

nih record



ABOVE • NIAID's David Kosub passes the baton to teammate Cristi Cooper of NCI at the 27th Interinstitute Relay. See story below.

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Science's Hispanic Heritage

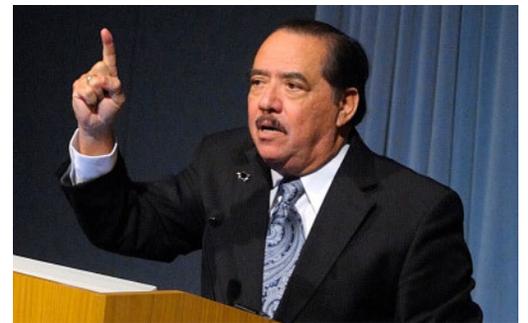
Medicinal Biochemist Rodriguez Underscores Latino Contributions to Health, Medicine

By Valerie Lambros

Dr. Eloy Rodriguez knows a thing or two about making one's way in the world. As a guest lecturer at NIH's observance of Hispanic Heritage Month, he told how his love of science and tremendous family support took him from an impoverished upbringing to the groundbreaking science he is conducting today.

Rodriguez grew up in a large family that included some 67 first cousins, a family tree so large "we had enough for two football teams with cheerleaders and people in the stands throwing beer cans at us," he told the Lister Hill Auditorium audience.

Born and reared in one of the poorest regions of south Texas, in an area he calls "Chicano land," Rodriguez grew up not bilingual, as one might suspect, but instead what he calls trilingual—knowing English,



Dr. Eloy Rodriguez at Lister Hill Auditorium

SEE RODRIGUEZ, PAGE 8

'No Cannot-Dos'

Pacific Island Students Find that Labs And Lab Coats Suit Them

By Amy F. Reiter

Through time zones, cultures and continents, Salefu Tuvalu left her native American Samoa to come to NIH to make her mark in the world of science.



Salefu Tuvalu

This summer, under a National Institute of Diabetes and Digestive and Kidney Diseases program designed to attract under-represented minorities to the medical sciences, the Idaho University student found that mark in NIDDK's Phoenix branch, where she worked to

SEE PACIFIC ISLANDERS, PAGE 4

Relay Race Draws Warm Crowd to Bldg. 1

The simplest way to determine which day in September will be the warmest and muggiest of the month is to find out when the annual NIH Interinstitute Relay is scheduled.

This year's race, on Sept. 23, conformed to the years-long tradition of being a sub-optimal day to run laps around Bldg. 1. Race-time temperatures hovered near a record high for the date.

But that didn't stop some 445 runners from competing in the 27th version of the event, which challenges 5-person teams including both men and women to run laps around Bldg. 1. The cumulative distance is about 2.5 miles.

NIH director Dr. Francis Collins, assisted by principal NIH deputy director Dr. Lawrence Tabak and R&W Board Chairman James Washington, started the first of two heats with a blast on a referee's whistle. Dr. Richard Wyatt, executive director of the Office of Intramural Research, started heat 2 and also acted as unofficial race photographer.

SEE RELAY RACE, PAGE 6



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briefs

Gallo To Give Chen Lecture, Nov. 5

Dr. Robert Gallo will deliver the fifth annual Philip S. Chen, Jr., Distinguished Lecture on Innovation and Technology Transfer from 10 a.m. to noon on Friday, Nov. 5 in Masur Auditorium, Bldg. 10. His topic is "Human Retroviruses: Perspectives from the Past, Prospects for the Future."

Gallo is director of the Institute of Human Virology and division of basic science at the University of Maryland School of Medicine. From 1965 to the mid-1990s, he worked at NCI, where he was head of the Laboratory of Tumor Cell Biology. Among his many accomplishments, including two Lasker awards, Gallo co-discovered that the HIV virus causes AIDS. His upcoming talk commemorates the 25th anniversary of development of the HIV diagnostic kit.

The annual lecture series honors Dr. Philip Chen for his almost 50 years of service to NIH. He established NIH's Office of Technology Transfer in 1986 to implement the Federal Technology Transfer Act.

Individuals who need sign language interpreters and/or reasonable accommodation to participate should contact Craig Woodside at (301) 496-0472 and/or the Federal Relay (1-800-877-8339). Requests should be made at least 5 days before the event.

NIH'ers Support 'Car Free Day'

NIH had 708 employees register for the annual Car Free Day held on Sept. 22. "NIH participants were 10 percent of the [total registrants in the] national capital region," said Joe Cox, program specialist in the Employee Transportation Services Office.

More than 6,900 residents of the Washington metropolitan region went car free or car-lite on Sept. 22, making it the region's most successful year yet in the celebration of alternatives to solo-driving, said the Metropolitan Washington Council of Governments. Registrants pledged to rely less on their cars by riding Metro, bicycling, carpooling, vanpooling, walking or teleworking.

Car Free Day is an international event celebrated in 1,500 cities in 40 countries throughout the world to encourage people to use more environmentally friendly transportation modes. Information about carpooling, vanpooling and employer commuting services can be found at www.commuterconnections.org and at the ETSO office.

Council of Public Representatives Meets, Nov. 5

The fall meeting of the NIH Director's Council of Public Representatives (COPR) will be held on Friday, Nov. 5 from 1 to 4 p.m. in Bldg. 31, 6th Fl. Conf. Rm. 6. This afternoon meeting is open to the public. To view the meeting agenda, visit <http://copr.nih.gov/meetings.asp>.

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. 1, 2011.

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. 20.

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

OppNet Public Meeting, Oct. 28-29

OppNet, NIH's Basic Behavioral and Social Science Research Opportunity Network, invites the NIH community to participate in a free, open meeting on future directions for this NIH initiative, "OppNet: Expanding Opportunities in Basic Behavioral and Social Science Research." It will be held Thursday-Friday, Oct. 28-29, at the Hyatt Regency Washington on Capitol Hill. Registration is free. For more information including the meeting agenda, visit www.regonline.com/OppNet.

Meeting participants will provide NIH with opinions on directions in the basic social and behavioral sciences. They will also explore longer-range issues in the field. Plenary sessions include OppNet co-chairs Drs. Jeremy Berg, Richard Hodes, Paige McDonald, Deborah Olster and OppNet facilitator Dr. William Elwood. For more information, visit <http://oppnet.nih.gov> or write infooppnet@nih.gov.

Schwartzberg To Give Roberts Lecture, Oct. 28

Dr. Pamela Schwartzberg will give the ninth lecture in the Anita B. Roberts lecture series. Her talk on "Integrating T Cell Signals" takes place Thursday, Oct. 28 at 1 p.m. in Lipssett Amphitheater, Bldg. 10. Schwartzberg is head of the cell signaling section in the Genetic Disease Research Branch, NHGRI. Her research uses genetic and biochemical approaches to study signal transduction in T lymphocytes and to determine molecules involved in their development and function. The talk is open to the public.

*Life-Death Decisions in Cells***Sorger To Give Stetten Lecture, Oct. 20**

For decades, scientists have demonstrated how tiny genetic changes and subtle shifts in the biochemical environment can lead to dramatic differences in how cells behave. But as they have increasingly been able to probe the actions of individual cells, researchers have found that even genetically identical cells in the same environment vary in how they develop and respond to biochemical signals or drugs. Such differences



in trajectory stem from the fact that there is some randomness built into biochemical reactions. According to Dr. Peter Sorger, a professor of systems biology at Harvard Medical School, understanding the causes and consequences of this randomness

requires a different approach to thinking about cellular biochemistry, one that involves a close coupling of mathematical modeling and experimental measurement.

Sorger studies the apparent paradox of how living things tolerate—and perhaps even exploit—randomness, when so much depends on the precise control of biochemical processes. He also studies how genetic differences and random fluctuations interact to generate physiologically significant changes in cellular phenotype and how these changes might alter responses to therapeutic drugs. Ultimately, he believes, these problems cannot be tackled with simple pictorial models, but require nuanced mathematical representations that assign probabilities to biochemical events.

Sorger will discuss his research into the pathways of survival and death in mouse and human cells during this year's DeWitt Stetten, Jr. Lecture, titled, "Measuring and Modeling Life-Death Decisions in Single Cells." The talk, part of the NIH Director's Wednesday Afternoon Lecture Series and sponsored by NIGMS, will be held on Wednesday, Oct. 20 at 3 p.m. in Masur Auditorium, Bldg. 10.

Sorger and his lab members develop and apply experimental and computational methods to study the complex dynamics of mammalian signal transduction. Their goal is to develop systems-wide models of cellular function that still

include detailed mechanistic insight.

Sorger was originally trained in biochemistry. He received an A.B. and Ph.D. in the subject, the former from Harvard University in 1984 and the latter from Trinity College in Cambridge, England, in 1987. He conducted postdoctoral research in cell and molecular biology with Drs. Harold Varmus and Andrew Murray at the University of California, San Francisco. Sorger has held his Harvard Medical School professorship since 2006. He has a joint appointment at the Massachusetts Institute of Technology, where he is a professor of biological engineering and has been a faculty member since 1994. In addition, he directs the Center for Cell Decision Processes at MIT, an NIH Center of Excellence in Systems Biology.

Sorger is a great believer in collaboration. He received one of the first NIH dual-principal investigator R01 grants. He helped found MIT's Computational and Systems Biology Initiative and the Council for Systems Biology in Boston, organizations that foster links among researchers from varied backgrounds to promote studies in systems and computational biology. He has also helped establish several companies including Merrimack Pharmaceuticals and Glencoe Software.

NIGMS has supported Sorger's research since 1994.

For more information or for reasonable accommodation at the lecture, contact Sarah Freeman at sarah.freeman@nih.gov or (301) 594-6747.—Karin Jgalian

Hood To Present 'Systems Approaches to Medicine, Cancer'

The National Cancer Institute's Office of Physical Sciences-Oncology is hosting Dr. Leroy Hood, co-founder of the Institute for Systems Biology and inventor of the DNA sequencer, on Tuesday, Nov. 2 from 3:45 - 5 p.m. in Natcher Conference Center. He will speak about the application of systems approaches to cancer research, interpretation of signal versus noise, the use of single-cell measurements, data integration and the current and future states of systems biology.

Hood's research has focused on the study of molecular immunology, biotechnology and genomics. Currently, he is pioneering the idea that the systems approach to disease, emerging technologies and powerful new computational and mathematical tools will move medicine from its current reactive mode to a predictive, preventive, personalized and participatory mode (P4 medicine) during the next 5-20 years.

To register for the seminar or ask questions, email nci.physics@mail.nih.gov. Registration, though not required, is encouraged. The event will be presented live at <http://videocast.nih.gov>.

NIH Hosts Scientific Conference on Lupus

NIAMS, NCI, NIAID and the Office of Research on Women's Health recently cosponsored "Systemic Lupus Erythematosus: From Mouse Models to Human Disease and Treatment." The 2-day meeting at Lister Hill Center brought together basic research scientists working on models of autoimmune disease relevant to systemic lupus erythematosus and clinicians treating lupus patients. The conference will serve as a launch pad for gathering ideas regarding future steps needed to further lupus research and the use of mouse models. Organizers included (from l) Dr. Howard Young, NCI; Dr. Silvia Bolland, NIAID; and Dr. Juan Rivera, NIAMS.





PACIFIC ISLANDERS

CONTINUED FROM PAGE 1

Above:

Ten high school students from Guam visited in August to culminate their participation in NIDDK's Pacific Island/Alaska Native Summer Internship program. The students spent the summer researching in labs in Guam and then presented their findings at NIH during the annual Short-Term Education Program for Underrepresented Persons conference. The students are (bottom row, from l) Christina Vasques, Cynthia Zapatos and Jamie Pangelinan; in second row are (from l) Pollara Cobb, Katrina Quinata, Stacey Taman, Joseph Chargualaf, Anibelle Libranda and Josephine Meno. At rear is Andrew-Jerome Charfauros.

PHOTO: ERNIE BRANSON

identify genetic explanations for why an American Indian tribe in Arizona has higher rates of obesity and diabetes than many other groups.

With the help and mentoring of NIDDK researchers such as Dr. Leslie Baier, Tuvalu studied a gene, *ALMS1*, which previously had been shown to cause the rare genetic disorder Alstrom syndrome. Children with the syndrome are insulin-resistant and often develop type 2 diabetes. Tuvalu wanted to investigate whether inherited variations in this gene also have a role in diabetes or obesity among the tribe.

"I want to make a difference," she said after presenting her research to an assembly of other Intramural Student Internship Program participants and NIDDK scientists recently on campus. "This program is like—there are no 'cannot-dos.'"

Her program is one of three this past summer that hosted students from among the farthest reaches of American territories, Guam and American Samoa, in an effort to get more Pacific Islanders to consider medical science as a career and NIH as a destination.

"Pacific Islanders were totally underrepresented in biomedical sciences," said Dr. Lawrence Agodoa, director of NIDDK's Office of Minority Health Research Coordination, which sponsors the programs. "But they all deserve to be included in these programs and given opportunities that are available to all U.S. high school and undergraduate students in NIDDK programs."

Last year, the program's first, Tuvalu was one of two students from American Samoa participat-

ing. This year, while she's moved on to the college program, 10 high school students from the territory have swelled the ranks of the Pacific Island/Alaska Native Summer Internship program, researching close to home and then presenting together to Agodoa and others in Samoa.

In a separate NIDDK program, also in its second year, 10 students from Guam spent their summer doing research at the University of Guam before coming to NIH to present their research during a scientific session for the Short-Term Education Program for Underrepresented Persons (STEP-UP) in mid-August. Wearing crisp white lab coats, the students presented to peers from around the country and to NIH researchers and answered questions from their audience.

Stacey Taman was among the 10 Guamanian high school students who visited Bethesda, her first visit to the continental U.S.

She'd been interested in science since she was in junior high school and opened up a science textbook showing a picture of test tubes filled with chemicals. "It made me want to do that and learn what each one was, and just basically to become a scientist and do lab work," she said.

Taman spent her summer studying whether diabetes and ethnicity are risk factors for hepatitis C infection among end-stage renal disease patients on Guam. She found that hepatitis C infection is very common among Guam's indigenous population.

"The program has enhanced my interest in a science career because, through my research this past summer, I got first-hand experience on what the science field is about, and trying to get results was all so fun," she said. "This is a first step for me to be what I want to be."

For Andrew-Jerome Charfauros, the program helped him see the diversity of options he has for pursuing a career in science. He spent his summer studying patients in three hemodialysis centers on Guam. "My study was to establish the prevalence of diabetic end-stage renal disease (kidney failure) among the dialysis patient population," he said. "I found that 79 percent of all dialysis patients on Guam have kidney failure attributed to diabetes."

Charfauros believes the program, with its link to NIDDK's mission, will attract many students from Guam as news of the opportunity spreads. "Most of the families of Guam have family members afflicted with diabetes, digestive or kidney disease, so I'm more than certain that should this program be made well-known among the student body, there would be a greater interest than in any other area." ●

NHGRI Scientist Relishes North Sea Sailboat Race

By Valerie Lambros

For many people, an ideal vacation is one spent leisurely strolling through a new city or perhaps lolling in a hammock at water's edge, drink in hand.

Dr. Colin Fletcher, director of NHGRI's Knock-Out Mouse Program, decided neither of those scenarios worked for him. He spent 2 weeks of leave hauling 400-pound sails, getting splashed in the face and enduring bitter cold in the North Sea in a sailing race around Great Britain and Ireland.

For Fletcher, who's been sailing since he was a kid and has cruised extensively in the waters of Long Island Sound, this seemed the most natural of adventures. Captivated by feats of sailors like Sir Robin Knox-Johnston, an Englishman who in 1969 became the first person to complete a solo non-stop circumnavigation of the globe, Fletcher was alert for an opportunity to take part in a competition that would challenge him, but also let him keep his day job.

Discovering a call for crew to man a 68-foot clipper named the *Hull & Humber*, Fletcher jumped at the chance. The event, the Sevenstar Round Britain and Ireland Race, was projected to take no longer than 2 weeks. "I thought 'I have enough leave for that,'" he said.

In mid-August, Fletcher flew to England and met the 15 other people with whom he'd be working and sharing space on a boat with living quarters no bigger than a one-bedroom apartment. He also became grateful that, for him, sailing is a hobby and not how he makes a living.

"It's a tough life to be a professional sailor," he said. "Maybe you're helping out as a skipper for a retired couple's boat or maybe you're ferrying boats for people back and forth, but mostly you're bumming around on the docks looking for work. A lot of these guys don't know what their next job is."

Thankfully, he knew that his job, as well as that of the other hands on board, was to get the boat counter-clockwise around Britain and Ireland as quickly and safely as possible. Most everyone aboard was British and the crew came from all walks of life. The race began at the Isle of Wight and included classes for different boat sizes to make the race a fair fight.

All the drama associated with such a race seemed to come on the first day, Fletcher said, as some boats went out ambitiously with too



Above, Dr. Colin Fletcher (r) and crewmates aboard the Hull & Humber enjoy calm seas on a relatively balmy day. Below, the weather wasn't always so kind; the boat pitches hard in high waves in the North Sea.



much sail up for the windy start. At least one boat not only had sails torn, but also had to pull out of the race entirely as it was dismantled. After that day, the remaining boats spread out and Fletcher said he and his crewmates would occasionally see a dot out on the horizon reminding them that they weren't alone.

Life on board was a challenge as the pitching and rocking made sleeping, cooking and just being on deck a battle with bouncing waves. Fletcher found a way to keep his suspended bunk from slamming into the inner hull, but with no refrigerator on board there was little he could do about the food.

"The food was pretty awful. I mean, it was basically quirky British food," he said, noting that one crewmember's idea of having vegetables on a pizza was to dump canned peas on top. "Since we were so hungry it seemed delicious at the time," said Fletcher.

However, there were plenty of things that made up for the inconveniences, namely gorgeous sunsets and sunrises as well as dolphins that came near the boat. One unusual experience was sailing past a massive oil drilling field in the North Sea at night, the oil platforms looking like bizarre torches perched on the water as they burned off natural gas pulled up with the oil.

The taxing job of steering the boat was spread out among the crew in 20-minute intervals. On days when the winds were steady or calm, the on-duty half of the crew could rest above deck, ready to make any changes to the sails as needed. But on days when the winds were moving and changing rapidly, "in the worst case scenario, you're changing sails every hour to optimize aerodynamics," Fletcher said. That required all available hands to manage sails weighted down with brass rings and heavy material.

While the winning vessel, a boat specifically built for racing, completed the race in 5 days, the *Hull & Humber* finished after a respectable 12 days on the water. 📍



Blowing refs whistles to start the first heat were (from l) NIH principal deputy director Dr. Lawrence Tabak, R&W Board Chairman James Washington and NIH director Dr. Francis Collins.



OIR's Larry Chloupek of Gottesman's Gang raced for the second year in a row on crutches.



NIAID's David Kosub passes baton to Four Runners and a Slug teammate Cristi Cooper of NCI.

RELAY RACE

CONTINUED FROM PAGE 1

Above:

First place finisher *Awesome Team* includes (from l) Dimitre Simeonov, Michelle Zook, Nick Cardillo, Kasey Jividen and Jim Curry.

PHOTOS: ERNIE BRANSON

As in years past, NCI's Dr. Harold Seifried summoned runners to the starting line by playing "Call to the Post" on his trumpet.

Winning the race in a time of 14:02 was *Awesome Team*, captained by NHGRI's Dimitre Simeonov. In second place (14:09) was *Catch Me If You Can(cer)*, led by NCI's Frank Perna. Another NHGRI squad took third in 14:10: *It's In the Genes*, led by Eric Sause.

Best Costume winner was *Smooth Operators*, a team of Center for Information Technology employees who donned Mardi Gras masks and had the largest contingent of poster-bearing cheerleaders.

Best T-Shirts winner was *Pushing Our Gluteus to the Maximus*, which was actually three teams that managed to intersperse numbers as letters, in a kind of scientific notation, in the team logo.

Toughest Runner was very likely Larry Chloupek of OIR, who for the second year in a row completed the course on crutches. Just a few weeks before the relay, over Labor Day weekend, he completed his first half-marathon. On crutches.

Most Frequently Heard Comment: "Watch the cars! Get out of the road!" uttered by race volunteer George Gaines of NICHD, who struggled to keep dazed and distracted runners from veering into the single lane of traffic competing for space in front of Bldg. 1.—**Rich McManus**

Top Ten Finishers

Awesome Team	14:02
Catch Me If You Can(cer)	14:09
It's In the Genes	14:10
Proud Snail Hunters	14:13
Trippin' On Lactic Acid	14:26
TB or Not TB	14:27
Tract Stars	14:40
DA Figg Mob	15:17
Cell Death Tour 4	15:19
Push(1)ng Our Gluteus to the Maximus	15:47

Enter 'Exer-gaming'

Can Virtual Reality Help Improve Public Health?

By Emma Alterman and Ann Benner

Virtual reality technologies aren't just for recreation anymore. They have the potential to assist in positive health and lifestyle changes.

NIH recently held "Virtual Reality Technologies for Research and Education in Obesity and Diabetes," a conference to discuss use of these technologies to address the obesity and diabetes epidemics.

Sponsored by several NIH components—NHLBI, NCI, NIDDK, NICHD, the Office of Research on Women's Health and the Office of Behavioral and Social Sciences Research—and the Department of Defense's Telemedicine and Advanced Technology Research Center in Frederick, Md., the conference brought together obesity and diabetes researchers with experts who develop and use virtual reality (VR) technologies for other applications.

America's obesity and diabetes epidemics have become pressing public health concerns. With plate sizes growing and physical activity shrinking, it is increasingly important to understand what constitutes a healthy portion size and the nutritional content of the foods we consume.

Dr. Geri Gay of Cornell University developed a game in which participants receive a cell phone and then select an avatar (a graphical computerized representation of a person or animal) that appears on the phone. Participants sent pictures, via cell phone, back to analysts who monitored the content and quantity of each participant's diet. The avatar's "mood" changed in response to the quality of the individual's eating habits. For example, eating nutritious food produced a happy avatar, whereas poor eating habits yielded an unhappy avatar. Virtual reality enabled these participants to receive immediate positive reinforcement for their healthy eating habits, rather than dieting and having to wait 4 to 6 weeks to see a physical change.

In a system developed by Dr. Rachel Jones of the University of Utah College of Health, consumers navigate their way through a virtual grocery store where they can learn various facts about the foods they have selected, such as nutrients and water content. Jones explains, "This allows [for] a non-threatening environment to explore nutrients and foods."

Her shopping simulation encourages consumers to pay attention to what they select and introduces new or forgotten foods. It's a way for peo-

ple to begin "adopting habits because it's a no-pressure situation," and can offer information that a real grocery store does not provide.

Virtual reality technology has even created a new lexicon. For example, the combination of exercise and virtual reality is called "exer-gaming."

Presenter Dr. Ernie Medina of Medplay Technologies in Loma Linda, Calif., uses virtual reality games to engage kids who do not participate in traditional physical activity. "These kids don't look at physical activity and exercise as fun," he said, explaining that exergaming is another way to get children moving and exerting themselves without realizing they are exercising.

However, Medina clarifies, "Exer-gaming is not the same as being distracted from how boring [traditional] exercise is." It has the added components of playfulness and challenge that appeal to most children.

Virtual reality has also provided access to a population that researchers and clinicians had difficulty reaching before.

Rehabilitation is another area in which virtual reality can motivate patients. In the future, physical therapy programs could be brought into homes through VR systems. This added convenience for patients might improve adherence to therapy routines. Virtual reality is also creating other worlds, other universes in which people—though physically thousands of miles apart—can interact. In addition to providing a place where like-minded people can find one another, these worlds offer another setting to implement behavioral interventions.

Dr. Walter Greenleaf of InWorld Solutions explains that virtual worlds can be used for a variety of issues ranging from treating post-traumatic stress disorder (PTSD) to teaching social skills to people with Asperger syndrome or even providing therapy for children who have been abused. The worlds can be manipulated to provide more realistic stimuli than role play or discussions of hypothetical situations.

The "Coming Home" project led by Dr. Jackie Morie of the University of Southern California addresses PTSD. In this project soldiers returning from combat use a virtual island to relax, enjoy enrichment activities and interact with others whose problems are similar. Such a virtual environment could also provide a sense of community, with social support and resources, for those with diabetes or obesity.

Organized by NHLBI's Dr. Abby Ershow and co-chairs Drs. Skip Rizzo of the University of Southern California and Brian Wansink of Cornell University, the meeting showed that whether the problem is health, fitness or addiction, virtual reality can provide the motivation, means and foundation for healthy lifestyle changes. ●





RODRIGUEZ

CONTINUED FROM PAGE 1

Above:
Rodriguez met with an attentive group of youngsters from Wheaton High School following his talk in Lister Hill Auditorium.

PHOTOS: MICHAEL SPENCER

Spanish and the blend known as Spanglish. His family can trace its American roots back to the 1600s, another fact many people might not think upon meeting him, he says.

Rodriguez is professor of ethnobotanical medicine (the study of how people interact with plants) and pharmacognosy (the study of medicines derived from natural sources) at Cornell University. He speaks with a booming voice and is fueled by a passion for the medicine that can be found in the Earth's most powerful and beneficial flowers, herbs and food. He told the audience, which included dozens of students visiting from Wheaton High School, that he is inspired by the knowledge that some cultures, both current and long gone, have been working with these same plants for hundreds, perhaps thousands of years.

"In Mexico, over 500 plants are used for the treatment of diabetes," he said. "And they're still using the same plants that were used from the time of the Aztecs and before."

Modern medicine has found it mattered little that these earlier societies didn't have the benefit of microscopes and sterile working environments. Cited in books and passed down for centuries, these same plant compounds have been found to indeed be potent treatments against cancer, diabetes and malaria and many have been found to be effective insect repellents.

The vast majority of these treatments have been part of the caregiving portfolio of women since their discovery, as women are often the driving force behind many cultures' healing histories, he said. For him, finding cures in nature is a matter of chemistry.

"Did you know the Chinese were using penicillin 5,000 years ago?" he said. "Alexander Fleming isolated the compound, but it had been used for thousands of years. The beauty of penicillin is that it's a fungus that kills other bacteria. So, if you want to kill bacteria, you get it from a fungus."

Rodriguez emphasized that even when cultures met or clashed through invasion, slavery or war, what emerged was a blend of old and new practices to push forward the understanding of plant-based medicine. Examples can be seen in the nutritious bitter yams and okra brought by Africans in the slave trade to the Caribbean and America, as well as the natural resistance to smallpox developed by the indigenous people after the Europeans' arrival with the virus wiped out entire villages.

For Rodriguez, this blending of cultures in America is still ongoing. He showed a photo of a class of his graduate students, their faces indicating a broad spectrum of origins and cultural backgrounds; many of them he identified as children of multi-ethnic parents.

"It is this diversity, this beautiful diversity," he said as he urged the visiting students to study the photo and see themselves in the faces of the budding scientists. "This is the coming of America and this is why it is so important that you are represented in federal agencies and everywhere."

This same sentiment was raised at the start of the lecture by NIH director Dr. Francis Collins, who said he is eager to have more Hispanic scientists at NIH.

"The future of biomedical research depends on the best and the brightest coming forward and deciding to work in this exciting area at this exciting time," Collins said, adding that these new bright minds "come from all sorts of different backgrounds and we want to create a highway for those individuals to find their path forward and to become our next generation of innovators."

To this end, Rodriguez has become something of an activist to get more Latino students engaged in science. He mentors as many students as he can handle from all backgrounds, but still sees the number of minority students lagging behind their majority counterparts.

"I talk to a lot of Chicano students, Latino students, and they say 'We have no history in science, I'd rather go into business or something,'" he said. "I always tell them that the history of science goes way, way back even before the coming of the Europeans. We were already doing science here and everywhere else."

He added, "By 2050, Latinos will be 30 percent of the population. There are major health disparities in the Latino population in the areas of prenatal care, cervical cancer, diabetic amputations and heart attacks. We cannot allow these types of health disparities to exist. We need trained scientists." 🗣️

Flu Vaccination for Employees Starts in October

Once again, the flu vaccine will be available to NIH employees. The vaccine is free of charge, available to all employees and will be offered according to the schedule at right.

The main purpose for the NIH influenza immunization effort is to protect Clinical Center patients. Many of our patients are at risk for suffering serious, potentially life-threatening consequences of infection with influenza. As a result, the focus of the early stages of the immunization effort is to immunize workers who have face-to-face contact with patients.

Despite solid evidence that vaccinating health care workers protects patients from influenza, the U.S. health care workforce has a surprisingly low rate of influenza vaccination. In a concerted effort to promote patient safety and reduce the risk of hospital-based transmission of influenza, the Clinical Center's medical executive committee modified the flu vaccine requirements in 2008, making it mandatory for all NIH staff having contact with CC patients. Those unable or unwilling to be vaccinated by the Occupational Medical Service will be required to sign a declination form explaining their reason(s) for declining vaccination.

Since this policy was adopted 2 years ago, nearly 90 percent of staff with patient contact have been vaccinated against influenza, far above the national average.

The influenza vaccine for the 2010-2011 flu season contains the following strains recommended by the FDA's vaccines and related biological products advisory committee: A/California/7/2009 (H1N1)-like virus, A/Perth/16/2009 (H3N2)-like virus and B/Brisbane/60/2008-like virus. This vaccine provides protection against both seasonal strains and the pandemic H1N1 strain.

If you have questions about the influenza vaccine, call the Clinical Center Hospital Epidemiology Service at (301) 496-2209. The vaccine schedule is also available at <http://foiltheflu.nih.gov>.

Flu immunizations can be provided only to NIH employees. An NIH photo ID is required.

NIH 2010 Seasonal Flu Vaccine Schedule

On Campus

CRC 7th floor atrium, east side. The hours for all days are 8 to 11 a.m. and 1 to 3:30 p.m.

First Letter of Last Name	Date
TUVWXYZ	Monday, Oct. 18
ABCD	Tuesday, Oct. 19
NOPQRS	Wednesday, Oct. 20
IJKLM	Thursday, Oct. 21
EFGH	Friday, Oct. 22
ABCD	Monday, Nov. 1
IJKLM	Tuesday, Nov. 2
EFGH	Wednesday, Nov. 3
TUVWXYZ	Thursday, Nov. 4
NOPQRS	Friday, Nov. 5

Off Campus Sites

The hours for all sites except Poolesville are 8:30 to 11 a.m. and 1 to 3 p.m.

Location	Date
Neuroscience Center, TBA	Monday, Oct. 25
EPN, Rm. 103	Tuesday, Wednesday, Oct. 26-27
RKL I, Rm. 5054	Thursday, Friday, Oct. 28-29
Twinbrook 3, Rm. 2E06	Monday, Nov. 8
Poolesville 9-10:30 a.m. in 103 10:30 a.m.-noon in 110	Wednesday, Nov. 10

Walk-in Clinic, OMS, Bldg. 10, Rm. 6C306

Open to all employees on Nov. 9 and Nov. 12, 7:30 to 11 a.m. and 1 to 3:30 p.m. Beginning on Nov. 15, flu vaccine will be available in OMS by appointment only. Call (301) 496-4411.

Science and Engineering Festival Needs Volunteers

On Oct. 23-24, NIH will join more than 400 of the nation's leading science and engineering organizations in a 2-day celebration of science for families on the National Mall and on Freedom Plaza in downtown Washington, D.C. The event is designed to provide fun and interactive science activities for kids of all ages and their families. Many ICs and NIH staff will host hands-on activities to stimulate interest in a range of topics that include science careers, the brain, clinical research, nanotechnology and imaging.

Bring your family to exhibit booths, see NIH director Dr. Francis Collins on the main stage on Sunday or consider volunteering. NIH'ers are needed to help set up, provide logistical support and take down exhibits. The festival is free, open to the public and includes contests, exhibits and other events. For more information about the USA Science and Engineering Festival, visit www.usasciencefestival.org/index.php. For more information about serving as a volunteer, visit <http://science.education.nih.gov/SciFest-Volunteers>.

Possible Alternate Therapy for Adults with Poorly Controlled Asthma

A drug commonly used for the treatment of chronic obstructive pulmonary disease successfully treats adults whose asthma is not well-controlled on low doses of inhaled corticosteroids, reported researchers supported by NHLBI.



“This study’s results show that tiotropium bromide might provide an alternative to other asthma treatments, expanding options available to patients for controlling their asthma,” said acting NHLBI director Dr. Susan Shurin. “The goal in managing asthma is to prevent symptoms so patients can pursue activities to the fullest.”

NHLBI grantees have found that a drug commonly used for the treatment of chronic obstructive pulmonary disease successfully treats adults whose asthma is not well-controlled on low doses of inhaled corticosteroids.

According to the study, adding tiotropium bromide to low doses of inhaled corticosteroids is more effective at controlling asthma than doubling inhaled corticosteroids alone, and as effective as adding the long-acting beta agonist salmeterol. The results were published online Sept. 19 in the *New England Journal of Medicine* and presented at the annual congress of the European Respiratory Society in Barcelona.

Depression High Among Youth Victims of Cyber Bullying

Unlike traditional forms of bullying, youth who are the targets of cyber bullying at school are at greater risk for depression than are the youth who bully them, according to a survey conducted by researchers at NIH.

The new finding is in contrast to earlier studies of traditional bullying, which found that the highest depression scores were reported by another category of youth involved in bullying—bully-victims. Past studies on traditional bullying show that bully-victims—those who both bully others and are bullied themselves—are more likely to report feelings of depression than are other groups.

Traditional forms of bullying involve physical violence, verbal taunts or social exclusion. Cyber bullying, or electronic aggression, involves aggressive behaviors communicated over a computer or a cell phone.

“Notably, cyber victims reported higher depres-

sion than cyber bullies or bully-victims, which was not found in any other form of bullying,” the study authors wrote in the *Journal of Adolescent Health*. “Unlike traditional bullying, which usually involves a face-to-face confrontation, cyber victims may not see or identify their harasser; as such, cyber victims may be more likely to feel isolated, dehumanized or helpless at the time of the attack.”

The analysis of 6th through 10th grade students was conducted by Drs. Jing Wang, Tonja Nansel and Ronald Iannotti, all of NICHD’s Division of Epidemiology, Statistics and Prevention Research.

Addition of Immunotherapy Boosts Pediatric Cancer Survival

Administering a new form of immunotherapy to children with neuroblastoma, a nervous system cancer, increased the percentage of those who were alive and free of disease progression after 2 years. The percentage rose from 46 percent for children receiving a standard therapy to 66 percent for children receiving immunotherapy plus standard therapy, according to the study in the Sept. 30 *New England Journal of Medicine*. The randomized phase III clinical trial was coordinated by the Children’s Oncology Group, a national consortium of researchers supported by NCI.

Neuroblastoma is a cancer of the peripheral nervous system (found outside of the brain and spinal cord), and is responsible for 12 percent of all deaths due to cancer in children under 15 years of age. It is the most common non-brain solid tumor in children. Nearly 50 percent of patients with neuroblastoma have a high-risk form of the disease and have poor long-term survival despite very intensive treatment.

The previously established standard treatment for neuroblastoma uses high doses of chemotherapy to destroy as many cancer cells as possible. But this form of chemotherapy also destroys some normal blood-forming cells, so it is followed by giving back previously collected blood-forming cells to restore immune system function and blood cell formation.

A newer approach to cancer treatment is immunotherapy, which in this instance uses an antibody called ch14.18 to target a substance on the surface of tumor cells called GD2. The GD2 is expressed by cancers such as neuroblastoma but is also present on some normal nerve cells. Early-phase studies demonstrated the safety and activity of ch14.18 when it was given with other drugs that boost the immune system.

Ultramarathon Brings Challenge, Joy to NINDS Scientist

By Jan Ehrman

Envision pulling yourself out from under the covers one morning, say 4 a.m., and running from the NIH campus in Bethesda to Baltimore and back, only to run halfway back to Baltimore again. If you're like most folks, it's inconceivable. But a 100-mile trek was precisely what Jim Nagle accomplished when he and a few hundred other men and women (including a 73-year-old man) dashed through the hills and trails in a rural southeastern part of Vermont recently.

Pushing the limits of both endurance and will, Nagle, who manages a DNA sequencing facility serving both the National Institute of Neurological Disorders and Stroke and the National Institute of Mental Health, says he participated in the grueling ultramarathon "for the challenge and the fun."



NINDS's Jim Nagle runs past RFK Stadium in Washington, D.C., during the halfway point of the 2010 National Marathon.

Not that the 53-year-old Reston resident came unprepared. A veteran of a several prior ultramarathons and 33 regular marathon races (26.2 miles), including 10 Boston Marathons (1999-2008), Nagle completed the recent event in just under 28 hours. Of the 265 entrants, only a little more than half finished the 2010 Vermont Endurance Run.

While a regular marathon requires training to build endurance and conditioning, an ultramarathon provides the ultimate test for die-hard runners. But the unusual thing about the competition, according to Nagle, is that participants aren't competing with one another, but with the distance.

"The event requires a very high level of vigilance as to what is going on with your body, vis-à-vis your hydration level, energy levels, blisters, chafing, etc. Little problems must be addressed before they become big, debilitating problems," Nagle noted. "Chafing was probably my biggest problem. I went through a fair amount of Vaseline during the race."

An ultramarathon has been defined as any organized footrace that goes beyond the standard marathon distance of 26.2 miles. The most extreme race is one that takes place annually, starting in California and ending in New York (3,000 miles), accomplished in stages, at a rate of around 45 miles a day.

Distances aside, ultramarathon rules are usually fairly generous in that runners can govern their own pace, without penalty, providing they clear checkpoints within a certain amount of time. For example, they are permitted to take walking breaks, stop for drinks or even grab a nap (not uncommon in multi-day races).

But the activity can come with a price. Injuries from overtraining can occur, and during- or after-event ailments may include shin splints, muscle strains and soreness, knee and hip maladies, electrolyte imbalance and bladder tears/hematuria (blood in the urine). Further, dehydration,

hyponatremia (sodium depletion) and excessive caloric expenditure may arise during the challenge, as well as diarrhea, nausea and vomiting.

Also unpredictable is what, or whom, you meet along the way in long-distance competition. During his numerous jaunts, Nagle has seen lovers, a shooting star, a runner who had removed his running shorts (due to chafing), a bobcat, deer and a plethora of snakes and reptiles. In addition, he had the misfortune of running into a roaming spectator at the New York Marathon last November. And during a training run in July 2009, he found himself within striking distance of a bear. It happened while running solo in Shenandoah National Park. Fortunately, Nagle found that the bear was no more interested in getting to know him than he was in meeting the bear, so the encounter proved harmless.

Why take on such a mammoth endeavor? "It might seem hard to believe, but we do it for the fun, the challenge and for the camaraderie that exists between all of us," Nagle said. His Vermont escapade was particularly gratifying, he noted, since it involved athletes from 5 different countries (the U.S., Canada, France, Sweden and Germany) and was part of a fundraising event for Vermont Adaptive, which supports activities for children with disabilities.

The great Yankee catcher Yogi Berra once said that "baseball is 90 percent mental; the other half is physical." As for long distance races, especially a "mega-marathon," Nagle maintains that mental strategies are crucial. When you set out on your first ultra, he said, the biggest difference between it and a regular marathon is probably mindset. You must convince yourself to run much more slowly than normal. "Also, you need to be prepared for the mental slumps that are likely to happen, especially during the middle to late-middle stages of the race. Expect them and don't obsess about them," he advises.

"Once you get toward the latter stages of an ultra, the finish time begins to seem much closer and your spirit seems to rally. You start to believe it will be over soon."

Are you ready to hit the trails? Not so fast, says Nagle, who advises that anyone considering long-distance racing be a regular runner already—"which means you've already been examined by your doctor and been medically cleared to participate."

The NINDS scientist, who rides his bike regularly to and from the Bethesda campus and his home in Reston, has no desire to curtail his athletic pursuits anytime soon. His plans include a triathlon in Reston, the Marine Corps Marathon at the end of October and perhaps another ultra next year.

As for his overall ultramarathon experience, "It's one of the greatest things I've ever experienced," Nagle concluded. 🏃



For Jewel Foster of OD and her son, Jamar, participating in the event was an important family affair.

At NICHD's Infant Mortality Awareness 5K One Mother Speaks from Experience for Infant Health

To raise awareness about infant mortality, NICHD sponsored a 5K run-walk-roll on Sept. 16 in conjunction with Infant Mortality Awareness Month. Many NIH'ers showed up to loosen their limbs, learn from speakers including NICHD director Dr. Alan Guttmacher and then hit the trail, which circled the campus.

One participant's story, however, stood out on a day of mostly light-hearted camaraderie.

Jewel Foster couldn't wait to be a mom. Unfortunately, her first child couldn't wait either and arrived at just 22 weeks' gestation, slightly more than half the duration of a typical pregnancy.

Her due date had been Oct. 21, 1996, and the baby, Lamarre, was born June 21.

"It was a big shock. We didn't know anything about why he came early, we didn't know anything about premies, we didn't know anything about what 22 weeks' gestation meant," she said of herself and her husband. "And I didn't know until the neonatologist confirmed that at 22 weeks, he probably wouldn't make it through the night."

Neonatologists and NICU nurses in the Minneapolis hospital near where the Fosters lived had never seen a baby survive at earlier than 26 weeks. A baby born at 22 weeks was just unheard of.

"It was difficult, because they knew it was going to take a lot," said Foster, a program support assistant in the Office of the Director. "They kept telling me 'A baby born this young is going to have multiple complications.'"

Some hospital staff suggested the couple consider pulling the plug. The Fosters refused and stood firm in their faith—in God, in medicine and in the innate will to live that is in all of us.

In all, Lamarre would have 22 surgeries in his young life. The Fosters' son made it out of the



Clockwise, from above: Rodney Rivera of NICHD starts the walk with his 4½-month-old son, Matthew.



Zhensheng "ZZ" Zhang of NIDDK crosses the 5K finish line in exultant fashion.



Dr. Regina James (l), director of NICHD's Division of Special Populations, and her running partner husband Dr. Kirk James, a health scientist administrator with the Substance Abuse and Mental Health Services Administration, begin their 5K run.

PHOTOS: VALERIE LAMBROS

NICU and lived for 2½ years. He passed away due to kidney failure, something doctors determined was a result of the constant medication he required.

The experience, though devastating, gave Foster insight into an issue about which little is known. Until that time, it was believed that early births, complications and infant mortality were directly and almost exclusively linked with a lack of prenatal care, a low education level on the part of the mother, low income and poor access to medical professionals.

In Foster's case, none of that was true. A well-educated, middle-class working woman, Foster had the best obstetrician in the Twin Cities area, never missed a checkup and was diligent about taking care of herself while pregnant. The baby arrived early anyway. Her neonatologist and a co-author wrote about the Fosters' experience in the book *Before Their Time*.

Foster has since been invited to speak to church groups, community groups and is a spokesperson for the African-American Infant Mortality Coalition, which advocates for more research on this issue. In doing so, she helps dispel misconceptions about why some babies are born prematurely and hopes that science will soon provide an answer.

"My family's very involved and they know that it's a healing process," she said, hugging her 10-year-old son, Jamar. The Fosters also have another son, Joshua, 6. "This is part of our lives now."—Valerie Lambros