SEPTEMBER 21, 2007
VOL. LIX, NO. 19
The Second Best Thing About Payday

nih record

ABOVE • *Attendees at Camp Fantastic BBQ were challenged to break glass windows.*

features

departments

The NIH Record is recyclable as office white paper.

Small Is Bountiful

Caltech's Roukes Reports on Nanotech Revolution

By Belle Waring

California Institute of Technology's Dr. Michael Roukes recently offered NIH a report from the academic front, where a revolution in nanotechnology has entered its second decade.

"We've got to get down to brass tacks in the nanoworld," Roukes told the audience in Masur Auditorium. "We've got to do research that will have practical applications." A professor of physics, applied physics and bioengineering, Roukes carried out some of the earliest explorations of nanoelectronic devices. His talk, "Nanocraft v. Nanotechnology: Realizing Transformational Tools for the Life Sciences and Medicine," covered imaginative uses of the new classes of nanotools now emerging.

First, what's a nano? And what has it done for us lately?

SEE **NANO**, PAGE 6

Caltech's Dr. Michael Roukes calls for practical applications in nanotechnology.

NIH's Summer Blockbusters

Behind the Scenes at 'Science in the Cinema'

By Sarah Schmelling

This may come as a surprise, but the Office of Science Education's Science in the Cinema film series is now in its 14th year. Starting quietly in 1994 with *The Story of Louis Pasteur*, the festival—which combines screenings of medical science-related films with expert-led discussions—has evolved into a summer event, providing its public audiences with the rare opportunity to hear firsthand from scientists about health issues portrayed in popular culture.

According to Debra Knorr, Science in the Cinema program manager, it all started when OSE director Dr. Bruce Fuchs heard about a brown-bag lunch series at a research institute where graduate students watched films related to mental health, then discussed them. "When he became director of this office, he decided to start up a program that included all types of health and medical science issues, and was open to the public," Knorr says.

Each year, an internal committee starts meeting in January to begin researching films. They look for films with diverse subject matter, and

SEE **SCIENCE IN FILM**, PAGE 4

Lcdr. Alison Adams-McLean (l), a registered nurse in the Commissioned Corps, with potential recruit

'Best Kept Secret' No Longer

NIH Hosts First Commissioned Corps Awareness Day

By Belle Waring

It takes more than 100-degree heat to wilt a passion for public health. Scores of officers from the Public Health Service Commissioned Corps gathered at NIH on Aug. 8 to share the word on health education, disease prevention and career opportunities. Officers from NIH and other agencies were out in force.

"This is the very first time we've had Commissioned Corps Awareness Day," Rear Admiral Richard Wyatt said in opening remarks. "I

SEE **CORPS**, PAGE 8

The **NIH Record** is published biweekly at Bethesda, MD by the Editorial Operations Branch, Office of Communications and Public Liaison, 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 upon request. Use of funds for printing this periodical has been approved by the director of the Office of Management and Budget through September 30, 2007.

NIH Record Office
Bldg. 31, Rm. 5B41
Phone (301) 496-2125
Fax (301) 402-1485

Web address
http://nihrecord.od.nih.gov

Editor
Richard McManus
rm26q@nih.gov

Assistant Editor
Carla Garnett
cg9s@nih.gov

Staff Writers
Jan Ehrman
je48b@nih.gov

Sarah Schmelling
ss1116y@nih.gov

Belle Waring
bw174w@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.

nih record

briefs

Research Festival Set, Sept. 25-28

The 20th anniversary NIH Research Festival takes place Sept. 25-28. The opening plenary session on "Chromosomes in Modern Biology and Medicine" begins at 9:30 a.m. Tuesday, Sept. 25 in Masur Auditorium, Bldg. 10. Then events switch to the Natcher Bldg., where poster sessions and exhibits occupy the lunch hour, along with the festival's food and music fair. That afternoon, six concurrent symposia on the theme Whole Genome Analyses are scheduled, followed by the FARE 2008 award ceremony at 4:15. Wednesday's events include more poster sessions, more food/music and two six-packs of symposia, one on Organelle Trafficking and Dysfunction in Diseases and the other on Immunotherapy vs. Immunosuppression. The week wraps up with a job fair for postdocs on Thursday, and remarks on "The Future Direction of Biomedical Research," by NIH director Dr. Elias Zerhouni at 10:30 a.m. Thursday and Friday also feature the annual Technical Sales Association exhibit tent. For more information, visit researchfestival.nih.gov.

NIH CFC Kick-Off Set, Oct. 4

Don't miss the NIH Combined Federal Campaign kick-off on Thursday, Oct. 4 from 11 a.m. to 1 p.m. on the quad between Bldgs. 31C and 33. On hand for the premiere of the 2007 campaign will be local celebrities, charity representatives, food vendors and musicians. The theme of this year's campaign is "Have a Heart. Be a Star." Come out and see how you can help bring light into the lives of others this fall.

APAO Welcomes Award Nominations

The NIH Asian and Pacific Islander American Organization will continue its tradition of honoring employees with significant contributions in the following categories: an employee in the field of management who has made an outstanding contribution to the advancement of Asian and Pacific Americans; and an NIH APA researcher/scientist who has made significant accomplishments in biomedical research. Winners will be honored with a plaque from APAO at its annual holiday award luncheon on Tuesday, Dec. 11 in Wilson Hall, Bldg. 1.

A review committee composed of APAO members from several institutes and centers will evaluate the nominations, which must be received electronically by Friday, Oct. 19 for consideration. To nominate someone, send a 1-page statement and, if applicable, a CV to Sally Hu (management nominations) or to Keiko Ozato (researcher/scientist nominations).

For more information about the awards or APAO, contact Prahlad Mathur, (301) 435-4618.

Principles of Clinical Research Class

Registration for the 2007-2008 "Introduction to the Principles and Practice of Clinical Research" has begun. The course will run from Oct. 15 through Feb. 25, 2008. The deadline for registering is Oct. 5. Classes will be held on campus on Monday and Tuesday evenings from 5 to 6:30. There is no charge for the course but purchase of a textbook is suggested. A certificate will be awarded upon successful completion of the course, including a final exam. For more information or to register, visit www.cc.nih.gov/researchers/training/ippcr.shtml or call (301) 496-9425.

Yoga Meditation Held Weekly

Sahaja yoga meditation class is held every Thursday at 7 p.m. on the third floor of the CRC, Rm. 1608 North. Sahaja yoga seeks to awaken inner energy called kundalini. It can be practiced by people of any age and does not involve any physical exercise. The class, offered for free, is sponsored by the recreation therapy section of the rehabilitation medicine department. For more information contact Jasmin Salloum, (301) 435-7645.

Gottesman To Give Next Diversity Lecture, Oct. 2

Dr. Michael Gottesman, NIH deputy director for intramural research, will speak at the NIH Diversity Seminar Series on Tuesday, Oct. 2 from 1 to 2 p.m. in Wilson Hall, Bldg. 1. Sponsored by the Office of Equal Opportunity and Diversity Management, this will be the second lecture in the series on valuing diversity. The seminars are a tool for incorporating concepts of diversity into the workplace and a resource for managing a multicultural workforce. All are encouraged to attend. Sign language interpreters will be provided. For more information, call (301) 451-0478. Individuals who need reasonable accommodation should call Carlton Coleman at (301) 496-2906 or the Federal Relay Service at 1-800-877-8339.

EXTRA! Get *NIH Record* Email Updates

Want to know when the *Record's* fresh off the presses? Subscribe to our new email list and receive alerts to our latest issue—plus top headlines and links to our online edition—right on your desktop. To get the updates, simply send an email to listserv@list.nih.gov with "NIHRECORD" in the message body.

White To Address Malaria Treatment In Gorgas Lecture

By Jason Bardi

If historians were to pass judgment, one of the most instructive chapters in the annals of infectious disease control might be the failed effort to eradicate malaria in the mid-20th century. According to Dr. Nicholas White, a distinguished professor of tropical medicine at Mahidol University in Bangkok, Thailand, the story of malaria control remains far from finished.

White will explore the past and future of malaria treatment in the upcoming NIAID-sponsored Gorgas Memorial Leon Jacobs Lecture. From the earliest use of Chinese sweet wormwood and quinine-containing Cinchona bark to the modern-day use of combination treatments, he will discuss the rationale for current treatment recommendations and describe how malaria drugs ultimately could contribute to eliminating the disease.

White will deliver his lecture, "Treating Malaria: The Long and Winding Road," at 3 p.m. Thursday, Sept. 27, in Bldg. 50, 1st floor Conf. Rm. 1227/1233.

A century ago, the possibility that malaria would be eradicated seemed exciting and real. Two of the earliest Nobel prizes in physiology or medicine were awarded in 1902 to Ronald Ross, who demonstrated that mosquitoes spread malaria, and in 1907 to Alphonse Laveran, who discovered the *Plasmodium* parasite that causes the disease.

Malaria eradication through mosquito control became a major public health effort worldwide in the first half of the 20th century. After World War II, these efforts, which included the use of DDT, intensified. And not without success—incidence of the disease fell dramatically in the United States and Europe.

Nevertheless by the mid-1960s, many considered the goal of worldwide malaria eradication unattainable. Eradication efforts were largely abandoned. In the late 1960s and early 1970s the disease resurged, fueled by drug resistance, problems with mosquito control and faltering public health infrastructures in many countries. By the 1980s, malaria was reemerging as a huge problem in many parts of the world, which White witnessed firsthand.

He has spent his entire career practicing medicine in tropical settings. He is principal fellow of the Wellcome Trust and chairs the Wellcome Trust Tropical Medicine Research Programmes in South-east Asia and the Oxford Tropical Medicine Network, which encompasses research groups in Thailand, Vietnam, Laos, Kenya and The Gambia.

According to the World Health Organization, about 40 percent of the world's population—some 2.5 billion people—are currently at risk of malaria. Every year, 500 million people become severely ill with the disease and more than 1 million people die. Children are most affected.

"We should now reengage with the possibility of getting rid of malaria," says White. There is tremendous opportunity today, he notes, because of renewed attention to the problem and new funding flowing into malaria control efforts from governmental, non-profit and private company sources. New interventions are also available.

White has championed the use of artemisinin derivatives as treatments for malaria. Artemisinin, a natural product found in the sweet wormwood plant, has been a traditional treatment for fevers in China for nearly 2,000 years. In the 1970s, Chinese research teams succeeded in isolating artemisinin for the first time and proved that it was a powerful antimalarial compound. The derivatives of artemisinin have proven even more effective; their road to the clinic is one of the main subjects of White's talk.

His own clinical studies involving these antimalarial compounds in the 1980s and 1990s have convinced White that their use, along with mosquito control measures such as the distribution of insecticide-treated bed nets, could dramatically reduce malaria mortality and might ultimately contribute to the elimination of malaria.

"These drugs are extraordinary. They are much better at treating severe malaria, they have proven safe and effective and they are a first-line treatment in many parts of the world," White says. "Malaria experts may be reluctant to use the term 'eradication,' but today we have what we need to control and eliminate the disease."

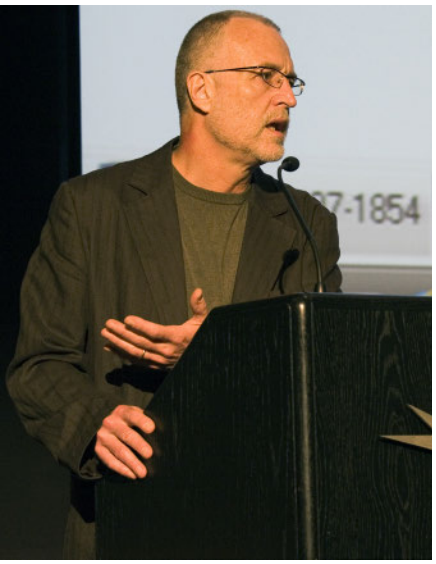
White received his education at the University of London, earning a B.Sc. in pharmacology and first-class honors in 1971. He graduated with honors in medicine and pathology and applied pharmacology and therapeutics in 1974, and was awarded a doctorate in medicine in 1984. He was subsequently awarded a D.Sc. from the University of London in 1995. In 2001, he was elected a fellow of the Academy of Medical Sciences and in 2006 he was elected a fellow of the Royal Society.

The Gorgas Lecture is hosted by NIAID's Laboratory of Parasitic Diseases and Laboratory of Malaria and Vector Research. For more information, contact Julie Marquardt at (301) 496-5717.

Palczewski To Give Sayer Lecture, Oct. 5

Dr. Krzysztof Palczewski, the John H. Hord professor and chair of pharmacology at Case Western Reserve University, will give the second annual Sayer Vision Research Lecture on Friday, Oct. 5 from 3 to 5 p.m. in Lipsett Amphitheater, Bldg. 10. His research interests include phototransduction enzymes, retinoids in vision and structural studies of G protein-coupled receptors. His topic will be "G Protein-Coupled Receptor Signaling in Phototransduction." Dr. Jane Sayer, NIH research scientist, established the Sayer Vision Research Lecture and Award at the Foundation for the National Institutes of Health in 2006 in partnership with the National Eye Institute to honor her family and the memory of her parents, Winthrop and Laura Sayer.

CONTINUED FROM PAGE 1



***Top**:*
Following a screening of The Lost Weekend *during the Science in the Cinema festival, Dr. Mark Willenbring of NIAAA discussed the film's portrayal of alcoholism.*

***Above**:*
For the 2005 Spanish-language film Mar Adentro (The Sea Inside)*, Dr. Ezekiel Emanuel, chair of the Clinical Center's department of clinical bioethics, led a discussion on "dying with dignity."*

try to find at least one "classic," as well as newer works. More importantly, they look for films that will inspire dynamic discussions. "You'll get a question specifically related to the film, or to the state of the art of the medical research, or a personal health question," says Knorr. In some years, when they've shown a film based on a "true story," they've even had people portrayed in the films sitting in the audience.

So how did the program fare this year? Knorr recently answered questions on this summer's series for the *Record*.

How successful was this year's season?
The [OSE] is extremely pleased with the turnout and level of audience participation in the post-film discussions...This year represented a record turnout. In most instances, the theater was filled to capacity.

How would you compare it to other years?
We have clearly gained a loyal following at the AFI Silver Theatre. Judging from the breadth and depth of questions, it is apparent that we're attracting an audience that has a deep desire to further their understanding of specific medical and health-related issues.

What were the most popular films?
I can't point to one film that I would say was more popular than another. However, I do think...a certain percentage of people attending films did so because of a personal interest in the medical science theme depicted in that evening's film. Based on questions, many people obviously had a personal interest in the topic presented that evening because of their own medical history or that of a friend or loved one.

Can you tell us about some of the discussions?
After the 2006 film *Half Nelson*, Dr. Donald Vereen, medical officer and special assistant to the director, NIDA, led an engaging discussion on the neurobiology of addiction...For *The Lost Weekend*, Dr. Mark Willenbring, director of the Treatment and Recovery Research Division, NIAAA, discussed the fact that even though the film was produced in 1945, it remains an incredibly accurate portrayal of alcoholism.

With *Rory O'Shea Was Here* (2004), Dr. John Porter, program director, neuromuscular disease channels, synapses, and circuits cluster, NINDS, focused on Duchenne muscular dystrophy and cerebral palsy, the diseases that afflicted the two main characters...The 2005 film, *Mozart and the Whale*, discussed by Dr. Ann Wagner, chief, Neurodevelopmental Disorders Branch, NIMH, prompted intense questioning. A number of participants had friends or relatives with Asperger's syndrome so their interest was palpably personal. In one case a woman discussed her spouse, whose Asperger's went undiagnosed for 18 years.

For the 2005 Spanish-language film, *Mar Adentro (The Sea Inside)*, Dr. Ezekiel Emanuel, chair, department of clinical bioethics, led a discussion about the ethical and legal issues surrounding the topic of "death with dignity"... And with the 2001 film, *On the Edge*, Dr. Donald Rosenstein, chief, Psychiatry Consultation-Liaison Service, NIMH, discussed suicide prevention and therapeutic intervention strategies.

How did this season influence what you plan to do for next year?
We have just completed our 14th year of the series. Consequently, it takes a great deal of research and review to find quality science and health-related films that have not been screened previously. As much as possible, we also like to select topics that represent a range of NIH institute and center experts. For example, we were able to draw from scientists at NIMH, NIAAA, NINDS, NIDA and the CC for the 2007 series. Other factors are the quality, duration and age of the film. The series has always been limited to feature films, as opposed to documentaries. We also need to find films that screen in less than 2 hours, as it would be difficult to ask the attendees to sit through a film of great length and the subsequent discussion at the end of a long day.

What kind of feedback have you received for this year's series?
People watch films all the time and in most cases, they probably come away with the same types of questions that are raised by attendees of the film series. In the "real world," there is generally no authoritative source for these people to turn to in seeking answers. We are continually told by attendees that they have never met a professional scientist and that they are eager to learn from and interact directly with the experts in the scientific community.

Were there any surprises this year?
I think the 2007 film festival is an excellent example of how the scientific community is becoming increasingly adept at engaging the public in scientific dialogue. Our lineup of experts this year was extremely effective at communicating the importance, complexity, excitement and hope embodied in their respective areas of medical research to a diverse public audience.

NIH director Dr. Elias Zerhouni (l) receives the Golden Plate Award at the Academy of Achievement's 46th annual International Achievement Summit from past honoree Dr. Steven Rosenberg (r), chief of NCI's Surgery Branch.

Zerhouni Receives Academy of Achievement's Golden Plate Award

NIH director Dr. Elias Zerhouni recently received the Golden Plate Award at the Academy of Achievement's 46th annual International Achievement Summit in Washington, D.C.

Each year, the academy invites men and women of exceptional accomplishment—previous awardees and 29 new guests of honor—to share their wisdom and experience with nearly 300 of the world's most outstanding graduate students from 50 countries.

Each guest of honor receives the Golden Plate Award as a "representative of the many who excel" in his or her chosen profession.

Past honoree Dr. Steven Rosenberg, chief of NCI's Surgery Branch, presented the award to Zerhouni. The summit included a 5-day Washington visit by the students; one afternoon was devoted to an NIH tour where guests heard presentations by Zerhouni, Rosenberg, NIAID director Dr. Anthony Fauci and NHGRI director Dr. Francis Collins.

Summit attendees included former President Bill Clinton, Desmond Tutu, several Supreme Court justices and Nobel laureates, and stars from the worlds of professional sports, film and literature.

Braveman's 66th Benefits Children's Inn

Dr. Norman Braveman (r), special assistant to the NIDCR director, found a novel way to celebrate his 66th birthday on Sept. 1. He invited some friends to join him on a bike trip from the Children's Inn at NIH to Mt. Vernon and back, a distance of 66 miles. Not everyone in the party made the entire circuit, but Braveman donated a dollar to the inn for every mile ridden. "According to my calculation, we totaled 381 miles," he said. "In addition, some other friends who couldn't make it have given me checks totaling another $220 and I have inquiries from others who want to know how to [donate]." Braveman, who has been at NIH for more than 27 years and has returned to athletic pursuits following hip replacement surgery, has collected more than $600 for the inn. Among those who pedaled with him were Dr. James Anderson (above, l) of NIGMS and Jules Asher of NIMH (r). Along for a portion of the journey was NIDCR deputy director Dr. Isabel Garcia and her family, including 10-year-old son Adam.

Selden Gets Gold at National Championships

Dr. Chuck Selden, NIH extramural staff training officer, won 5 gold medals and 1 bronze at the U.S. Masters National Rowing Championships held Aug. 9-12 in Oak Ridge, Tenn. He competed mostly in the age group 55-59 as a member of a group of world-class rowers known as Occoquan International. His most important win, he reports, was in single scull—his first victory in the event since 1990. That earned him a "perpetual" trophy engraved with his name that he gets to keep for a year. His other events included double scull, quadruple scull, pair-oared shell and two races in 8-oared shell.

NANO

CONTINUED FROM PAGE 1

Nano—from the Greek word for "dwarf"—means one-billionth. One nanometer equals one-billionth of a meter.

Here it is in perspective. A human hair is 100 microns wide. The largest individual cell is around 10 microns—this is the limit of human vision. The cell nucleus measures 1 micron, the equivalent of 1,000 nanometers. Drop down to 10 nanometers to find individual strands of DNA. And at 1 nanometer are individual atoms and molecules.

> *"We've got to cross a chasm to metamorphose 'feats' at the nanoscale into usable technology."*

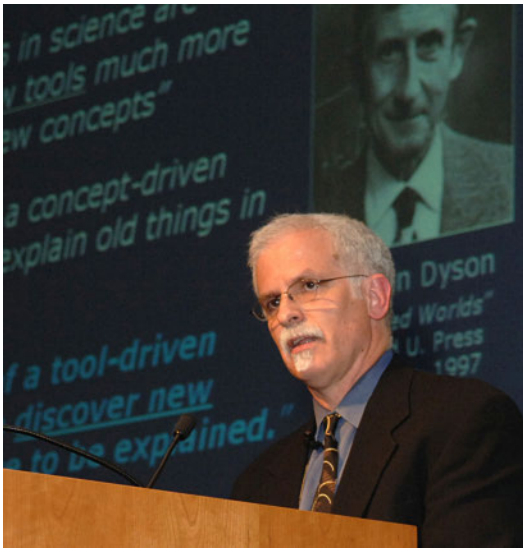
Nanotechnology research began with applications outside medicine and is based on discoveries in physics and chemistry. One offshoot is nanomedicine—medical intervention at the molecular scale, where much of the research is still preliminary.

To achieve the full potential of new nanotools for clinical medicine, Roukes said, we need to "focus on emerging active nanomachines." These are complete systems for biological processing and analysis, but scaled down to the size of microchips that are "powered up" to achieve their function.

What are nanomachines? "First, they are produced by Mother Nature," Roukes explained, as in molecular motors (agents of movement) and ion channels (proteins that control the cell's voltage gradient). Down in the nano, Mother Nature runs the show; our very bones are self-assembling nanostructures.

Now scientists like Roukes are beginning to duplicate such structures—but how best to design and deploy them? The question has long captured the imagination: folklore is full of tiny heroes like Tom Thumb; in the sci-fi film *The Fantastic Voyage,* scientists are shrunk and dispatched into a man's bloodstream to search for and destroy a nasty clot.

Nano is the design scale of nature itself. It's the scale at which we're made. "Nanotechnology is the unit response at the root of biological processes," Roukes explained.



"Nanotechnology is the unit response at the root of biological processes," Roukes explained.

Down at that molecular or atomic level, things can change radically, in part because certain properties are size-dependent. For example, on the nanoscale things are markedly influenced by Brownian motion (the random movement of particles suspended in fluid), which means that nanodevices could be slammed like dancers in a mosh pit. And in nanoscale, water doesn't flow like the water we drink; instead, it affects nano-objects moving in it more like molasses.

Roukes began with a brief history of nanoresearch: "[Nobel laureate] Richard Feynman dreamed of making nanosystems and machines" as early as 1959, but "there was no interest in the early years."

In the U.S., the field was jumpstarted by the 1992 National Nanotechnology Initiative, which now boasts two dozen federal agencies as partners, NIH among them. Nanomedicine is part of the NIH Roadmap for Medical Research.

For the initiated, Roukes also offered an overview of "techno-goodies" and nanoprojects in development (some of which are funded by NIH). His first topic was advances in the study of proteins, which constitute the machinery within the cell. "No other proteomics technology is as important as mass spectometry," he said. "A holy grail is measuring and quantifying all proteins operative within a cell."

Among other opportunities are mapping the forces generated by living cells as they are developed, ultimately with single-molecule resolution; resolving the metabolism of individual cells; and tracking stochastic [i.e., unpredictable] biochemical processes at the level of single molecules—all in real time.

Roukes's slides included nanodevices in cell motility experiments. One used a plastic chip with a flow channel, a dandy little thing housed within an intricate, much larger chamber that in turn used fluorescent microscopy to be read out electronically. Think of a microfluidic work station where you watch the cell put out its feet and move as you measure and control it in real time.

Here, "higher resolution reveals new phenomena never seen before—bursts of [cell] activity" and temporal and force resolution; oscillations in force. Roukes described nanomachines to measure metabolic rates in normal cells and cancer cells—and that's *single* cells. "This is the value-added of nanoscience," he said. "Advances in nanoscience have improved calorimeters."

So what if doctors could find the very first cancer cells in the body and remove them before they formed a tumor?

"We've got to cross a chasm," Roukes said, "to metamorphose 'feats' at the nanoscale into usable technology."

He stressed that such "an unfamiliar fusion of technologies" common to the commercial sector must now reach academe. Commercial applications using nanoscale materials have already yielded myriad products including sunscreens, optical fibers, computer hard drives, eyeglass coatings and wound dressings.

As interactions between molecules and larger structures are mapped and we see the intricate operations inside living cells, Nature's molecular machines could guide us to build our own. And this effort, said Roukes, is "a monumental challenge that transcends the capabilities of any one lab."

NIH Firefighters Recognized for Rescue Effort in Kensington House Fire

Six firefighters from the NIH Division of Fire and Rescue Services, better known as the NIH Fire Department, were recognized on Aug. 27 for their part in the successful rescue of five children from a burning home in Kensington on Feb. 3.

Montgomery County Fire Chief Thomas W. Carr, Jr., (third from l) recently recognized six NIH firefighters for their role in rescuing children from a house fire. They include (from l) Technician John Bede, Master Firefighter Richard Blair, Captain Ed Gotthardt, Master Firefighter Israel Burch, Firefighter Francis Brennan and Master Firefighter Joe D'Ambrosio.

At the ceremony, Montgomery County Fire Chief Thomas W. Carr, Jr., presented a unit citation to Technician John Bede, Master Firefighter Richard Blair, Captain Ed Gotthardt, Master Firefighter Israel Burch, Firefighter Francis Brennan and Master Firefighter Joe D'Ambrosio for their "extraordinary efforts" in helping save the lives of children, including 13-month-old twins, and youngsters ages 3, 7 and 12. The NIH firefighters were part of a contingent of about 60 firefighters and emergency medical personnel from multiple locations responding to the scene.

The first floor of the Connecticut Ave. home was engulfed in flames on two sides when emergency personnel arrived on the scene after receiving a 911 call from a 12-year-old girl trapped inside the house. A frantic mother outside the home confirmed that her children were still inside. The crew from NIH Tower 51 was the first to get ladders in place to the second floor to support the search effort.

In the search and rescue mission, firefighters located all the children on the second floor. Several were found unconscious. Some were handed out windows; others were carried out of the burning house. All survived.

In remarks at the ceremony, Chief Carr underscored the gravity of the situation. "We were right on the edge of losing these kids...but five kids lived because of good training. All the pieces came together." He also emphasized his appreciation for the mutual aid that NIH and Montgomery County share when it comes to fire, rescue and emergency medical assistance. "I sure hope this relationship continues."

The Division of Fire and Rescue Services is part of the Office of Research Services.—**Brad Moss**

CORPS

CONTINUED FROM PAGE 1

***Above, l**:*
Blood pressure screening offers a chance to meet corps members.

Above, r:
Capt. Glen Stonebraker (r), an engineer with ORF, describes career advantages to joining the Commissioned Corps.

***Below**:*
Capt. Karen Siegel (r) shares information on the corps' specialties in therapy, including occupational, physical and speech.

***Bottom**:*
The pharmacists' table (foreground), as well as the dentists' corner, welcomes questions.

PHOTOS: MICHAEL SPENCER

assure you that NIH is in a position where the corps can grow. [NIH director] Dr. Zerhouni and the senior leadership are very supportive."

The patio of Bldg. 31 thronged with officers in crisp khakis and summer whites as students and employees made the rounds. Two full-sized posters beckoned to folks on lunch break and 11 tables were set up to present the breadth of corps activity. The event also offered free blood-pressure screening and a chance to meet corps members.

"With your background," Lt. Robert Horsch told an attendee keen on environmental health, "there are a lot of avenues you could take. To join, you'd first need a degree from an accredited program." That's one clue to the corps' elite reputation: every successful recruit already has a qualifying degree and receives an officer's commission.

"The corps used to be the best-kept secret," said Lcdr. Alison Adams-McLean of NIDDK, "but over the last 5 years, we've become more visible. As the needs of the nation changed, the need for our specialties increased and the government started looking at us as being able to help." Before joining, Adams-McLean worked 16 years as an ICU nurse in the Clinical Center. "Say you're a nurse; you can continue to be [one] and do some public health service. That's the great thing about it."

After the tsunami and earthquake of 2004/2005, corps nurses were detailed from NIH to National Naval Medical Center to cover for nurses deployed to *USNS Comfort*, a hospital ship. The *Comfort* is currently visiting 12 Latin American and Caribbean countries; NIH's corps nurses—along with physicians, dentists and others—are on board.

"It's an age-old mission now being newly reemphasized," said Capt. Glen Stonebraker, an engineer with the Office of Research Facilities. He described career advantages to joining the corps: 20 years to retirement for 50 percent of base pay; 30 years for 75 percent; and "we get essentially free health care for me and my dependents at military health care facilities, the closest of which is the National Naval Medical Center. I've also gotten care at Walter Reed and other facilities.

"All four of my kids were born [at Navy]," Stonebraker continued, "and the biggest bill we got was for $27." Then there's the esprit: "For that, a function like this helps. In past years, you were always associated with your agency, but now there's increasing awareness that you're part of a force that has a larger national mission. It's a team."

The team includes more than 6,000 professionals, led by the Surgeon General. They are doctors, nurses, dentists, veterinarians, scientists, environmental health officers, engineers, dietitians, pharmacists, mental health professionals (including social workers and psychologists) and therapists (occupational, physical, speech and others). But unlike other uniformed services, this corps isn't armed. Officers serve throughout HHS, in agencies like the Indian Health Service, CDC, FDA and NIH, as well as other federal agencies.

Cdr. Doris Ravenell-Brown, corps liaison officer at NIH, said this would be the first of many events. "We used to have a visibility problem—we used to be 'the few, the proud, the unknown.' We are working to change that."

She paused to call out a winning raffle prize: a month's free pass to the gym. Couch potato advisory: the corps has an ongoing fitness requirement.

Ravenell-Brown herself was clad in gleaming summer whites. "I proudly wear my uniform every day," she said. "When I stop off at the grocery store, people ask if I'm in the Navy. I tell them, 'No, I'm in the Commissioned Corps and our mission is promoting, advancing and protecting the nation's health.' I wear my uniform because I'm proud to be a commissioned officer and, more importantly, to serve the people in our nation."

Teenager in Clinical Trial Raises Money for Eye Research

By Arthur Stone

April Walker, 18, has battled an eye disease called uveitis for the past 7 years. But she hasn't let that slow her down. She has raised more than $10,000 for the Ocular Immunology and Uveitis Foundation by organizing a fashion show and raffle at Susquehannock High School in Glen Rock, Pa., from which she recently graduated. She has also established a local support group for people with uveitis.

Uveitis is a condition in which the eye's pigmented middle layer—the uvea—becomes inflamed. The causes vary, but in most cases the body's immune system attacks the eye, causing sight-threatening inflammation. Childhood uveitis accounts for 5 to 10 percent of all patients with uveitis. The most common type of non-infectious childhood uveitis associated with a systemic disease is juvenile arthritis-associated chronic uveitis, of unknown cause, that occurs in the front part of the eye. Therapies for childhood uveitis are often challenging.

Since October 2006, Walker has been in an NIH clinical trial for the treatment of uveitis associated with juvenile arthritis. Participants come to the Clinical Center once a month for a year to receive intravenous infusions of an immune-therapy drug called daclizumab. The principal investigator, NEI's Dr. Grace Levy-Clarke, said, "I am very pleased with the preliminary results."

Previous NEI research discovered that, in uveitis, T helper cells—a type of white blood cell that normally helps fight harmful bacteria and viruses—cause an immune response in the eye. They then found that the T helper cells that attack the eye have large numbers of interleukin-2 receptors on their surface. Interleukin-2 is a hormone that helps the body respond to infection. The IL-2 receptor activates the T helper cell and acts like an alarm bell to recruit other immune cells into the eye, causing inflammation.

Daclizumab, a type of human antibody cloned from a white blood cell, blocks IL-2 receptors and prevents the immune response triggered by T helper cells. Pilot studies with adult patients suggest that, in most cases, daclizumab may effectively replace other medications that suppress the immune system. NEI's experience with it began in the mid-1990s with Dr. Robert Nussenblatt, chief of the Laboratory of Immunology.

Walker has been treated with other therapies, but none has been effective in controlling her uveitis. About daclizumab, she says, "This is the first time in 7 years I have found a medication that successfully treats my condition without side effects." Some therapies can cause kidney dysfunction, glaucoma, osteoporosis, increased blood sugar, high blood pressure and weight gain.

Teenage uveitis patient and fundraiser extraordinaire April Walker (c) is flanked by NEI clinical trial coordinator Dominic Obiyor and principal investigator Dr. Grace Levy-Clarke.

In addition to holding fundraisers, Walker gives interviews and speeches about uveitis. She has been interviewed by local newspapers, and on radio and TV. The ongoing effort to "get the word out," she says, is her "coping method."

Walker enters Shippensburg University this fall to major in elementary education. Eventually, she would like to do public relations work for a nonprofit organization. If she does, she will have plenty of experience. In addition to her recent fundraising, she volunteered for several years with the Arthritis Foundation. She is considering making the fashion show an annual event to benefit uveitis research.

Grad Student Festival Set, Oct. 11-12

The NIH National Graduate Student Research Festival will be held Oct. 11-12. This is a recruiting effort that will bring 250 advanced graduate students to the Natcher Bldg. with the intent of placing them in postdoctoral positions in the Intramural Research Program. Competition to participate is intense; in 2006, 964 applications were received.

The festival includes poster presentations by festival participants; plenary sessions that address NIH and how it works, resources for postdoctoral fellows at NIH and experiences of former NIH postdoctoral fellows; scientific sessions highlighting research in the IRP; tours of campus and specialized research and clinical facilities; interviews with NIH investigators; and informal opportunities to interact with current NIH trainees.

The festival, organized by the Office of Intramural Training and Education, was conceived to publicize the postdoctoral research opportunities here. It has proven to be an effective mechanism for allowing NIH investigators to interview outstanding postdoctoral candidates face-to-face.

digest

Online Health Connections

The Internet remains a frequent first source for many Americans seeking general health and cancer information—even though the public's trust in online health material has declined. This news comes from a report, "Cancer Communication: Health Information National Trends Survey 2003 and 2005," part of the larger Health Information National Trends Survey (HINTS) supported by NCI. HINTS surveys the U.S. civilian adult population, assessing trends in the use of health information over time and studying the links among cancer-related communication, knowledge, attitudes and behavior. Among other findings, the new data show that use of the Internet for cancer-specific information remained relatively unchanged during the study period, but the number of people using the Internet to communicate with health care providers or provider offices—such as making appointments via email—increased from 7 percent in 2003 to 10 percent in 2005.

A new survey finds many Americans continue to go online first to seek information on cancer and general health.

Youth Bipolar Diagnoses on the Rise

Over the last decade, the number of doctor office visits by children and adolescents that resulted in diagnoses of bipolar disorder increased by 40 percent. Using data from a survey conducted by the National Center for Health Statistics, researchers—including NIMH scientists—also found that over those 10 years, the number of visits by adults resulting in bipolar disorder diagnoses almost doubled. The cause of these rapid increases is unclear; researchers say more information is needed on the criteria physicians use to diagnose the disorder in children and adolescents and how physicians arrive at decisions concerning clinical management. The study was published in the September issue of the *Archives of General Psychiatry*.

Genetic Links to RA and Lupus

A genetic variation that increases the risk for both rheumatoid arthritis (RA) and systemic lupus erythematosus (lupus) has been identified in a study conducted in part by NIAMS researchers and published in the *New England Journal of Medicine*. Researchers said that though these chronic autoimmune inflammatory diseases are believed to have a strong genetic component, identifying the relevant genes has been extremely difficult. This study's success is the result of scientists collecting and genotyping thousands of RA and lupus cases and controls. And though researchers do not yet know how exactly the disease-associated variant of this gene increases risk, they are excited to know that it plays a fundamental role in these autoimmune diseases which, if not well controlled, can lead to significant disability.

A 'Holy Grail' of Hearing and the Underestimated Fruit Fly

Finally, two findings from NIDCD. In a study published in *Nature*, researchers have shed new light on the hearing process by identifying two key proteins that join together at the precise location where energy of motion is turned into electrical impulses. This discovery has been called one of the "holy grails" of the field because, according to researchers, the better we understand the point at which a person is able to discern sound, the closer we are to developing more precise therapies for treating people with hearing loss. Also in *Nature*: researchers supported in part by the institute found that fruit flies detect and are attracted to the taste of carbon dioxide dissolved in water—like water found on rotting fruit or a glass of carbonated water. Since fruit flies have similar versions of many human genes, the research raises questions about whether people, too, may have the ability to taste CO_2 and other chemicals in food. This means our sense of taste—not to mention that of fruit flies—may be more complex than we realized.**—compiled by Sarah Schmelling**

volunteers

The phone numbers for further information about the studies below are 1-866-444-2214 (TTY 1-866-411-1010) unless otherwise noted.

Have Enlarged Gums?

Do you have enlarged gums and are you taking dilantin, cyclosporine or calcium channel-blockers? Take part in an NIH study.

HIV+ Volunteers Needed

HIV+ volunteers off anti-HIV medications, CD4+ count 300 or greater, needed for research study at NIH. Compensation is provided.

Adults with Neurofibromatosis

Adults with neurofibromatosis type 1 are asked to consider participating in NIH studies. All study-related tests are provided at no cost.

Do You Have Ankylosing Spondylitis?

Consider volunteering for an NIH research study. Compensation is provided.

Have Trouble Swallowing?

Are you 20-90 years old and have problems swallowing? Swallowing studies are being conducted at NIH. Transportation is available.

NIH Turner Syndrome Study

For girls and women with Turner syndrome—comprehensive evaluation (including cardiac, ovarian function) is offered at no cost to participants.

Fibroid Study Seeks Women

Women ages 25-50 suffering with fibroids are asked to consider participating in an NIH study. Compensation is provided. Refer to study 06-CH-0090.

Neck Pain Study Needs Volunteers

The Clinical Center's rehabilitation medicine department is seeking individuals with neck pain and healthy volunteers between ages 18-65 to participate in a natural history study of neck pain (02-CC-0245). Participation involves 4 monthly visits (about 1 hour each) for a comprehensive cervical musculoskeletal examination. No compensation is provided. Contact neckpainstudy@gmail.com or (301) 451-7514.

Anthrax Vaccine Study

NICHD is seeking healthy volunteers 18-45 years of age to participate in an investigational anthrax vaccine study (04-CH-0283) conducted at the Clinical Center. Medical screening will determine eligibility. Compensation will be provided. Call 1-800-411-1222 (TTY 1-866-411-1010).

NIA's Greig Receives Sato Award

Dr. Nigel H. Greig, who heads the drug design and development section in NIA's Laboratory of Neurosciences, is the 2007 recipient of the Sato Memorial International Award. The award is bestowed once every 2 years to a leading scientist in the U.S. who has made significant contributions to the fields of pharmacology, therapeutics and pharmaceutical sciences. Greig was honored at the 127th annual meeting of the Pharmaceutical Society of Japan, in Toyama. Established by the Yoshio Sato Memorial Fund, the award is jointly administered by the Foundation for Advanced Education in the Sciences and the Pharmaceutical Society of Japan. A pharmacologist with a background in medicinal chemistry and physiology, Greig is currently interested in the design and development of novel pharmacological tools and drugs to characterize and treat diseases prevalent in aging. His focus has been on neurodegenerative diseases, with particular emphasis on Alzheimer's disease. Ongoing research within Greig's program is focused on intervening in biochemical cascades leading to cell death that are common in a number of degenerative diseases. He heads the drug development team, a multidisciplinary group that aims to bridge medicinal chemistry with neurobiology and pharmacology. His team's work has resulted in the development of several agents from concept in the laboratory to the bedside.

Meet International Extramural Associates, Class of '07

Members of the International Extramural Associates Program summer 2007 class were recently introduced to the program and greeted by NICHD deputy director Dr. Yvonne Maddox (front, l) and program director Dr. Regina James (front, r). The program was created to promote the entry and participation of women and underrepresented minorities into biomedical and behavioral research. Extramural associates from domestic and international institutions come to NIH to learn about its grants process and to help develop a research infrastructure for their respective institutions. The new EAs include: (second row, from l) Dr. Jillian Inouye (Hawaii), Henry Tumwijukye (Uganda), Dr. Camellia Okpodu (Virginia), Dr. Nancy Devino (Georgia); (third row) Thuo Peterson Kariithi (Kenya), Dr. Jeffrey Pickens (Florida), Dr. Leonard Holmes (North Carolina), Dr. Lynette Horn (South Africa); (fourth row) Marimuthu Thirumani (India), Ganesh Aylur (India) and Dr. Brian McBurnett (Texas).

seen

Camp Fantastic Barbecue Raises $3,000

This year's Camp Fantastic Barbecue, held recently on the Bldg. 31 patio by the NIH Recreation and Welfare Association, raised $3,000 and featured perennial favorite band Streetlife (top and center r).

***Swinging for the fences**: With hopes of winning $100, one of many BBQ attendees (center, l) takes a shot at breaking a glass window brought by vendor Windows Plus.*

***Time out for a photo:** The crew from Rockland's restaurant (bottom), which handled the grill duties, takes a moment from preparations to pose for the camera.*

PHOTOS: DAVID BROWNE