Metabolic Neurology Branch, NINDS. The 2-day symposium, which gathered top scientists to discuss the past accomplishments and future directions of hereditary metabolic disorder research, celebrated the remarkable progress that has



Dr. Roscoe O. Brady

been made in understanding and devising therapies for these disorders and recognized Brady for his leadership.

For nearly 50 years, Brady and his team have conducted pioneering research on hereditary metabolic storage diseases (also called lipid or lysosomal storage disorders) such as Gaucher, Niemann-Pick, Fabry and Tay-Sachs—defining much of what is known of their biochemis-

try, enzymatic bases and metabolic defects. His research has stimulated colleagues throughout the world to define the causes of many other related disorders and inspired investigations in this field.

Brady attended Pennsylvania State University, and received his medical degree from Harvard Medical School. He joined NIH in 1954 as chief of the section on lipid chemistry in the Laboratory of Neurochemistry, NINDB (now NINDS).

"There are very few people who have been at NIH as long as I have, but Ros preceded me by 2 years," said NIH deputy director Dr. Ruth Kirschstein in opening remarks.

Brady and his research team have developed methods to detect carriers of hereditary metabolic storage disorders, methods for the prenatal detection of these disorders and guidelines on providing genetic counseling to at-risk families. In 1991, his team established the first effective treatment—enzyme replacement therapy—for Gaucher disease. By taking their discoveries from bench to bedside, Brady and his team have brought enormous relief to patients—who without treatment suffer from a wide range of symptoms including severe anemia and painful skeletal deformities—and solace to families.

The symposium was rich with science. Speakers, many of whom called themselves Brady protégés, presented on such topics as "Gaucher's Disease: A Saga of Mice and Men," "Advances in Hereditary Spastic Paraplegia" and "Development of Gene Therapy for Hematopoietic Stem Cells." Other presentations traced the histories of Fabry disease, Niemann-Pick disease, Batten disease (neuronal

ceroid lipofuscinosis), Rett syndrome, and Tay-Sachs disease, bringing the audience up to date on what is known about the disorders, new findings and potential cures.

Although many commented on Brady's research leadership and his impact on their work, several others—including Randy Yudenfriend, president of the Mucopolysaccharidosis IV Foundation, and Abbey Meyers, president of the National Organization for Rare Disorders (NORD)—focused on his clinical side, describing how he has touched and changed the lives of his patients. NORD recently established the Roscoe O. Brady Investigator Fellowship Program, which supports research on lipid storage disorders. In addition, impromptu remarks were made by one of Brady's former patients, who traveled from Germany for the program and thanked him for his research saying, "You have made a difference in my life."

Of special note was a presentation by former NINDS director Dr. Zach Hall titled "Roscoe Brady: A Scientist for All Seasons." Now senior associate dean of the Keck School of Medicine at the University of Southern California, Hall began by asking, "How can I summarize, in a few minutes, a career that has been so rich in accomplishments?" He then briefly outlined the six stages of Brady—chemist, classical biochemist, enzymologist, cell biologist, clinical researcher and gene therapist—which he likened to Shakespeare's Seven Stages of Man.

"You might have noticed that Shakespeare had seven stages of man, while I only have six," said Hall. "Well, we're still waiting for the seventh stage of Roscoe Brady."

At the end of the meeting, NINDS acting director Dr. Audrey Penn read a special congratulatory letter from President George W. Bush, and presented Brady with a portfolio containing a sketch of Brady signed by his friends and colleagues and a bookcase containing bound volumes of all of his work to date. NIDDK scientist emeritus and long-time colleague Dr. Peter Pentchev then turned to Brady and noted that there is room in the bookcase for more volumes "so you still have a lot of work ahead of you."

Currently Brady's team is examining enzyme replacement therapy and gene therapy for patients with other hereditary metabolic disorders. ■



Dr. Ruth Kirschstein (c) and Dr. Katherine Bick (l) chat with Brady at the scientific symposium given in his honor. Brady was also presented with a proclamation from the Montgomery County Executive's office naming Oct. 8, 2002, as Roscoe Owen Brady Day in recognition of his outstanding achievements.

PHOTOS: BILL BRANSON



Dr. Peter Pentchev (l) and Dr. Audrey Penn present Brady (c) with a commemorative portfolio containing a sketch signed by his friends and colleagues.

NLM Visitors Center Closed For Repair

The NLM Visitors Center closed for remodeling on Dec. 2. The work is expected to end no later than Mar. 7, 2003. The new and improved Visitors Center will be larger and will feature new interactive displays highlighting NLM programs and services. Throughout the construction, the library will continue to offer abbreviated tours, originating in the first floor lobby of Bldg. 38A, the Lister Hill Center, weekdays (except federal holidays) at 1:30 p.m. The center will also try to accommodate special tour groups. For more information, contact Melanie Modlin at 496-7771 or mm354i@nih.gov. Note that there will be no 1:30 tours of the library Dec. 24 through Jan. 1, 2003.

HEALTH LITERACY, CONTINUED FROM PAGE 1

to make decisions based on that information, whether it's following the directions on a bottle of Tylenol or learning on a health web site how to keep one's cholesterol in check. And one strong measure of a person's health literacy is his or her ability to read in general. If someone struggles to read a sign or bus schedule, for example, how can she or he be expected to read and accurately interpret directions for taking a prescription medication?

Schillinger pointed out that literacy is not a matter of "are you or aren't you able to read?" There are degrees. According to the 1993 National Adult Literacy Survey, 10 to 22 percent of Americans are at the lowest level of literacy, meaning that they are unable to read a medicine bottle or poison warning. Another 18 to 26 percent are considered functionally illiterate, meaning that they have trouble filling out forms for a job application. The survey also found that, on average, the reading level in the United States is somewhere between the eighth and ninth grades, while the average reading level of Medicaid recipients is significantly lower—at the fifth grade.

Low literacy is a symptom of a number of underlying factors, according to Schillinger. And it is not a lifelong constant. One surprising finding is that older adults who may have had fine reading, writing and thinking skills in younger days may have difficulty as they age with reading and understanding information. Vision problems, poverty, learning disabilities, immigration and minority status, and poor education also can contribute to low literacy. Two-thirds of people ages 65 and older have poor literacy skills, while 25 percent of immigrants have poor literacy.

Low health literacy can be tied to three big negatives in the health care arena, said Schillinger. First, health care costs are generally higher for patients with low literacy. A 1992 study at the University of Arizona, Tucson, found that health care costs for patients enrolled in Medicare who were identified with low health-literacy skills were more than four times as high as costs for patients with high literacy—roughly \$13,000 per year compared to \$3,000 per year. Second, a patient's own health assessment is usually gloomier if he or she is challenged by low literacy. In a study conducted in Atlanta and in Torrance, Calif., patients who had low health literacy were more likely to report their health as poor compared with patients who had adequate literacy.

And third, patients with low health literacy tend to be less successful in managing chronic disease.

In a study on the effects of health literacy on blood-sugar control in Type II diabetics, Schillinger and his colleagues at San Francisco General found that patients with high literacy were more likely to have lower long-term blood-sugar concentrations—

what all diabetics should strive for—while those with low literacy were more likely to have higher levels of glucose in the blood, or worse blood-sugar control. Complications associated with diabetes also increased as literacy decreased. Patients with low literacy developed retinopathy more than twice as often as people with high literacy did, despite the fact that patients with known vision problems were excluded from the study. Retinopathy is a condition that damages the eye's retina, the sensory membrane that lines the eye, and can cause blindness.



Low literacy also *Schillinger says low literacy may contribute to health disparities.*

contribute to health disparities. Women, minorities and older people were much more likely than others in the study to experience problems, the researchers found, with women twice as likely, and seniors five times as likely, to have poor blood-sugar control.

Schillinger describes the current health care system as being designed to meet the needs of only the most literate. This, he said, must be changed if we are going to reduce disparities. "In our society, while money may be power, literacy really is power," he said. "Literacy is the ability to advocate for oneself in a highly competitive health care system."

People who do not have basic literacy skills usually have limited access to health information, and their understanding about health-related matters is generally poor to begin with. They also may have trouble comprehending written health information. In one nationwide study, researchers at Louisiana State University, Shreveport, found that the reading levels of materials given to patients were 5 to 7 years beyond the patients' ability to read them.

And health communicators take note: 100 percent of health-related web sites written in English, and 86 percent of Spanish health sites, were found to be written at the twelfth-grade reading level—despite the adult literacy survey's finding that the average Medicaid recipient reads at the fifth-grade level.

Schillinger contends that literacy not only affects how well a patient understands a prescription label, brochure or web page, but it also may influence how well a patient grasps what a doctor is saying in a

typical one-on-one conversation. In a study on diabetes patients, he and researchers at San Francisco General found that 32 percent of the patients said that their doctor often uses words that they don't understand. These words are not necessarily medical jargon, but may be everyday words used in special ways or common words that are simply beyond the experience of the patients. Additionally, more than one-fourth of patients said that their doctor gave them test results without providing an explanation.

"And these doctors are working in a public hospital because they really want to work in a public hospital," said Schillinger. "Their mission is to take care of vulnerable patients. So this is, in many ways, a best-case scenario."

Despite the discouraging numbers, Schillinger sees a way out. He described a communication method he and colleagues have developed called "closing the loop," which is based on the "teach-back" method used in education. Each time the doctor introduces a new health concept to the patient, such as "Take this pill twice a day to help thin your blood," the doctor asks the patient to repeat the message in his or her own words. If the patient gets it right, great. He is more likely to remember the message, having said it himself. If the patient gets it wrong, the doctor has a chance to review the information until the patient does understand. And with understanding comes adherence.

Schillinger and others have assessed how frequently doctors at San Francisco General practice the feedback loop, as well as the loop's effectiveness in helping diabetic patients maintain blood-sugar control. The results will be published in the January 2003 issue of *Archives of Internal Medicine*.

Among strategies Schillinger is testing is the use of weekly phone messages, designed by patients for patients, and group visits in which patients with the same illness meet with a doctor and health educator to discuss questions they may have, common problems and possible solutions to those problems.

"In the U.S., we've all known that education is related to health, but we felt that it was an immutable characteristic of a population, and not something that can be changed," concluded Schillinger. But what's so compelling about literacy, he said, is that it can be changed, and the impact can be great, particularly during the clinical encounter between patient and doctor. ■

Herpes Study Recruits

If you have genital herpes, doctors at NIH invite you to take part in a study to learn more about the Epstein-Barr virus, part of the herpes virus family. For more information call 1-800-411-1222 (TTY 1-866-411-1010) or email prpl@cc.nih.gov. ■

Genetic Differences Found in Lupus Families

After 10 years of collecting genetic information on families with the autoimmune disease systemic lupus erythematosus (lupus), researchers funded by NIAMS have found different genetic regions linked to lupus in African Americans and European Americans. This genetic linkage study may one day help to explain why more African Americans die of lupus and develop more serious complications such as nephritis (kidney failure) compared with people of European descent.

After analyzing the DNA from more than 250 African American and European American pedigrees, Dr. John Harley and his colleagues at the Oklahoma Medical Research Foundation identified a region of chromosome 1 (1q21-22 near FcyRIIA) associated with the development of lupus in African American families. They also identified two regions of chromosome 11 associated with lupus in subsets of the African American families. In European American families, they found a genetic linkage near the top of chromosome 4 (at 4p16-15) that contributes to lupus. These results suggest that the genetic origins of lupus may differ in African Americans and European Americans.

Lupus, a rheumatic disease that mainly affects women of child-bearing age, can lead to severe organ damage, and is three times more common in African American women than in Caucasian women. In the United States, as many as one in every 250 African American women develops lupus. By identifying the specific genes that may predispose African Americans to developing lupus, researchers move a step closer to understanding and better treating this puzzling and difficult disease in the African American population. ■

NICHD director Dr. Duane Alexander recently received the American Academy of Pediatrics' Arnold J. Capute award, given to pediatricians who contribute to the



health and well being of children with disabilities through service and/or advocacy at the local, state or national level. Under Alexander's leadership, the institute's program in mental retardation and developmental disabilities research fostered numerous research advances, including the discovery of genes for Rett syndrome and fragile X syndrome. He also helped found the research journal, *Mental Retardation and*

Developmental Disabilities Research Reviews. Alexander served as a pediatric resident under Capute at Johns Hopkins School of Medicine.



Tyrrell Flawn recently joined the Children's Inn at NIH as executive director. She comes from Austin, Tex., where she was the first non-family executive director of the RGK Foundation. Previously she was executive director of volunteer services and the children's art project at M.D. Anderson Cancer Center. "I am pleased to be the newest member of the Children's Inn family," she said. "It's an exciting time at the inn. With new pediatric research at NIH, an expansion in progress, and a committed, ever-growing team of volunteers, NIH friends and community supporters, the future looks bright and full of promise for all of us here at the Children's Inn." ■

Learn About Next Steps for CRIS, Dec. 18

The next steps for NIH's Clinical Research Information System (CRIS) will be discussed by Dr. Stephen Rosenfeld, CRIS project manager and chief of the Clinical Center's department of clinical research informatics, during CC Grand Rounds on Wednesday, Dec. 18 at noon in Masur Auditorium, Bldg. 10. CRIS is a \$60 million project that will link and support patient care, research and management at the CC and at the future Clinical Research Center. A contract to build the largest component of CRIS was awarded recently to Eclipsys Corp., which will develop and implement CRIS components that comprise patient-care aspects of clinical research. Included in this core system is the electronic medical record, which houses such information as lab results, pharmacy orders and multidisciplinary care documentation. More information about CRIS can be found online at <http://cris.cc.nih.gov>.

Online Computer Security Awareness Course

Technology is great—until something goes wrong and you can't use your computer or access the vital information stored on it. With our "I want it now" mindset, we are quick to start using the latest, greatest gadgetry and software, but forever seem to play a game of catch-up trying to cover all the security concerns. It's time to start changing that.

How exciting—a new mandatory computer security awareness course that all users of NIH computer resources must take prior to Mar. 30! Before you take a big sigh, there are lots of good reasons why the requirement is in both NIH's and your best interest. Aside from being required by law (Government Information Security Reform Act, among others), secure IT resources underlie the NIH mission. In addition, you would be amazed at how many people lack the most basic understanding of—let alone practice—common-sense IT security. While hacker attacks via the Internet are worse than ever, there are still people using outdated anti-virus software, unpatched, vulnerable systems, poor or no password protection, and portable devices (laptop computers, Blackberries, Palm Pilots and other personal digital assistants, and wireless technologies) lacking sufficient protection.

The new online training is located at <http://irtsectraining.nih.gov/>. NIH users must submit login information for tracking purposes. The training course consists of seven modules and requires approximately 30-40 minutes to complete—depending on how many links you visit. It contains lots of useful information, is easy to navigate and can be used as a resource. When you've completed the course, you'll have a better understanding of the NIH IT security program, your IT responsibilities and where to get assistance. More importantly, you will become aware of easily adoptable practices that help ensure a safe computing environment in the office, at home and while traveling.

Remember, your security is affected by everyone who shares a network connection with your computer, everyone who can enter your office space, anyone who knows or can easily guess your password, and anything you leave behind unlocked (including what's in your trash can). Take the course and change your perceptions; security is everyone's responsibility. If you have questions about the training, contact your institute or center information systems security officer (ISSO). The ISSO contact list is located at <http://irm.cit.nih.gov/nihsecurity/scroster.html>.—Cheryl Ann Seaman, Kevin Haney

Chronic Granulomatous Disease (CGD)?

Doctors at NIH invite you to take part in a treatment study for CGD. For more information call 1-800-411-1222 (TTY 1-866-411-1010) or email prpl@cc.nih.gov.

Faulty Gene Key to Understanding DM

After much mystery, researchers funded by NIAMS have succeeded in linking the gene defect in myotonic dystrophy (DM) to its biological malfunction. Their findings emphasize how misreading of a gene can lead to improper conduction of electrical impulses in skeletal muscle.

Two different studies were completed. Dr. Thomas A. Cooper and his team of scientists at Baylor College of Medicine in Texas examined tissue samples from skeletal muscle in patients with myotonic dystrophy. The results revealed that extra genetic material caused by the defect in the DNA sequence affects the chloride channels that control muscle relaxation.

In New York, at the University of Rochester, Dr. Charles A. Thornton and his colleagues measured electrochemical muscle impulses in a mouse model of the disease. The results indicated that the genetic defect affects the conductance of electrical signals, resulting in delayed muscle control. People with DM have the normal gene with additional information that interferes with the translation of proteins. While further study still needs to be done, these findings are a key step in understanding the causes of muscular dystrophies.

Myotonic dystrophy belongs to a group of genetic diseases called muscular dystrophies characterized by progressive weakness and degeneration of the skeletal or voluntary muscles that control movement. Tens of thousands of people in the United States are affected. An early sign of DM is delayed skeletal muscle relaxation following voluntary contraction.

NIEHS' James Huff received the American Public Health Association's David P. Rall award for Public Health Advocacy on Nov. 10. He established the levels of evidence of carcinogenicity used by the National

Toxicology Program to evaluate results of carcinogenesis studies that are still used in the bioassay technical reports. He has fiercely defended those standards, used to protect public health, and has fought the profit-driven pharmaceutical industry for some 30 years. APHA executive director Dr. Mohammad Akhter cited Huff's outstanding record of accomplishments in the application of scientific research to public health policy. "The awards



committee acknowledged your wealth of knowledge and experience in chemical carcinogenesis and toxicology ...that have guided our nation's efforts at public health protection for more than 20 years," Akhter said. Huff, a toxicologist, has more than 300 published scientific papers. While with NTP, he wrote or led the preparation or evaluation of more than 200 carcinogenesis bioassay technical reports.

NIH Convenes Hormone Therapy Conference

Long-term use of the estrogen plus progestin combination—one of the most commonly prescribed hormone regimens—does not prevent cardiovascular diseases and other chronic conditions



Dr. L. Natalie Carroll, president of the National Medical Association, speaks during the discussion on implications for research.

in postmenopausal women. In fact, the risks (increased breast cancer, heart attacks, strokes and blood clots in the lungs and legs) outweigh the benefits (fewer hip fractures and colon cancers). This was the finding of a recent NIH scientific workshop on Menopausal Hormone Therapy, which

featured the world's leading experts on the subject.

The purpose was to review results from one component of the Women's Health Initiative (WHI) clinical trial—an NIH study that was halted in May 2002 due to an increased risk of invasive breast cancer and cardiovascular disease—and place these results in the context of other completed and ongoing research on menopausal combination hormone therapy.

The goal of the meeting was to assess what researchers know about the use of menopausal hormone therapy, particularly as a preventive agent, and decide what questions still need to be addressed through further research.

"There is not a simple, single answer for all women," said Dr. Elias Zerhouni, NIH director.

"However, the WHI results do help simplify and clarify—not complicate—the decision-making

process. Women now have information from a randomized clinical trial—the gold standard for evidence-based medicine. Combined hormone therapy should no longer be considered the effective prevention strategy against chronic diseases."

Women who are considering whether to start or continue hormone therapy to relieve menopausal symptoms need to consider the findings from this and other studies, and discuss with their health care provider their individual risk for specific chronic conditions and their personal preferences. The workshop, which was attended by nearly 800 people, may be viewed online at <http://videocast.nih.gov/PastEvents.asp?c=1>.

For more information on hormone therapy, go to the NIH menopausal hormone page at <http://www.nih.gov/PHTindex.htm>.—Ellyn Pollack ■



Former NIH director Dr. Bernadine Healy established the Women's Health Initiative in 1991. NIH director Dr. Elias Zerhouni opened and closed the workshop.

PHOTOS: ERNIE BRANSON



HHS Secretary Tommy Thompson addresses the audience on day two of the scientific workshop.



Dr. Marcia L. Stefanick (l) of Stanford University and Dr. Marian C. Limacher of the University of Florida College of Medicine participate in a panel discussion of the WHI data.

New Roles Found for Cytokines

Type 1 interferons, among the first of many cell communication mediators now called cytokines, were discovered some 50 years ago. Scientists at the National Institute of Arthritis and Musculoskeletal and Skin Diseases and Brown University have found a new way that they help the body fight infection and regulate immune responses.

Dr. John O'Shea of NIAMS' Molecular Immunology and Inflammation Branch, along with his NIAMS and Brown University colleagues, have found that the Type 1 interferons IFN- α and IFN- β —already well-known for their direct therapeutic effects against virus infections—also stimulate production of the infection-fighting type 2 interferon, IFN- γ . To accomplish this, say the investigators, IFN- α and IFN- β activate an intermediary signaling protein called STAT4, which binds the IFN- γ proximal promoter and is needed to produce the Type 2 interferon. The work, done in a mouse model of viral infection, shows that Type 1 IFN and STAT4 are critical for IFN- γ production, which is critical for host response against pathogens.

This insight into a new pathway for cytokine regulation through cellular signaling might eventually help scientists manipulate cytokine activity to therapeutic advantage.

"Even though the Type 1 interferons have been the most widely used cytokines clinically, there has been much about them that we haven't understood," said O'Shea. "We're excited about the new trick that these 'old dog' cytokines have taught us." ■



Dr. N. Kent Peters recently joined NIGMS as a scientific review administrator in the Office of Scientific Review. His responsibilities include managing the review of selected training, program project, center, and Minority Biomedical Research Support program grant applications, as well as contract proposals. He was formerly a program director for metabolic biochemistry at the National Science Foundation. Before that, he was a professor in the department of chemistry and biotechnology at the Agricultural University of Norway. Peters earned a B.A. degree in biological sciences from Indiana University and a Ph.D. in cellular and molecular biology from the University of Michigan. He conducted postdoctoral research at Stanford University.

GENDER, CONTINUED FROM PAGE 1

challenged her colleagues to answer a fundamental question: Is women's health relevant to the general health of everybody or should it be isolated emotionally, scientifically and geographically in women's health centers, in offices of women's health or in pockets of interest in women's health?

As Legato proceeded to outline, the query wasn't necessarily a criticism of women's health efforts to date, nor was it strictly rhetorical. Examine the emphasis placed on women's health in the past two decades, she urged, and determine whether much of the focus may have been put on a still-too-limited view of female biology.

"What does women's health really mean?"

Legato asked the Wilson Hall audience. "Does it go beyond the 'bikini view,' that is, breast

health and reproductive biology? [I know] many physicians in the real world outside of this academic campus and my own academic island. I can tell you that the bikini view is the view most practicing physicians have of women."

Legato began by stressing the difference between the terms sex and gender. "Imprinting and hormonal factors determine the developmental sequence and characteristics of biological systems, or sex, of the individual," she said. "Gender is the result of implanting an individual into a culture or society, which assigns them relative value and gives them specific roles to play by virtue of their biological sex. These factors are important determinants of health that affect the quality and function of biological systems."

That culture and society have played nearly as vital a role as science and medicine in carving out a niche for women's health may be evidenced by the proliferation of so-called bikini-view medical centers around the nation, she said.

"I can tell you that women's health centers are one of the most powerful marketing tools of the last decade of the 20th century and the early part of the 21st century," Legato pointed out. "Whether women's health is a scientific imperative is another and different question."

Citing a 2001 Institute of Medicine (IOM) monograph that concluded, "Sex does matter. It matters in ways that we did not expect. Undoubtedly, it also matters in ways that we have not begun to imagine," Legato said gender-specific research—"not a synonym for women's health research," she stressed—has revealed as yet only the tip of a very large iceberg.

"We never imagined the scope and significance of the differences between men and women in all the systems of the body," she noted. "The IOM monograph illustrates so nicely why being male or female

is not simply a question of hormones and begins before hormonal impact is even felt."

Legato then pointed out a number of critical differences or potential differences between male and female biology that deserve further study. Beginning with genetics, for example, she noted that Y-chromosome-linked DNA contains genes involved in basic cellular functions and that in the female, one of the two X chromosomes is randomly silenced in a process called lyonization. (Two of the 46 human chromosomes—the X and the Y chromosome—determine sex. Females have two X chromosomes

"What does women's health really mean? Does it go beyond the 'bikini view,' that is, breast health and reproductive biology? I can tell you that the bikini view is the view most practicing physicians have of women."

and males have one X and one Y chromosome.)

Bones also vary between the sexes in possibly important ways, according to Legato. Distinct age-peaking for bone mass in women—usually by the early 20s—can be documented; in men, maximum bone density is achieved much more gradually and plateaus later, by age 30. A period of accelerated bone loss occurs in women at menopause and continues for about 5 years afterwards. "What is not clear is whether the bone loss is related only to estrogen deficiency," Legato said, explaining yet another indication for gender-specific research. "Counseling therefore could differ [for men and women] on how and when to adjust lifestyle to achieve and preserve maximum bone density."

In addition, the cardiovascular system—from the size, shape and electrical system of the heart to the protein channels and receptors of the cardiac cell membrane—is different in some respects in the sexes. Women have faster heart rates than men. These differences may prove to be crucial considerations for preventing, diagnosing and treating heart disease, the nation's top killer of both sexes, she said.

Legato also offered brief highlights on the roots of research on women's health. In 1900 the average life expectancy for a woman was 48. Menopause and diseases of aging were not a priority. "As you can imagine," she said, "the focus was on maternal survival in childbirth, survival of infants and small children, infectious disease and conditions that arose from poor public sanitation."

Legato said it was "inevitable that the parallel phenomena of feminism and the explosion of American science and technology would both grow out of World War II. The rumblings certainly began after WWII, but the preeminence of women's health has only been accomplished since 1985—the date of the Public Health Service's first formal statement

that we knew nothing about women's health directly. It's a short history, a powerful history and a very recent history."

Legato said she includes the history lesson in her lectures for those "who think that women haven't been studied directly simply because men have all the power and they don't like or care about women. That's simply nonsense. The current concern about women's participation in clinical studies arises from two very well-entrenched—and diametrically opposed—public policy positions: protectionism of women and access to the benefits of participation in clinical investigation."

Protectionism, she explained, was a reaction to the atrocities to vulnerable populations such as prisoners, women and children that were uncovered at the Nuremberg trial in 1947. More than 30 years later, the Belmont report of 1979 advocated justice in clinical investigation. A statement of basic principles by the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research addressed the ethical problems surrounding the conduct of research with human subjects. The report said that if women were to reap the benefits of research, then as a matter of justice they would have to take the risks of participating as subjects in clinical investigation.

A 1994 IOM monograph, *Women and Health Research: Legal and Ethical Issues of Including Women in Clinical Studies* concurred "that women and men should have the opportunity to participate equally in the benefits and burdens of research."

Legato said the IOM document was pivotal, and its conclusions perhaps somewhat humbling for biomedical scientists. "There is no question that this was the first thoughtful reflection on the possibility that men and women might experience disease differently," she explained. "It also acknowledged the very important point that scientists had made the assumption—without confirmatory testing—that what we learn from studying men could be extrapolated to women without modification. I still find that—as an NIH-supported, traditionally trained investigator—the most mind-boggling part of our approach to women's health. We never questioned the fact that every one of us was selecting males at all levels—from tissue culture to humans—to do medical investigation and making the leap that the data could be extrapolated to women without modification."

Acknowledging the host of unanswered questions that would be prompted by increasing gender-specific studies, Legato urged discourse instead of dismissal: "This is something that I think needs significant debate at the NIH and in a public forum right now. There are still very important ethical, moral and economic issues in studying the premenopausal woman and we haven't even debated these in a formal way, much less developed any solutions for

them."

Legato said the IOM monograph forecast in a blunt assessment where a limited view of the field could lead: "Our moral analysis of our practices considering the inclusion of women in clinical research will fail to capture all that it should, if we restrict our focus to the charge of exclusion and underrepresentation."

Legato concluded that for many in the science community—even among some women's health advocates—the sea change for gender-specific research must begin with a much broader attitude, a multidisciplinary approach and a look at women across their entire lifespan. "We have to move from 'We don't want to be victims anymore' to 'We have an irresistible offer to make to the general public: to study us is to reap a rich harvest indeed,'" she said. "Outcome studies are essential if we are to justify and maximize a continuing interest and investment in women's health. Women have to be studied firsthand if we're really going to have reliable information." ■



Responding to the need to advance clinical research, the Center for Scientific Review has recruited Dr. Theodore Kotchen to be its special advisor on clinical research review. "Dr. Kotchen has impressive credentials, and he is deeply committed to helping us achieve fair and high quality reviews for clinical research applications," said

Dr. Ellie Ehrenfeld, CSR director. "We are pleased that he has accepted this challenging position." He will serve as a liaison with the external clinical research communities, providing information and gathering feedback on CSR's reorganization activities. In addition, he will examine CSR's practices and suggest new approaches to enhance the review of patient-oriented proposals. He will serve part-time and maintain his research and academic efforts at the Medical College of Wisconsin, where he is professor of medicine and epidemiology and associate dean for clinical research. Kotchen has been an NIH grantee for many years, studying hypertension control in the laboratory and the clinic, linking population-based studies with physiologic and genetic studies.

Lecture on Prolactin, Breast Cancer

The women's health special interest group will present a talk by NCI's Dr. Barbara Vonderhaar on Friday, Dec. 20 from 11:30 a.m. to 1 p.m. in Wilson Hall, Bldg. 1. Her topic is "Prolactin in Breast Development and Cancer." Vonderhaar is acting chief, Mammary Biology and Tumorigenesis Laboratory and chair, breast cancer faculty, Center for Cancer Research. There will be refreshments and discussion after the lecture. ■

Obsessive-Compulsive Disorder (OCD) Studies

Doctors at NIH are conducting studies to learn more about OCD. Participants must be between ages 18 and 60. Participants will be compensated and receive a free psychiatric evaluation. Call 1-800-411-1222 (TTY 1-866-411-1010) or email prpl@cc.nih.gov.

Limits of Personal Use of Information Technology

If someone said you could use your NIH computer, email, phone, printer, copying machine, etc., for “non-government” business—in other words, for your own personal use—would you believe it? It might surprise you to learn that NIH has a policy that permits personal use, provided that use remains within certain limits. You might want to review “Limited Authorized Personal Use of NIH Information Technology (IT) Resources” on the web at <http://www1.od.nih.gov/oma/manualchapters/management/2806/>.

The policy recognizes NIH staff as responsible individuals who deserve a professional, supportive work environment. Allowing some personal use is considered to enhance the quality of the workplace, thus helping to retain skilled, qualified staff. However, before you start thinking about running a private business venture out of your NIH office, spend some time reviewing the definitions and “qualifiers” attached to using government-owned IT resources. Why? Because overstepping the permissible boundaries of use can lead to loss of use privileges or even disciplinary actions (e.g., reprimand, suspension or criminal prosecution, if appropriate).

In general, personal use is allowed if the use:

- Is incidental with minimal cost to the government and does not interfere with staff productivity, the NIH mission or operations.
- Is not used to misrepresent oneself or NIH and has no potential for public embarrassment to NIH.

Vine Root Relieves Rheumatoid Arthritis

The roots of Thunder God Vine, a plant whose leaves and flowers are highly toxic, have been used medicinally in China for over 400 years. A root extract of this plant was shown to safely and effectively reduce pain and inflammation in a small group of people with treatment-resistant rheumatoid arthritis, according to a study funded by NIAMS. The randomized, double-blind, placebo-controlled trial, published in a recent issue of *Arthritis & Rheumatism*, is the first to test the use of an extract of this vine in rheumatoid arthritis patients in the United States.



Dr. Peter Lipsky in his autoimmunity lab at the Clinical Center

Twenty-one rheumatoid arthritis patients completed a 20-week clinical trial of the ethanol/ethyl acetate extract. Patients were randomly assigned to one of three treatment groups: placebo, low-dose extract or high-dose extract. After 4 weeks, 80 percent of patients in the high-dose group and 40 percent in the low-dose group

● Does not compromise NIH systems or security safeguards (no modifying equipment, loading software or making configuration changes without pre-approval).

● Is performed on non-government time (e.g., during lunch).

● Does not violate the DHHS Standards of Ethical Conduct, or any other federal laws or NIH policies.

Examples of acceptable personal use include researching educational institutions, checking on personal investments, seeking employment and communicating with a volunteer charity organization. Examples of unacceptable personal use include visiting sexually explicit or offensive Internet sites, using IT resources to support for-profit businesses, violating copyrights or software licensing agreements by installing, downloading or copying (in whole or in part) copyrighted materials in any format, and downloading large video, sound or other files that use large amounts of network resources. To further strengthen NIH's implementation of the policy and ensure legal and regulatory compliance, user access to prohibited web sites will be blocked by the end of 2002.

In summary, you can use IT resources for personal reasons; however, be careful that the use is within the boundaries of this policy. If, after reviewing the policy, you still have questions about what might be considered “authorized” use, consult your supervisor. —Cheryl Seaman, Judy Blair ■

showed rapid improvement in symptoms compared with no improvement in the placebo group. Side effects were minor for all three treatment groups. Longer term studies with larger numbers of patients are needed to confirm the safety and benefits of the treatment.

According to senior author Dr. Peter Lipsky, scientific director of NIAMS, the extract is a particularly promising treatment for rheumatoid arthritis. It is unique because it slows down the overactive immune system, reduces inflammation by turning off inflammatory genes such as tumor necrosis factor alpha, and reduces the activity of B and T cells.

Lipsky believes the plant extract has the potential to treat other immune diseases such as lupus, and is planning further studies. The extraction process, although time-consuming, is critical because it transforms the otherwise toxic and deadly Thunder God Vine into a therapeutic treatment.

Rheumatoid arthritis, a chronic inflammatory disease of the joint lining, often results in pain, stiffness, swelling and loss of joint function. It occurs two to three times more often in women than in men. ■

Insights on Maintaining Cognitive Health

By Sophia Glezos Voit

Two NIH scientists recently discussed research on how cognitive health or “brain fitness” can last a lifetime.

Speaking at an NIMH-sponsored Seminar Café at the Neuroscience Center in Rockville, researchers Dr. Bruce Cuthbert, an NIMH emotion psychophysicologist, and Dr. Molly Wagster, a behavioral neuroscientist at NIA, underscored the message that memory loss, dementia and aging don’t have to go hand in hand.

“There are things we can do to gain or maintain proper cognitive function as we age,” Wagster said, “and it’s not eating potato chips, watching TV or taking some magic pill.”

Wagster, the NIA program director for research on the neuropsychology of aging, prefaced her discussion by describing normal cognitive changes as time marches on. These include slower rates of learning and remembering new information; less efficient working memory (or information needed for a short time, such as parking location after shopping); declines in language ability (e.g., correct spelling); sluggish retrieval of nouns; and increased difficulty performing several tasks at once (such as talking on the phone and working on the computer).

The bad news, she said, is that the changes begin in our 20s; the good news is they’re subtle as each decade passes and don’t interfere with normal functioning, irritating though they may be. Also, where we decelerate in some areas, research shows we advance in others, particularly in world knowledge or wisdom, she said.

An example of the difference between these normal age-related cognitive changes, Wagster explained, and the symptoms of Alzheimer’s disease is that normal aging enables us ultimately to retrieve the right word or name, whereas impairments from dementing neurodegenerative disease almost fully prevent a person from ever pulling up the information, she said. People with AD “usually forget they ever wanted to remember it in the first place.”

Some rare forms of dementia have a genetic basis, Wagster said, and there are genetic risk factors that may increase a person’s likelihood of developing dementia. But new research shows there also may be ways to influence how we age cognitively. Studies she discussed included the cognitive benefits of aerobic exercise, e.g., walking at a moderate pace 2-3 times weekly; and, based on animal research, a diet rich in antioxidants (in particular, blueberries,

spinach and strawberries) and enriched living environments.

Although the effects of enriched environments (e.g., challenging toys, others to interact with, etc.) have thus far only been explicitly demonstrated in rodents and to a lesser extent in non-human



Dr. Molly Wagster

primates, scientists assume that similar effects occur in humans as well, said Cuthbert, chief of the NIMH Adult Psychopathology & Prevention Research Branch. “A similar complex environment for humans,” he said, “may be in the form of plentiful sources of mental stimulation and rich social relationships.” Somehow, these experiences enhance the brain’s capacity to form new cells, a process called neurogenesis, as well as new connections between cells.

While scientists thought this was impossible just a few years ago, Cuthbert said, research now shows “the brain is constantly re-making itself.” Researchers are “energetically testing the hypothesis that neurogenesis helps to maintain the brain’s ability to learn new information and preserve cognitive functioning as we age.”

But stress affects neurogenesis adversely, Cuthbert added. It even destroys brain cells we already have, and compromises the immune system’s ability to fight invading pathogens or heal wounds, which can indirectly affect cognitive function.

However, there are stress buffers that people can adopt, Cuthbert said. These include developing healthy social networks and simply getting a good night’s sleep on a daily basis.

“In our culture, it’s popular to get by on 4 or 5 hours of sleep a night and drink lots of coffee and be a power person,” Cuthbert said. “But the need for 8 hours of sleep is increasingly becoming more evident. In fact, it appears we may need 8¹/₄ to 8¹/₂ hours.”

Skimping on just one night’s sleep, he said, can result in impaired memory and concentration the next day. Coffee may temporarily sharpen those skills, but a short nap is the better antidote. Better still is adherence to good sleep habits.

Research also shows that nurturing healthy emotions throughout the aging process can help people thrive cognitively. Studies show this includes maintaining positive self-esteem, autonomy (self-sufficiency), good relationships and a sense of purpose in life. “People who feel self-efficacy experience less cognitive decline,” Cuthbert said. ■



Dr. John Whitmarsh recently joined NIGMS as a program director in the Biophysics Branch of the Division of Cell Biology and Biophysics, where he will administer grants in bioinformatics and computational biology. A particular focus of his will be to develop initiatives to attract mathematicians, physicists, engineers and computer scientists to apply their quantitative skills to biological research. Whitmarsh was previously director of the Center for Biophysics and Computational Biology at the University of Illinois at Urbana-Champaign. For the past 21 years, he served on the UIUC faculty in the plant biology and biochemistry departments. He accepted a visiting professorship at the Max-Volmer Institute for Biophysics and Physical Chemistry in Berlin from 1989 to 1990.

Acquisition Community Holds Symposium

NIH's acquisition community held its biennial educational symposium recently at the National Conference Center, Lansdowne, Va. More than 200 acquisition professionals attended the symposium, which had as its theme "NIH Acquisition—Journey into the Future." Diane Frasier, head of the contracting activity at NIH, kicked off the symposium with opening remarks.

Other speakers tackled subjects including human capital and the importance of planning for the departure and replacement of the many federal employees who are eligible to retire in the next 5 years; acquisition restructuring

with the "One HHS" initiative in mind; the new NIH Business and Research Support System (NBRSS) and how it will affect everyone in the future; A-76 competitive sourcing and what everyone should expect as more federal jobs are being subjected to competition with the private sector; and teleworking and its advantages to both the government and employee.

The speakers included Dr. Greg Milman of NIAID, who directed an entertaining skit entitled "Dark Winter" about a serious subject—a smallpox epidemic. The skit highlighted the many complicating factors involved in containing and reacting to such a disaster and provided detailed information and chilling statistics about such an outbreak. The "actors" were volunteers from the acquisition community.

Journalist Mike Causey, who wrote the Federal Diary column in the *Washington Post* for over 30 years and is currently with Federal News Radio, also gave his perspective on "The Future for Federal Employees."

Symposium participants had a chance to purchase raffle tickets for such prizes as a DVD player. All prizes were donated and proceeds benefitted the Children's Inn at NIH. At the close of the symposium, Jan Mahrer, director of development and public relations for the inn, accepted a check for \$1,000 that was raised by the raffle. ■

Have Thalassemia Major?

Consider an NIH study that may increase the amount of red cells in your body. For more information call 1-800-411-1222 (TTY 1-866-411-1010) or email prpl@cc.nih.gov. ■

Leukocyte Adhesion Deficiency (LAD) Study?

Doctors at NIH invite you to take part in a treatment study for LAD. For more information call 1-800-411-1222 (TTY 1-866-411-1010) or email prpl@cc.nih.gov. ■

HIRE EDUCATION



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>.

Introduction to MS Access 2000	12/17
Introduction to MS PowerPoint 2000	12/18
Fellowship Payment System	1/9
Introduction to MS Word 2000	1/14
NIH Correspondence: Letter and Memo Preparation	1/14

CIT Computer Classes

All courses are on the NIH campus and are given without charge. For more information call 594-6248 or consult the training program's home page at <http://training.cit.nih.gov>.

Basic Security Principles	12/12
Understanding the Grants Process	12/12
Using Photoshop to Work with Scientific Images	12/12
Budget Tracking	12/13
Data Warehouse Analyze: Budget & Finance	12/13
Writing for the Web	12/13
Xplor-NIH: Recent Advances	12/17
Mac OS X Server Integration	12/17
Creating Composite Images with Photoshop	12/16
The NIH Contractor Performance System for New Users	12/16
Introduction to Cascading Style Sheets	12/17
NIH Data Warehouse Query: Advanced Query & Reporting Workshop	12/17
Parachute for Windows	12/18
Designing Effective Scientific Slides	12/18
Fundamentals of Unix	12/18-20
Grants Management Standardized Spreadsheet	12/19
Seeking Information on the Web	1/6
Introduction to Active Server Pages	1/7
PowerPoint Topics: Graphs, Links and More	1/7
Programming with Java	1/7-9
Wireless Network Sniffer Workshop	1/8-10
Windows XP - What's New	1/9
Account Sponsor Orientation and Workshop	1/14
Flash Fundamentals	1/15
The SAS Output Delivery System	1/15
Creating Presentations with PowerPoint for the PC	1/15
Active Directory at NIH for Network Administrators & Developers	1/16

Type III Gaucher Disease?

People with Type III Gaucher disease may be able to participate in a study at NIH. The study is evaluating the drug OGT 918. For more information call 1-800-411-1222 (TTY 1-866-411-1010) or email prpl@cc.nih.gov. ■



Diane Frasier (r), head of the contracting activity at NIH, presents a check for \$1,000 to Jan Mahrer of the Children's Inn at NIH.

NCI Mourns Lloyd Law

Dr. Lloyd W. Law died Oct. 20 at his home in Asbury Methodist Village in Gaithersburg, one week short of his 92nd birthday. His outstanding scientific career spanned over five decades, including more than 40 years at the National Cancer Institute.

He was a graduate of the University of Illinois, and he earned his M.S. and Ph.D. degrees in biology from Harvard University. In 1947, Law began working at NCI, and from 1970 to 1989 he served as chief of the Laboratory of Cell Biology. In 1990, he became scientist emeritus and was a frequent visitor to the lab for the next 10 years.

He was born in Ford City, Pa., and worked as a high school teacher in Illinois before entering graduate school. His pioneering work on the origins and treatment of cancer began at the Jackson Memorial Laboratory in Bar Harbor, Me. where Law worked from 1938 to 1947, interrupted by 4 years as pilot instructor for high-altitude flyers for the Army Air Corps during World War II.

Arriving at NIH, he headed a leukemia studies section. He made extensive use of transplantable and cultured mouse leukemia lines for testing of drugs, including folic acid antagonists and anti-metabolites. His use of these tumor models made possible his important contribution to the cure of childhood leukemia with the simultaneous use of combinations of different types of chemotherapeutic drugs.

In the 1950's and 1960's, he collaborated with NCI clinicians, including Drs. Emil Frei and Emil

Freireich, to apply the experimental results to treatment of Clinical Center patients, with resounding success. In addition, his scientific program made seminal discoveries on the importance of the thymus and bone marrow in leukemia and lymphoma.

For his pioneering work, Law was awarded a number of honors, including the Richard and Hinda Rosenthal Foundation Award and the G.H.A. Clowes Memorial Award from the American Association for Cancer Research, which he served as president from 1967 to 1968; and the Meritorious Service and Distinguished Service Awards from the Public Health Service, in which he served as commissioned officer for much of his career. He was the G.B. Mider lecturer at NIH in 1970. On the occasion of Law's 90th birthday, a symposium on the "Origins of Combination Chemotherapy" was held in the Cloister at NIH, and the Lloyd W. Law Library for Cancer Research was dedicated in Bldg. 37.

Law's wife, Bernette, died of cancer in 1976; he is survived by two sons and four grandchildren.

Although it was well-known that he never missed major league baseball's spring training in Florida, not everyone knew that he had been an accomplished baseball player in his youth, winning an athletic scholarship to college and enjoying a short-lived career in minor league baseball. Many are fortunate that Law traded his passion for playing baseball for a career in medical science.—Beverly Mock

Is Lupus Disrupting Your Life?

Take part in a medical research study at the National Institutes of Health. For more information, call 1-800-411-1222 (TTY 1-866-411-1010) or email prpl@cc.nih.gov.

Sostek Becomes New CSR Division Director

Dr. Anita Miller Sostek has been named director of a newly reconfigured Division of Clinical and Population-Based Studies at the Center for Scientific Review. To better manage its expanding responsibilities for coordinating reviews of NIH grant applications, CSR is reconfiguring its three review divisions into four.

"Dr. Sostek has the outstanding abilities we need to move forward," said Dr. Ellie Ehrenfeld, CSR director. "We have grown enormously and broadened our activities in recent years."

Sostek's division will include five integrated review groups: social sciences, nursing, epidemiology and methods; risk, prevention and health behavior; behavioral and biobehavioral processes; surgery, radiology and bioengineering; and brain disorders and clinical neuroscience. More information about CSR's new divisions is available



Dr. Anita Miller Sostek

online at www.csr.nih.gov.

Sostek was previously chief of CSR's biobehavioral and behavioral processes IRG and its predecessor, the behavioral and social sciences IRG. She also served as scientific review administrator of the BBBP-6 study section, which covers child and adolescent psychopathology and developmental disabilities. She holds a master's degree in developmental psychology from the University of Rochester and a Ph.D. in developmental psychology from the State University of New York at Buffalo. Prior to coming to NIH, Sostek was an associate professor at Georgetown University Medical School, where she studied high-risk infant follow-up as part of an interdisciplinary clinical research team at its Child Development Center. ■

Children's Weight-Loss Study

Doctors at NIH are enrolling overweight children, ages 6-17 in two new weight-loss studies. There is no charge for participation. Call 1-800-411-1222 (TTY 1-866-411-1010) or email prpl@cc.nih.gov. ■

Zerhouni Meets with Public Council

By Keri-Lyn Coleman

The NIH director's Council of Public Representatives (COPR) held its first meeting with Dr. Elias Zerhouni on Oct. 21-22. During a 1½-day orientation and administrative planning session, COPR members and its chair, Zerhouni, identified priority issues. These include the development of COPR testimony that will provide a public perspective on the issues the Institute of Medicine committee

should consider in its review of the organizational structure of NIH.

A public meeting where COPR reported on newly established priorities followed the planning session. Zerhouni and council members said their work plan consists of three action items. First, the council created a work group to focus on IOM's review of how NIH is organized. COPR

examined background materials on the topic and has developed and submitted recommendations from the public perspective to the director, requesting that he consider forwarding them directly to IOM.

COPR also established an agenda and executive issues work group that will review topics that have been identified as top priorities in the next 1-2 years. The group will evaluate whether COPR has a role in any of these areas that would justify a focused effort. The areas identified for review include health disparities, best practices for public input into the research priority-setting process, prevention and enhancing public trust and confidence in the research enterprise.

Finally, COPR formed a work group that will examine how NIH might enhance communication between members serving on advisory councils across NIH. As initial steps, three members conducted a presentation on COPR at the Dec. 5 meeting of the advisory committee to the director and two members will talk to the NCI director's consumer liaison group at its January meeting.

COPR members also recognized NIH deputy director Dr. Ruth Kirschstein for her dedication to the council. During her tenure as acting director, she chaired COPR for more than 2 years and was instrumental in shaping the council's direction. Members presented her with a plaque and thanked her for the "unparalleled support, leadership and direction she has given to the COPR since its inception."

The meeting marked the last gathering of the council's eight remaining founding members. They

were among the first 20 individuals appointed by former NIH director Dr. Harold Varmus when COPR was initially created in 1999. Zerhouni recognized them for their commitment to COPR's mission.

The council is currently made up of 21 people from across the country. They are patients, family members of patients, health care professionals, scientists, health and science communicators and educators. COPR meets two times a year in Bethesda. Members also participate in numerous NIH initiatives, work groups and review panels as well as take part in public outreach activities around the country. For more information visit <http://copr.nih.gov>. ■

Dr. Edward Trapido has been named associate director of NCI's Epidemiology and Genetics Research Program, Division of Cancer Control and Population Sciences. He will plan, direct and manage NCI's extramural epidemiology and genetic

epidemiology research program, which supports more than 400 research grants and cooperative agreements totaling \$280 million. Trapido was professor and vice chair of the department of epidemiology and public health, University of Miami School of Medicine. He also was

associate director for cancer prevention and control at the Sylvester Comprehensive Cancer Center, and directed the M.P.H. and Ph.D. epidemiology teaching programs. Before joining the University of Miami as an epidemiologist in 1984, Trapido was a staff fellow for 3 years in NCI's intramural epidemiology program.



Wednesday Afternoon Lectures

The Wednesday Afternoon Lecture series—held on its namesake day at 3 p.m. in Masur Auditorium, Bldg. 10—features Dr. Nadia A. Rosenthal on Dec. 18, giving the annual George Khoury Lecture on "Prometheus' Vulture and the Promise of Stem Cells" (see story on p. 1). This is the last WALS lecture of the fall season.

The series resumes on Jan. 8, 2003, with a talk by recent Lasker Award winner Dr. Randy W. Schekman, professor, department of molecular and cell biology and HHMI investigator, University of California, Berkeley. He will discuss, "Molecular Mechanisms of Protein Sorting in the Secretory Pathway."

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



Eight founding members of COPR attended their last meeting before rotating off the council in early 2003.

Shown above with NIH director Dr. Elias Zerhouni (c) are (from l) Isaac Montoya, Rosemary Quigley, Debra Lappin, Vicki Kalabokes, Luz Claudio and Doug Yee. (Not shown: Bob Roebr, Barbara Lackritz)