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nih record

NIH, NASA Partner for Health Research in Space

In a Sept. 12 ceremony in the U.S. Capitol, NIH and NASA signed a memorandum of understanding that will help American scientists use the International Space Station (ISS) to answer important questions about human health and disease. NIH director Dr. Elias Zerhouni and NASA administrator Dr. Michael D. Griffin welcomed a standing-room-only crowd that included scientists, senators and astronauts. Noting the agencies' strong record of collaboration and mutual interest in the life and health sciences, Zerhouni and Griffin signed a pact to collaborate on space-related health research.



NIH director Dr. Elias Zerhouni and NASA administrator Dr. Michael D. Griffin sign an agreement making U.S. resources on the International Space Station available for NIH-funded research. Sen. Kay Bailey Hutchison (l), Sen. Barbara Mikulski and NIAMS director Dr. Stephen Katz witness the occasion.

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'Tomorrow's Medicine Today' Zerhouni, Directors Bring NIH Research To New TV Series

By Belle Waring

NIH director Dr. Elias Zerhouni and the institute and center directors are bringing the agency's research to the public in their homes through a new televised health series, *Tomorrow's Medicine Today*. Zerhouni is guest-co-hosting these programs with 16 shows already taped at Montclair State University studios in New Jersey.

"It's like a Charlie Rose format, a discussion around a coffee table," says Zerhouni. He shares hosting duties with Dr. Naomi Weinschenker, whose specialty is child and adolescent psychiatry and who has been a television medical reporter.

Each show provides interviews with IC directors who have also invited extramural scientists to join them and to present their research in lay terms for a general audience. To be aired twice monthly on the Medical Missions for Children's (MMC) Medical Broadcasting Chan-

SEE TV SHOW, PAGE 4



Christy Dewitt of #86 Derminators takes the baton from Garrett Dejesus (c) as Ashesh Thaker of team #85 Hughes Your Daddy (l) dashes past.

What's in a Name?

Annual Campus Relay Gets Competitive, Creative Juices Flowing

By Carla Garnett

There's always more than one competition during the annual NIH Institute Challenge Relay. There's the run, of course, but there's also the challenge of adopting the wittiest name. This year's race, held on Sept. 20, did not disappoint. Although no prizes for this genius are awarded, its creative process bears examination.

For some teams, it's just a matter of working

SEE RELAY, PAGE 6



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briefs



Tabakoff Gives Keller Lecture, Oct. 30

Dr. Boris Tabakoff will give the 2007 Mark Keller Honorary Lecture on Tuesday, Oct. 30 at 1:30 p.m. in Lipsett Amphitheater, Bldg. 10. Tabakoff is professor and chairman, department of pharmacology, University of Colorado School of Medicine in

Denver. His talk is titled "Why Mice, Rats and Some Humans Drink Alcohol: A Neurobiologic/Genomics Perspective." NIAAA established the lecture series as a tribute to Mark Keller, a pioneer in the field of alcohol research. The Keller lecturers are researchers who have made significant and long-term contributions to our understanding of alcohol's effects and how alcohol problems can be prevented and treated.

Annual Leave: Use It or Lose It

Annual leave in excess of the maximum carryover balance (in most cases 240 hours) is normally forfeited if not used by the end of the current leave year. If you have not already planned to take those excess hours of annual leave, you should discuss your leave with your supervisor now while there is still time to schedule it. Your bi-weekly Leave and Earnings Statement tells you how much annual leave you must use so that you will not lose it when the leave year ends on Saturday, Jan. 5, 2008.

In spite of planning, circumstances sometimes arise that prevent you from taking leave that has been scheduled and approved earlier during the leave year. In such cases, you and your supervisor are jointly responsible for ensuring that any "use or lose" leave is officially rescheduled. This year, your "use or lose" leave must be scheduled not later than Saturday, Nov. 24.

If you or your supervisor have questions about "use or lose" leave, contact your administrative officer.

NIDA's Volkow To Speak, Oct. 23

NIDA director Dr. Nora Volkow will give the third lecture in the Anita B. Roberts Lecture Series: Distinguished Women Scientists at NIH, sponsored by the NIH women scientist advisors committee and ORWH. Her talk, "Why Is It So Hard for the Addict's Brain to Just Say No?" will be held Tuesday, Oct. 23 at 1:30 p.m. in Lipsett Amphitheater, Bldg. 10. The lecture is open to all and will be followed by a question-and-answer session addressing career issues for women in science. Sign language interpreters will be provided on request.



NIH Goes Live on 'Take a Loved One to the Doctor Day'

NIH reached out to the Washington, D.C., community on Sept. 18 with "Take a Loved One to the Doctor Day," part of a national campaign spearheaded by syndicated radio host Tom Joyner of WMMJ/Radio-One (102.3-FM). Actress Vivica A. Fox (above) pitched in to promote the event. Joyner and his colleagues broadcast live from the lobby of Providence Hospital, interviewing ORWH's Dr. Vivian Pinn, NCI's Dr. Wortia McCaskill-Stevens, NICHD's Dr. Alicia Armstrong and NINDS's Dr. Richard Benson, among others. WMMJ also provided NIH with exhibit space in the hospital lobby, where visitor estimates topped 1,000. "Hopefully, we will be able to convince WMMJ to host the live program from the NIH campus next year," said Calvin Jackson, chief of NIH's News Media Branch. WMMJ, named the #1 R&B station in the country for 2006 by Billboard Magazine, reaches nearly 500,000 listeners weekly.



NIAID's Winter Medals at Games

NIAID program officer Dr. David Winter (l) is a member of the U.S. national team and attended the 2007 International Dragon Boat Federation World Championship in Sydney, Australia on Sept. 20-23. He competed in the senior men's division and earned two bronze medals and one silver medal in the sprint races.

Inflammatory Response Is Focus of Stetten Lecture

By Karin Jegalian

The finely balanced actions of the immune system protect people against everything from viruses to parasitic worms to cancer. Yet, as research in the last 30 years has shown, the immune system can also be a menace. Overproduction of signaling proteins called cytokines can lead to harmful inflammatory responses ranging from chronic conditions like rheumatoid arthritis and inflammatory bowel disease to life-threatening crises such as septic shock.

“We wouldn’t be healthy if evolution hadn’t conferred on us the ability to restrain the potential damage from cytokines,” says Dr. Kevin Tracey, director of the Feinstein Institute for Medical Research and president of the North Shore-LIJ Graduate School of Molecular Medicine.

Tracey will discuss his work on mechanisms that curb the inflammatory response in this year’s DeWitt Stetten, Jr. Lecture, titled, “Physiology and Immunology of the Cholinergic Anti-inflammatory Pathway.” The talk, which is part of the NIH Director’s Wednesday Afternoon Lecture Series and is sponsored by NIGMS, will be held on Wednesday, Oct. 24, at 3 p.m. in Masur Auditorium, Bldg. 10.

“What my colleagues and I have been studying is that the nervous system can be an off switch to prevent cytokine damage,” says Tracey. “This caught us and everyone else by surprise.” Tracey and his coworkers discovered that the vagus nerve, which winds from the brain through the chest and abdomen to interact with many major organs, can check cytokine production and prevent immune-mediated damage to the body.

Tracey calls this circuitry the “inflammatory reflex.” Unlike signals that accumulate gradually through the bloodstream, the neurological reflex he has discovered can respond rapidly to restrain cytokine action and prevent shock. Tracey explains that the inflammatory reflex could be why treatments such as relaxation therapy, acupuncture and meditation—all activities that increase the activity of the vagus nerve—can work to counteract inflammation.

Tracey, who now devotes himself to immunology research, was a practicing neurosurgeon for 10 years. NIGMS director Dr. Jeremy Berg says Tracey “has shown great initiative in linking two



Dr. Kevin Tracey

complicated systems—the nervous system and the immune system.”

NIGMS program director Dr. Scott Somers commends the way Tracey has grounded his model with molecular evidence. “Any number of people in the past have put animals in stressful conditions and measured standard physiological outputs,” he notes. “Tracey went right to the mechanisms, right to the receptors.”

The firing vagus nerve is known to produce acetylcholine. Tracey showed that macrophages and other immune system cells respond to this signal with a specific type of acetylcholine receptor on their surfaces. “That he found nicotinic acetylcholine receptors on immune cells provides convincing support for the mechanism,” says Berg.

After extensive studies in animals, Tracey is starting clinical studies to see if increasing the activity of the vagus nerve in people can help control inflammation. In the future, he foresees that devices or drugs that stimulate the vagus nerve or interact with the signaling pathway could be used to treat inflammation.

A book Tracey has written for a general audience, *Fatal Sequence: The Killer Within*, recounts the hospital course of a former patient, a baby girl with severe sepsis, and connects her case to subsequent discoveries about septic shock. “The book reflects a real interest in—and gift for—communication,” says Berg. This gift extends into Tracey’s research presentations, adds Somers.

“To get to know patients leaves a mark on your brain and heart and soul, but it’s a gift to be able to work in a laboratory and discover new things,” says Tracey. “Doing research is impossible without a tremendous amount of support. It’s gratifying to work on problems supported by taxpayer dollars that can hopefully give something back to the public. This is a very special responsibility.”

Tracey has headed a laboratory at the Feinstein Institute for Medical Research and the North Shore University Hospital in Manhasset, N.Y., since 1992. He earned a B.S. in chemistry from Boston College in 1979 and an M.D. from Boston University in 1983. He completed his clinical training in neurosurgery at the New York Hospital-Cornell University Medical College in 1992.

His honors include election to the American Society for Clinical Investigation in 2001 and lectureships from the Karolinska Institute, Harvard University and Washington University in St. Louis, among others. Tracey is editor in chief of *Molecular Medicine* and advisory editor for the *Journal of Experimental Medicine*. He has authored more than 240 research papers in the fields of immunology and neuroscience. The Institute for Scientific Information named him one of the most highly cited researchers in immunology in 2005.

NIGMS has supported Tracey’s research since 1999.

For more information or for reasonable accommodation, call Gloria Hairston at (301) 594-6747. ●



TV SHOW

CONTINUED FROM PAGE 1

Scene from the set: NIH director Dr. Elias Zerhouni and the institute and center directors bring the agency's research to the public in their homes through a new televised health series, *Tomorrow's Medicine Today*.

nel, as well as weekly on New Jersey Public Television (PBS/NJN), the series could reach viewers in over 90 million homes in the U.S. and more than 300,000 academic and medical institutions worldwide.

Since any public television show requires a local sponsor, the program is seeking local affiliates. PBS/NJN reaches five states—New Jersey, New York, Connecticut, Pennsylvania and Delaware—and has picked up 13 episodes so far, with an estimated 10 million viewers. The hope is that other stations will now join as partners.

In addition, the U.S. Armed Services Network has expressed interest in the series.

"This is the first time in my memory," says John Burklow, NIH associate director for communications and public liaison, "that NIH leadership has had an opportunity to talk at length about their research on television. Hopefully, we can add more taping dates to cover all 27 IC directors."

Each director is allotted 30 minutes per segment and four shows are taped during each trip to New Jersey. The last scheduled taping is set for Oct. 29.

"It's a brand new venture," says Zerhouni. "We are breaking new ground for everybody, the ICs and their communications directors. We have to take risks and see how things play out—so that's a good thing."

"We have an agreement with MMC to have the right to begin airing the series as each program

reaches its 1-year anniversary," says Burklow. "Those programs will have a long life on our web and help build our NIH-dedicated presence on outlets such as YouTube."

NIH has recently established its own sub-site within YouTube, the popular video-sharing web site where users view and share video clips. According to Nielsen/NetRatings, YouTube averages nearly 20 million visitors per month.

Creative credit for the series goes to Frank Brady, a retired General Electric executive who is founder and now chairman of Medical Missions for Children, a charity housed at St. Joseph's Children's Hospital in Paterson, N.J. MMC productions include the Telemedicine Outreach Program, a global satellite and Internet TV network, as well as four television programs for the general public, *Tomorrow's Medicine Today* among them.

So far, segments have been taped by: NCI's Dr. John Niederhuber; NHLBI's Dr. Elizabeth Nabel; NIA's Dr. Richard Hodes; NIAAA's Dr. Ting-Kai Li; NIAID's Dr. Anthony Fauci; NIAMS's Dr. Stephen Katz; NIBIB's Dr. Roderic Pettigrew; NIDCD's Dr. James Battey; NIDCR's Dr. Lawrence Tabak; NIDDK's Dr. Griffin Rodgers; NIEHS's Dr. David Schwartz; NIGMS's Dr. Jeremy Berg; NIMH's Dr. Thomas Insel; NINDS's Dr. Story Landis; NLM's Dr. Donald Lindberg; and FIC's Dr. Roger Glass.

Each director was accompanied by another expert in the field, including intramural colleagues and extramural scientists from research centers, health centers, medical schools and schools of public health at Children's Hospital of Philadelphia, Columbia University, Cornell University, Johns Hopkins University, the Mayo Clinic-Rochester, Tufts University, the University of Connecticut, the University of Pittsburgh and the University of Utah.

As the world's largest public funding agent for clinical research, NIH has a roadmap with a compelling set of priorities, including translational science. *Tomorrow's Medicine Today* dovetails with that mission: translating NIH's most current research for the public television viewer.

The show began taping last winter and the first air date is scheduled for Sunday, Oct. 21, at noon. For updates, check local listings at www.NJN.net/television/schedules/. 17

Immunologist Beutler To Give Kinyoun Lecture

“The less you understand, the better forward genetics works,” says Dr. Bruce Beutler, describing the technique he has used to unveil fundamental actions of the immune system. Forward genetics starts when scientists observe a novel trait or appearance in a mouse or other model organism and then turn to the search for the responsible gene or genes. What this approach may tell us about how mammals detect infection is the topic of the 2007 Joseph J. Kinyoun Lecture. Beutler, of the Scripps Research Institute in La Jolla, Calif., will present his lecture Thursday, Oct. 25 at 2 p.m. in Lipsett Amphitheater, Bldg. 10.



At the core of immunology, notes Beutler, is the question of how we distinguish “self” from “non-self.” Ever since microbes were recognized as the cause of infectious disease, a corollary seemed obvious: plants, animals and people must have ways to sense and respond to invading (“non-self”) microbes. For example, says Beutler, researchers observed decades ago that mammals react swiftly and dramatically to injections of what was originally called endotoxin—a component of many bacterial cell walls now known to be a lipopolysaccharide (LPS). It was also observed years ago that some strains of mutant mice failed to react at all to LPS, he adds, implying that the mice lacked a sensor. But the identity of the putative LPS sensor remained elusive.

In 1998, Beutler, who was then at the University of Texas Southwestern Medical Center at Dallas, and his colleagues used forward genetics to explain the mutant animals’ inability to detect LPS. The researchers determined that the mice had mutations in the *Lps* gene, which eliminated the action of Toll-like receptor 4 (TLR4) protein and caused the mice to be insensitive to LPS. The finding, published in *Science*, was the first demonstration of an infection-sensing role for a mammalian TLR protein. The paper is regarded as a seminal contribution to understanding innate immunity because it revealed a way self and non-self are distinguished during the first minutes following infection.

Since moving to Scripps in 2000, Beutler has continued to explore TLR signaling and the functions of innate immunity via forward genetics. In his lab, the technique involves introducing random genetic mutations into the sperm of mice. By chance, these mutations result in mice with unusual characteristics, such as a heightened or lessened ability to respond to infection. Rather than starting with a

hypothesis such as “gene X might be required for normal immune function,” Beutler’s approach begins with an observation such as “this mouse has an unexpected immune response,” which drives the search for the mutation that gave rise to the unusual response and, by inference, can show which genes support a normal response.

Notes Beutler, starting with an observation rather than a hypothesis helps avoid bias that may arise through the tendency people have to favor hypotheses they create. To date, about 60 of the more than 150 transmissible mutations created by the Beutler team have been shown to affect immunity and about 20 of those were unpredicted by any other method. This fact highlights one of the best features of forward genetics, he said. “With forward genetics,” he observed, “you keep yourself open to the possibility of surprise.”

Beutler is chairman of the department of genetics at Scripps. Among his many honors are the Robert Koch Prize (2004), the William Coley Prize (2006), the Gran Prix Charles-Leopold-Mayer (2006) and the Balzan Prize (2007). 📍

NCI Scientists Recognized as Federal Employees of the Year

NCI scientists Dr. Douglas Lowy and Dr. John Schiller—who laid the biological foundation for the HPV vaccine—were given the Federal Employees of the Year Service to America Medal by the Partnership for Public Service on Sept. 19.

Rather than rest on their laurels, the two members of NCI’s Center for Cancer Research Laboratory of Cellular Oncology and their colleagues are already looking toward alternate ways of fighting or preventing cervical cancer, including the next generation of HPV vaccines and topical microbicides that might address some of the significant challenges of delivering a vaccine in developing countries, where it is most needed.

“The current vaccine has implementation limitations that will make it difficult for poor women to get it—and they’re the women who need it most because they have no Pap screening,” Schiller said. “It’s expensive to make and deliver this vaccine. We’re trying to make better approaches that are very simple to deliver.”

“We need to recognize that the vaccine is not going to do anything for the millions of women who are already infected with HPV and who remain at increased risk for cervical cancer,” Lowy warned. “The vaccine is for the next generations of women. But let’s not lose sight of the current generation and the need to help them reduce their incidence of cancer.”

“We are simply symbols of the many people who have made critical contributions to understanding the relationship between papillomavirus infection and cervical cancer,” Lowy continued. Both Lowy and Schiller are quick to point out that the recognition has been nice, but that they remain humbled by the insightful research done by so many of their colleagues. 📍



Dr. Douglas Lowy (top) and Dr. John Schiller are Federal Employees of the Year.



RELAY RACE

CONTINUED FROM PAGE 1

with the letters you're given. Take your IC's initials and, er, run, like these teams: C uS Run, To Run OER Not to Run, eNIGMaS, Over Early Racers, I'm ODD.

Some names incorporate the name of someone else, say the head of a section or lab: Wurtz Possible Runners (for NEI senior investigator Dr. Robert Wurtz), Gottesman's Gang (for NIH deputy director for intramural research Dr. Michael Gottesman), Blair Swift Project (for NIMH principal investigator Dr. James Blair) and Hughes Your Daddy (for NIH neighbor, Howard Hughes Medical Institute).

Or you can use your work to inspire you.

"I was one of the original founders of the Bolting Electrons, along with two other people," said Jeff Lengyel of NCI. "At that point in time we just thought [the race] would be a fun thing to do and a good excuse to do a little exercise outside of lab. My lab does cryo-electron microscopy, so my supervisor, Sriram Subramaniam, came up with the name Bolting Electrons. Our first year [2004], we came in a very impressive third place. The following year we also came in third. We were bolting indeed!"

Last year, Lengyel took a break from the Electrons to create a new team. For the last several years, he has been both an NCI postdoc and a grad student in a joint graduate partnership program with the University of Cambridge and NIH.

"I thought it would be good to start an annual Oxford/Cambridge relay race team because I thought it would be a good way to foster graduate student interaction," he explained. "We decided to call the team 'the Roundabouts' as roundabouts are common circular roads in England. The Roundabouts came in ninth in 2006, while the Bolting Electrons came in second. This year I returned to the Bolting Electrons and we came in second."

Former Electrons captain Rachid Sougrat of NICHD's Cell Biology and Metabolism Branch also changed squads. "This year I moved to another lab," he said, "and the name of my team is Goal G, since we work on the Golgi apparatus, an organelle that was first described by Camillo Golgi more than 100 years ago."

John E. Ingeholm of NIMH's Laboratory of Brain and Cognition noted, "Our team name [ROI] is a play on words of a step used in analyzing our neuroimaging data. Areas that are expected to contain activity based on a hypothesis are called 'Regions of Interest.'"

For the second straight year, OD's Office of Communications and Public Liaison—which handles the way NIH comes across to outsiders—chose Spin Doctors for its race handle. V "eye" P of NEI, FIC Globetrotters, Running with Immunity of NIAID and Catch Me if You Can-er were easier to figure out, but still clever ways of referring to work.

Quite a few groups describe the runners themselves in the team name.

"Velocity Raptors comes from the word 'velociraptor' and has nothing to do with our work in clinical research," explained Cathy Rehm, whose teammates all work in the NIAID 8th floor outpatient clinic in the CRC and also run informally apart from the NIH relay. "It has more to do with the fact that some of us are 'fast dinosaurs.' The name was decided upon prior to any of the members even suggesting that we would be participating in the NIH relay. Since we already had the shirts printed, and plenty of team members, we decided to use what we had already in place."

Then there are the names not even team members can explain.

"The name Supersonic Pancakes came to us in 2006," said Alexey Iskhakov of NLM/NCBI, remembering the details only vaguely. "There were two Russian women who formed a whole Russian team that consisted of Russian-speak-



Top left:
NIH director Dr. Elias Zerhouni (l) prepares to start one of two relay heats as racers take their marks.

Top right:
Race to the finish—Nick Knuth (r) of Biomechanicals just edges out Cameron Dezfulian of Nitrite XP for third place.

Above:
The Velocity Raptors' Mary McLaughlin hands off to Chad Koratich.



2007 NIH Challenge Relay Results Top 40

Place	Team #	Name	Time
1	84	Rapid Relaxation	13:54
2	09	Bolting Electrons	14:10
3	01	Biomechanicals	14:21
4	14	Nitrite XP	14:22
5	16	Spit Fires	14:29
6	68	Goal G	14:33
7	60	Wurtz Possible Runners	14:48
8	41	Proud Snail Hunters	14:57
9	62	Blair Swift Project	15:09
10	50	Decibelles	15:22
11	08	Catch Me If You Can-cer	15:39
12	80	Rate Limiting Steps	15:43
13	85	Hughes Your Daddy	15:48
14	69	Eyes on the Prize	15:54
15	22	Runners of Interest (ROIs)	15:57
16	79	Beauty and the Geeks	16:11
17	77	Five Women	16:15
18	87	Anything but Last Place	16:18
19	91	Long Legged Crazy Mental Runners	16:24
20	03	Ezruns	16:27
21	30	Kiss Meiosis	16:31
22	34	The Roundabouts	16:41
23	24	Clinic 8 Velocity Raptors	16:44
24	56	Cancer Chupacabra's	16:49
25	83	CD 5 Runners	16:50
26	35	FIC Globetrotters	16:51
27	88	Gottesman's Gang	16:53
28	06	Move Your Fatty Acids...Faster	16:55
29	26	Snot Docs	16:56
30	17	Apoptotic Buddies	17:01
31	42	The FastA's	17:05
32	12	The Running Buffers	17:10
33	82	Clot Busters	17:12
34	39	Racey Ears	17:13
35	52	Distortion Products	17:14
36	86	Derminators	17:16
37	07	Running With Immunity	17:29
38	65	Eye Ai Aie	17:30
39	29	Bad Breath All Star	17:31
40	02	Spin Doctors	17:36



Top: First place Rapid Relaxation (from l) Ava Asher, Tony Gill, Tyler Jones, Peter Bandettini and Eliana Bonifacino claim bragging rights in the 24th Institute Challenge Relay.

Middle: The 2nd place Bolting Electrons include (from l) runners Jeff Lengyel (NCI), Megan Dennis (NHGRI), Ari Halper-Stromberg (NCI), Patricia Zerfas (OD), Adam Bennett (NCI), NCI/LCB lab chief Dr. Michael Gottesman and LCB section chief Sriram Subramaniam.

Bottom: Taking 3rd place were Biomechanicals (from l) Vipul Periwal, Hollie Metcalfe, Will Heuett, Karen Ong and Nick Knuth.

Top: Isabelle Suffia (2nd from l) of V "eye" P takes the handoff from Arrash Yazdani (l); Snot Docs' Todd Wilson prepares to pass the baton to Nayoung Kim (r).

Middle: Zerhouni holds the standard for I'm ODD team members (from l) Tim Hays, Tom Gill, Ravi Sawhney, Penny Burgoon and Camelia Owen.

Bottom: Morgan Mandingo (l) and Nick McBride of the Roundabouts successfully negotiate the exchange.

ing people from the former USSR. I do not know how they invented that name. I think that it is better to ask them about it."

"'Pancake' was Sveta's contribution," interjected teammate Leonid Khotomliansky, clearing up (or further muddying) the issue. "'Supersonic' was a collective thought. I personally was trying to ban 'pancake' from the name, but failed and it stuck there eventually, which now seems to be a good thing. So I'm glad I failed that time."

Still researching the name's origin, Iskhakov added, "Seems that 'pancakes' is a free translation of the Russian word 'bliny'—Russian-style crepes." Okay.

As for the winners of the 24th Institute Challenge Relay, which consists of five loops around Bldg. 1 (and completed in two heats because so many teams registered), Rapid Relaxation finished first in 13:54.

"That was just about the course record," said Randy Schools, president of the R&W Association, which, along with NIH's former Health's Angels Running Club, manages logistics for the race.

The Bolting Electrons took 2nd place at 14:10 and the Biomechanicals rounded out the top three at 14:21. ●

PHOTOS: MICHAEL SPENCER, RICHARD WYATT, HILDA SCHULKE, ALLISON CHAUSMER

NIH AND NASA

CONTINUED FROM PAGE 1

The historic agreement has its roots in a meeting between NIH, NASA and other federal agencies in December 2006. At that meeting, NIH and NASA leaders began developing a strategy to make the U.S. portion of the ISS accessible to NIH-supported researchers.

Said Zerhouni, “I am extremely pleased that this collaborative effort is moving forward. The International Space Station provides a unique environment where researchers can explore fundamental questions about human health issues, including how the body heals itself, fights infection or develops diseases such as cancer or osteoporosis.” NASA’s Griffin remarked, “Not only will the station help in our efforts to explore the moon, Mars and beyond, its resources also can be applied for a much broader purpose—improving human health.”

NIAMS director Dr. Stephen Katz, who serves as NIH liaison to NASA and was one of the chief architects of the agreement, also emphasized the potential for research on the ISS. “The agreement signals to researchers the availability of a remarkable platform on which to conduct experiments. It will encourage the nation’s biomedical research community to develop innovative hypotheses that, when tested, will promote new understanding of fundamental physiology and benefit life on Earth.”

Also attending the ceremony to demonstrate their support for the NIH-NASA partnership were Senators Kay Bailey Hutchison (R-TX), Barbara Mikulski (D-MD) and Bill Nelson (D-FL). Hutchison, who was responsible for legislation that formally designated the U.S. portion of the ISS as a national laboratory, noted that “because of U.S. leadership, the ISS is becoming a global center for groundbreaking scientific research.”

The ceremony also included presentations by NICHD scientist Dr. Joshua Zimmerberg and former astronaut Col. Carl Walz (USAF, Ret.). The two collaborated on ISS research related to the human immune response almost 6 years ago; Zimmerberg’s laboratory continues to work closely with NASA on designing experiments for other ISS missions.

As part of the agreement, NIH will publicize the availability of the ISS as an environment

that can accommodate a variety of experimental approaches and can address a range of health-related research questions. NASA, in turn, will advise investigators on implementing NIH-funded projects, including the training of NASA astronauts who will conduct the experiments in space.

For more information on the NIH-NASA partnership, visit www.niams.nih.gov/News_and_Events/NIH_NASA_Activities/default.asp. 

Preusch To Steer NIGMS Biophysics Branch

Around NIH, Dr. Peter Preusch is known as an innovator in scientific program management, an advocate of basic science, past chair of the STEP committee and two-time “commodore” of the NIH sailing club. Now, he will also be known



as chief of the Biophysics Branch of the Division of Cell Biology and Biophysics at NIGMS.

Preusch joined the NIH community in 1990, serving first as a scientific review administrator in the Division of Research Grants (now the Center for

Scientific Review) and then as an NIGMS program official administering research and training grants in chemistry, biochemistry and pharmacology. Since 2004, he has been project team leader of the NIH Roadmap structural biology working group initiative to elucidate the structures of membrane proteins. While on detail from NIGMS to OER’s Office of Extramural Programs during 2006-2007, he served as acting NIH research training officer and oversaw NIH policy-related activities. Before arriving at NIH, Preusch taught chemistry and conducted NHLBI-supported research on vitamin K at the University of Akron in Ohio.

Over his 30-year scientific career, Preusch says, “The technology has developed radically—the tools are vastly better and allow a researcher to do so much more. But many of the most fundamental questions remain unanswered.” In his new post, he will help the biophysics community steer a course toward those answers.

Savvy Employees Win Contest



Congratulations to Name That Spot! winners, NICHD's Linda Lord (r) and Chanya Liv (see NIH Record, Aug. 24 and Sept. 7). The walking buddies' collaboration yielded a near-perfect score. "It really motivated Linda to get outside," Liv quipped. "We walked the whole campus," said Lord. "Plus it really made us stop and look at stuff, and that was neat."

Answers to Name That Spot!

1. Plaque commemorating the year 1926 (in Roman numerals) on Bldg. 15K
2. Plaque commemorating white oak at the corner of North Drive and Center Drive
3. Signs on the NIH shuttle
4. Atrium ceiling in the CRC lobby
5. Overhang in the garden area, CRC (clue to distinguish from front entrance: note building wing at right angle to overhang)
6. Top of Central Utility Plant facing Center Dr.
7. Detail on gutter, Bldg. 15K
8. Courtyard garden, Bldg. 12
9. Elevator, Bldg. 1
10. Banister on front steps, Bldg. 1
11. Cross-section of white oak in the display case in the CRC.

Meeting of NIH Director's Council of Public Representatives, Oct. 26

The 18th meeting of the NIH Director's Council of Public Representatives (COPR) will be held on Friday, Oct. 26 from 8:30 a.m. to 4:30 p.m. in Bldg. 31, 6th floor, Conf. Rm. 6. The meeting is open to the public. To view the meeting agenda, visit the COPR web site at copr.nih.gov/meetings.asp.

Learn to Conserve Energy, Resources

NIH uses the most electricity of any federal site in the metro D.C. area. Our combined water, gas and electricity bills are projected to total \$100 million for FY 2007.

So join others at NIH and jump on the bandwagon to conserve resources. Turn off your monitor when it won't be used for 30 minutes or more. You can set your computer to turn itself off during idle periods. Turn off the lights in unoccupied rooms. When washing labware or foodware, soak, don't let the water run unnecessarily.

In FY 2006, we consumed 704 million gallons of water. One million gallons of water would fill a swimming pool 267 feet long by 50 feet wide to a depth of 10 feet.

We burned 13 million therms of natural gas; 1 therm equals 100,000 BTU, or the heat content of 100 cubic feet of gas. An average home in the Midwest uses about 825 therms from October to March.

We used 465 million kWh of electricity. One 100-watt lightbulb on for an hour is 0.1 kWh. Running a 3,500-watt air conditioner for an hour is 3.5 kWh. An average 17-inch CRT monitor uses 80 watts per hour while a 17-inch LCD monitor uses 35 watts per hour. Even when turned off, monitors and many other appliances still use up to 10 watts per hour. The average fume hood uses 3½ times the energy of a house in a year. Keeping the sash closed when you're not using the hood is always safest for you and can reduce energy use by 30-60 percent.

NIH, like other research institutions, embarked on a program to identify areas where water and energy use can be made more efficient. For existing facilities, the NIH energy conservation program is as aggressive and comprehensive as any in government. It includes energy auditing and study to determine energy and water conservation opportunities, and subsequent contracting, construction and retrofit activities to install cost-effective energy, water and money-saving measures.

Since 2001, NIH has completed evaluation and subsequent construction of nearly 15 separate energy and water conservation projects, with several more currently in progress (Bldgs. 37 and 49, Research Triangle Park, Rocky Mountain Laboratories). These efforts have been estimated to result in savings of over 24 million kWh, 4,000 kW, 100 million gallons of water, 216 million BTUs of energy and an annual savings of nearly \$5 million.

Listed below are links to a few of our fellow research institutions' ambitious plans to preserve our planet for future generations, as well as conserve research dollars:

Harvard University's Green Campus Initiative: www.greencampus.harvard.edu/

UCSF Environmental Sustainability Committee: www.fm.ucsf.edu/ucsf_sustain_cmtte.html

Tufts University Climate Initiative: www.tufts.edu/tie/tci/

Sustainable Stanford: ssu.stanford.edu/

The Sustainability Council at the University of Chicago: sustainability.uchicago.edu/

A Greener Grounds at the University of Virginia: www.virginia.edu/sustainability/

Join the NIH GreenServ list (currently 175 members) and share your ideas with others in the NIH community. Sign up at list.nih.gov/archives/green-serve-1.html.—Dawn A. Walker



Researchers have found that more than 50 percent of current asthma cases in the U.S. can be attributed to allergies, with approximately 30 percent of those cases coming from allergy to cats.

Asthma, Allergies and the Family Pet

Bad news for Fluffy? NIEHS and NIAID researchers have found that more than 50 percent of current asthma cases in the U.S. can be attributed to allergies, with approximately 30 percent of those cases coming from allergy to cats. Published online in the *Journal of Allergy and Clinical Immunology*, the study used data from the Third National Health and Nutrition Examination Survey, a nationally representative sample of the population. Researchers point out that some exposure to cats, particularly in early life, may be a protective factor; they're not advocating that families find other homes for their pets. But if a child shows signs of cat allergies or has asthma-like symptoms, it might be time to talk to the doctor about the best course of action.

Disruption-free Pain Treatment

A combination of two drugs can selectively block pain-sensing neurons in rats without impairing movement or other sensations, such as touch. This finding, from a study funded by NINDS, NIDCR and NIGMS and published in *Nature*, holds great promise, researchers said, because the "Holy Grail" in pain science is to eliminate pathologic pain without impairing thinking, alertness, coordination or other vital functions of the nervous system. In the study, scientists found that a combination of capsaicin (the substance that makes chili peppers hot) and a drug called QX-314 could exploit a characteristic unique to pain-sensing neurons to block their activity without impairing signals from other cells. Most pain relievers for surgical procedures block activity in all types of neurons, which can cause numbness, paralysis and other nervous system disturbances. The combination took 30 minutes to fully block pain in the rats, but once it started, the relief lasted for several hours. This type of treatment has great potential for improving pain treatment during childbirth, dental procedures and surgery, researchers said.

Psychotherapy and Medication Best for Depressed Teens

Another strong combination: using psychotherapy and antidepressant medication together appears to be the most effective treatment

for adolescents with major depressive disorder. According to a study funded by NIMH and published in the *Archives of General Psychiatry*, the combination works better than either medication or psychotherapy alone. The major clinical trial, called the Treatment for Adolescents with Depression Study, was conducted over 36 weeks. When adolescents received fluoxetine, or Prozac, alone or in combination with cognitive behavioral therapy, they recovered faster than those receiving the therapy alone; taking fluoxetine alone posed some safety concerns. Researchers said the study provides compelling evidence that the most effective way to treat depression in teens is with a two-pronged approach.

Breast Milk Benefits Premies

According to an NICHD-led study, extremely low birth-weight premature infants staying in intensive care units who received breast milk shortly after birth had greater mental development scores at 30 months than those who didn't. The study, published in *Pediatrics*, also showed that the infants fed breast milk were less likely to have been re-hospitalized after their initial discharge. Researchers had long known that breast milk offered full-term infants benefits—such as lower likelihood of developing diarrheal diseases, skin allergies and ear infections—but its effects on preterm infants had not been well studied. The new findings strongly suggest that, whenever possible, preterm infants should be given breast milk while staying in ICUs.

What Hikers, Kids in Day Care Have In Common

Giardia lamblia, geneticists have your number. This bane of hikers who drink from mountain streams and of small children in day care is the most common intestinal parasite identified by public health laboratories in the U.S. But thanks to an NIAID-funded study just published in *Science*, we now have its complete genetic sequence. The strange-looking parasite swims in the gut, spreads through stool, persists in contaminated water and is responsible for more than 20,000 reported infections in the U.S. each year. Existing drugs can effectively treat people with *Giardia* infections, but there's still a concern that the parasite will develop resistance. The completed genome reveals a large complement of unusual proteins that could serve as targets for new drugs or vaccines.—compiled by Sarah Schmelling



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

NIH Pediatric Clinic, Allergy and Asthma Care

This is an allergy and asthma study for children ages 3 months to 19 years.

Totally Blocked Artery to the Arm or Leg?

Participate in an NIH clinical research study. Compensation is provided.

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 o6-CH-0090.

Women Needed for Study of Eating, Emotion

Women are needed for a study on eating and emotions. Volunteers must be ages 18 and up, nonsmoking and without major medical or mental health problems. Participation requires a single 1½-hour visit to the Uniformed Services University of the Health Sciences. Participants will be asked to watch a film segment, eat and fill out questionnaires. Blood pressure, heart rate and body composition will be assessed. Participants will receive compensation and feedback on body composition. For more information, leave a message for Robyn Osborn at (301) 295-9664 or email eatingstudy@yahoo.com.

2007-2008 Flu Vaccine Information for NIH Employees

The “Foil the Flu” Program begins Oct. 22. One way to minimize your risk of getting the flu is through immunization. Employees can receive a free flu vaccination at the times and locations listed below. Bring your NIH photo identification. Wear clothing that will let you quickly expose your upper arm. Non-federal employees should consult the DOHS web site www.foiltheflu.nih.gov/communityResources.htm for flu vaccination community resources.

On-Campus Schedule (Bldg. 10, 7th fl. atrium, east side)

<i>1st Letter, Last Name</i>	<i>DATE</i>	<i>A.M./P.M.</i>
NOPQRS	Monday, 10/22	8-11/1-3:30
ABCD	Tuesday, 10/23	8-11/1-3:30
EFGH	Wednesday, 10/24	8-11/1-3:30
IJKLM	Thursday, 10/25	8-11/1-3:30
TUVWXYZ	Friday, 10/26	8-11/1-3:30
EFGH	Monday, 11/5	8-11/1-3:30
TUVWXYZ	Tuesday, 11/6	8-11/1-3:30
NOPQRS	Wednesday, 11/7	8-11/1-3:30
IJKLM	Thursday, 11/8	8-11/1-3:30
ABCD	Friday, 11/9	8-11/1-3:30

Off-Campus Schedule

<i>LOCATION</i>	<i>DATE</i>	<i>A.M./P.M.</i>
TWN 3 12735 TB Pkwy. Rm. 2E06	Monday, 10/29	8-11/1-3:30
EPN 6130 Exec. Plaza Blvd. Rm. 103	Tuesday, 10/30 & Wednesday, 10/31	8:30-11/1-3
Rockledge 1 6705 Rockledge Dr. Rm. 5054	Thursday, 11/1 & Friday, 11/2	8-11/1-3:30
NSC 6001 Exec. Blvd. Conf. Rm.	Tuesday, 11/13	8-11/1-3:30
Poolesville, Rm. TBA	Wednesday, 11/14	9-noon

Open Clinic - OMS, Bldg. 10, Rm. 6C306

Open to All NIH Employees 11/26-30* 7:30-11/1-3:30

* Beginning 12/3, the flu vaccine will be available in OMS by appointment only. Call (301) 496-4411.

Program sponsored by Office of Research Services Division of Occupational Health and Safety, CC Occupational Medical Services, Hospital Epidemiology Service.



NIDDK's Dr. Lothar Hennighausen can now rightfully call himself an "ancien."

Science, Cycling Require Tenacity NIDDK Scientist Pedals His Way to 'Ancien' Status

Every 4 years in August, thousands of bicyclists descend on Paris to compete in an event called Paris-Brest-Paris, or PBP. The 1,200 kilometers (750 miles)—including 10,000 meters (30,000 feet) of elevation—are a challenge to human endurance. En route from Paris to the port city of Brest on the Atlantic Ocean and back to the French capital, riders face hills, adverse weather and round-the-clock cycling. Those who finish in 90 or fewer hours become *anciens* (or *anciennes*, for women) and have their names entered into PBP's logbook dating back to the first event in 1891.

NIDDK scientist Dr. Lothar Hennighausen joined more than 5,000 riders in a quest to finish this year's race. He considers the sheer will to overcome exhaustion, sleeplessness and foul weather—allegedly the worst in two decades of PBP—in order to complete the race a fair approximation of what scientists go through in guiding projects to completion.

"Almost 30 percent of the riders did not make it to Paris and were shipped back in overcrowded trains," he said. "I teamed up with a Belgian whose seven companions had dropped off and slept somewhere in the wet grass at the side of the road, trying to recover for the final stage. For hours we kept each other awake and shared food and stories. After 83 hours and 1,227 km, I pulled into the final *controle* (checkpoint) in Guyancourt (Paris). I had accomplished my most demanding project ever."

Hennighausen says, "The rules that govern success in ultra-long distance cycling and a research career are surprisingly similar—passion, focus, organization and tenacity, just to mention a few. Those traits can be placed into one simple category—resource management. Resource management is key to successfully conducting a scientific project as well as to finishing PBP in the allotted time."

A research scientist for almost 30 years and a principal investigator at NIH since 1985, he "applied the lessons I learned from my

professional passion to my life passion, cycling. I approached PBP as a scientific and engineering project, something I could relate to. In return, PBP taught me lessons about life, which I now apply to science."

His preparations included learning to repair his bike under any conditions and whipping his 55-year-old physique into shape by riding more than 5,000 miles since last January, including treks in the Appalachian Mountains and Bavarian Alps.

He estimates that he burned some 36,000 kilocalories in the course of the PBP, which required a "constant influx of easily digestible calories, water and electrolytes."

"Finding your own comfortable speed, which you can maintain forever even under difficult conditions is critical both for PBP and research projects," he observes. "The roads of Brittany were littered with cyclists who had failed to live by this rule, and the same is true in science."

He is especially grateful for the teamwork that can be common to both scientific and athletic pursuits: "It is comforting to know that colleagues on the same path are willing to pitch in—if they also benefit from the mission. On long flat stretches, you can draft off other cyclists and thus save energy, but you also must be willing to ride in the wind and pull others. If you are not a team player, you will always ride alone and face strong headwinds."

He concludes, "Passion, planning, focus and tenacity are vital ingredients to success. Without passion we would not enter new challenges, without planning we would not proceed, without focus we would not stay on track and without tenacity we would not finish."

"There are always dark hours during a 4-day bike race and in a scientific project and it is so easy to quit. Before you do, think twice or even three times. Failure might haunt you forever. In my experience, passion and tenacity will get you over the last hill or through the last experiment." 🚲