STEP Session Describes Health Challenges Of a Growing Population

By Harrison Wein

It’s not every day that you go to a session on the NIH campus and hear about melting ice in Greenland, population growth trends and international markets. But that’s exactly what attendees heard at the recent STEP forum “Food for Thought: Sustaining the Global Population.” The health of a growing world population is going to depend on strong cooperation between many different communities.

Lester Brown, president of the Earth Policy Institute, led off with a wide-ranging talk that provided a framework for the forum. While the world’s population continues to grow, he said, world grain stocks are now at about their lowest level in 30 years. Two major challenges to meeting the growing demand in the coming years will be falling water tables and rising temperatures.

Underground aquifers are recharged by precipitation, but many nations are pump-
OSE’s Free Film Festival Starts July 13

The Office of Science Education’s popular free film festival, Science in the Cinema, is back this summer from July 13 to Aug. 17. Each Wednesday evening, a film with a medical science-related theme is shown starting at 7 p.m. Following each film, an expert in the film’s subject area will comment on the science depicted in the film and answer questions from the audience. This year’s topics include amyotrophic lateral sclerosis, Alzheimer’s disease, infectious disease, alcoholism, history of cardiac surgery and end-of-life issues. The festival will be held at the American Film Institute Silver Theatre and Cultural Center in Silver Spring.

Tickets are free and are available on a first-come, first-served basis through the AFI Silver box office, day of show only. All films are shown with captions. Sign language interpreters will be available for the post-film discussions. For other reasonable accommodation, contact OSE at least 5 days prior to the event at moorec@mail.nih.gov, (301) 402-2470, or TTY (301) 496-9706. For speaker information and program details visit http://science.education.nih.gov/cinema.

NIH Director’s Awards Ceremony, July 14

All employees are invited to the 2005 NIH Director’s Awards ceremony on Thursday, July 14 at 2 p.m. in the Natcher Bldg. main auditorium. Awards will be presented in five categories: Director’s Award, Mentoring Award, Director’s Award for the NIH Roadmap for Medical Research, Commissioned Corps awards and EEO awards. Seating is on a first-come, first-served basis. Sign language interpreters will be provided. A reception will be held after the ceremony in the Natcher Cafeteria. Individuals with disabilities who need reasonable accommodation to participate in the event should contact the NIH Work/Life Center at (301) 435-1619; TTY (301) 480-0690.

Perimeter Security System Update

The NIH Perimeter Security System (PSS or “the fence”) is scheduled for activation in mid to late August. To keep the NIH community informed about the timeline, important issues and progress, the ORS Security and Emergency Response (SER) staff is launching a communications initiative to include email announcements, articles in NIH publications, presentations to building groups, postings to web sites and announcements on the NIH Highway Advisory Radio (1660 AM). Communications will increase as the activation date nears but information updates about the Perimeter Security System will be ongoing even after the fence is fully operational.

The NIH community advisory board for security, a trans-NIH committee, has worked closely with ORS to develop and review the PSS policies and procedures for employees, patients and visitors.

Watch for future notices about PSS implementation in NIH publications, global emails and on the SER web site: http://www.security.nih.gov. Still have questions? Contact the ORS Information Line at orsinfo@mail.nih.gov or (301) 594-6677, TTY (301) 435-1908.

NCCAM Online Continuing Education Series

The National Center for Complementary and Alternative Medicine has launched a new online Continuing Education Series in complementary and alternative medicine. The series offers health care professionals and the public the opportunity to learn more about CAM therapies and the state of the science about them through video lectures by experts in their fields. Health care professionals can earn Continuing Medical Education credits. The resource is available for free at http://nccam.nih.gov/videolectures.

NIH Sailing Association Open House

The NIH Sailing Association invites everyone to its open house on Saturday, July 23 from 10 a.m. to 3 p.m. at the Neff Marina located on Selby Bay, Mayo, Md. Would you like to learn to sail? Does the idea of racing sailboats appeal to you? Can you imagine being part of a group filled with skilled sailing instructors, enthusiasts and boat owners? Membership includes instruction, sailboats for charter, racing, cruises, parties and fun. Admission is $5 at the door and includes food and boat rides. For more information and directions, visit www.recgov.org/sail or www.selbybay.com.
Health and Fitness Expo a Success

Last month, local area shoppers got a dose of good health and fitness at this year’s Share the Health expo in Wheaton. The annual free NIH health and fitness event attracted thousands of shoppers at Westfield Shoppingtown, Wheaton (formerly Wheaton Plaza) who stopped to explore interactive health exhibits, health screenings, hands-on lab experiments, lab-art workshops and much more.

The shopping center announced that there were 35,000 shoppers on event day, said Walter Mitton of the Office of Community Liaison. “This number was a 25 percent increase from the Sunday before the NIH Expo. In other words, the NIH event attracted an additional 6,000 people to the mall. Westfield also invited us back for next year’s expo.”

Sponsored by OCL and the Recreation and Welfare Association, the event allowed attendees to learn what NIH really does, to see research results and to meet scientists and health specialists. Attendees had their blood pressure checked, were examined for skin, head or neck cancer and learned about their level of body fat. They also perused interactive exhibits. Many people met Holly Heart, a robot who answered their heart-health questions. They also learned how to find reliable health information on the Internet.

Children had lots of fun, as they suited up with lab coats and goggles and performed hands-on lab experiments. They participated in lab-art workshops and worked out in the giant Moon Bounce. Teens used the opportunity to explore the latest health-related computer games, to navigate an obstacle course with Fatal Vision goggles that throw off eye-muscle coordination to simulate intoxication and to scale the 30-foot rock-climbing wall.
ing their aquifers faster than they’re being recharged. Half the world’s people now live in countries where water tables are falling, Brown said, yet few governments seem to be paying attention. “What’s happening in Asia today with water is very similar to what happened in Africa with the HIV virus 15 years ago.”

Rising temperatures will also strain food production, Brown explained. The Earth’s average temperature is clearly rising, and heat interferes with crop production, particularly with the pollination process. For each degree Celsius rise in temperature above the norm during the growing season, Brown said, there is a 10 percent decline in grain yields.

But it’s more than just the direct effect of temperature that’s important. Brown explained that when sea ice in the Arctic melts, less sunlight gets reflected back into space and the sea absorbs more heat. “That is important,” he said, “because of its effect on Greenland and the enormous amount of ice in Greenland.” If that ice melted, it would raise the sea level 23 feet, Brown argued. That would not only inundate many of the world’s coastal cities; it would also inundate many of the rice-growing areas in Asia.

Brown said that economic trends are placing an additional strain on world food production. Using water to expand industrial output can yield a return up to 70 times greater than using it to produce grain. Industrial development creates a more profitable use for cropland as well. It also draws people from the countryside and away from labor-intensive farm work. This is what happened in Japan, he explained, and more recently in China, accounting for recent drops in grain production there.

Dr. Joel E. Cohen, who heads the Laboratory of Populations at the Rockefeller and Columbia universities, followed Brown’s talk by explaining global population trends in more detail. We can expect to add 2.6 billion more people to the world by 2050, he said. In comparison, the entire population of the Earth was only 2.5 billion in 1950. This works out to one city of a million people added each week for the next 45 years.

But while population growth is a problem, Cohen said, starvation and malnutrition are caused by more than just population growth. In fact, the world population growth rate peaked between 1965 and 1970 and has fallen by one-third from its high. The world now produces more than enough to feed everyone alive today an adequate diet.

Cohen reviewed the famine in Sudan in the 1990s as a specific example that people have interpreted as a population problem. “Does Sudan have a population problem?” he asked. Many other countries have been able to deal with their explosive population growth. Cohen described a range of environmental problems, crop management failures, market failures, and various political and cultural factors that all contributed to the famine in Sudan. “To look at this as a population problem alone misses the complexities,” he said. “Population problems intersect with the environment, economics and culture.”

Cohen pointed out that the demands of food production from a growing global population create health problems beyond producing and distributing enough food. “You can think of the human species as embedded in a food web of relationships with the species that it eats and the species that eat it,” he explained. “The species that eat us now aren’t so often lions and tigers anymore, he said, but infectious diseases such as malaria, tuberculosis and schistosomiasis.

One of his research interests is Chagas disease, which currently infects millions in South and Central America. People in Argentina keep chickens in their bedrooms to protect them from predators, Cohen explained. Insects feed on those chickens and also bite people and...
dogs, transmitting the parasite that causes Chagas from dogs to people. "There’s a close connection between the food production and the infectious disease."

Another example of this connection is avian influenza in Asia, which has been of global concern recently. "The taking away of wetlands for rice lands," Cohen explained, "meant that migratory wild fowl had to use rice fields for their stopovers and defecated into the water, transmitting avian influenza to domestic fowl." People then catch the disease from their domestic fowl. "So there’s such an intimate connection between what we eat and what eats us," he said. "We can’t get away from that connection."

Cohen explained how factors beyond having enough food affect the health of a growing world population. Dr. Rebecca Nelson, program director for the McKnight Foundation Collaborative Crop Research Program, took up the topic by describing the recent shift in mentality in the international agricultural research community. Until recently, she explained, researchers were focused mostly on producing more food. They are now asking, "Is it really production that we’re trying to achieve or is it healthier children?"

Nelson said there’s been a shift from production-oriented research toward nutrition-oriented and livelihood-oriented research. She gave as an example a project in East Africa to address vitamin A deficiency. Breeding sweet potatoes to be rich in vitamin A yet culturally acceptable was a serious challenge. "People don’t necessarily love the fact that you’ve just turned their staple crop orange," she said. But when research programs are combined with nutrition education, they can effectively improve the health of the people they are intended for.

"You need an integrated approach if you want to make a change," Nelson said. "We ignore culture and preference at our own peril." In this case, she said there was an impressive collaboration between the agriculture, health and religious sectors. "They find that it’s acceptable to turn their food orange if and only if they understand that it’s good for their children," she explained.

Nelson gave many other examples of research programs guided by local and regional challenges. Traditional breeding techniques, newer transgenic technologies and other innovations like rotating crops throughout the growing season are all being employed to increase food security in areas with poor soils and harsh environmental conditions.

Rajul Pandya-Lorch of the International Food Policy Research Institute rounded out the session by outlining the economic challenges to food security. Availability of credit and access to markets are just as important to food security as increased food production, she explained. Health is also a major factor. "Health, agriculture, poverty and hunger go hand in hand," she said.

Pandya-Lorch argued that while the world has focused on HIV/AIDS, malaria and tuberculosis are also devastating health crises; even less acknowledged are those health conditions that don’t lead to mortality but sap people’s health. "Chronically ill people are people who cannot take advantage of whatever technological advances you provide to them," she said. "You cannot blame people for being poor and food-insecure if you don’t also address the health issues," she stressed, thus highlighting NIH’s role in this picture.

The speakers described creative ways that researchers and policy makers are addressing the problems they had described. Pandya-Lorch spoke about the renewed international focus on investments in education, social services and infrastructure. Nelson spoke about farmer participation in a range of research programs, both to improve local crops and to find creative ways to bring new crops into stressed areas. Brown described innovative dairy marketing cooperatives in India, efficient beef production methods in China and an ingenious method of aquaculture that has significantly boosted China’s output in an efficient, environmentally friendly way.

Pandya-Lorch stressed, "There is nothing that prevents us from being food secure if we put our will to it and our resources to it."

She observed of the effort in Africa, "You’re finally beginning to see a critical mass of people from various sectors engaging in these issues. It is not just little pockets anymore." The research communities, policy communities, media and various civil groups are all working together to combat hunger and poverty, she said. "And that gives me more hope than I’ve ever had before."
to raise awareness of the number 1 killer of American women.

More than 200 guests attended the unveiling, including NIH director Dr. Elias Zerhouni, Jacalyn Leavitt, wife of HHS Secretary Michael Leavitt; Alma Powell, wife of former Secretary of State Colin Powell; Joyce Rumsfeld, wife of Secretary of Defense Donald Rumsfeld; Karyn Frist, wife of Sen. Bill Frist; Mary Bunning, wife of Sen. Jim Bunning; Debbie Dingell, wife of Rep. John Dingell; Jan Donaldson, wife of former ABC News anchor Sam Donaldson; and Kathleen Matthews, news anchor for WJLA ABC 7.

Opening the event was NHLBI director Dr. Elizabeth Nabel, who introduced the exhibit video. The video featured a montage of images of each of the First Ladies in red outfits, a clip of Mrs. Bush speaking about heart disease, a selection of facts about heart disease, watercolor paintings and photographs of Washington, D.C., landmarks, and slow motion clips from the Red Dress Collection 2005 Fashion Show.

Kennedy Center President Michael Kaiser welcomed participants and expressed the center’s pride in joining America’s First Ladies and NHLBI in the fight against heart disease with a fashionable exhibit of awareness. Secretary Leavitt spoke of the importance of reaching women with critical messages on how to protect their heart health. “Only 20 percent of American women know that heart disease is the greatest single threat to their lives. So if you haven’t done so already, go see your doctor and get an assessment for your risk of heart disease. Take your sister, mother, daughter or friend with you,” said Leavitt.

Mrs. Bush, ambassador for The Heart Truth campaign, took the stage to unveil the First Ladies Red Dress Collection. She urged all women to know The Heart Truth—heart disease is the leading cause of death among American women—and to get started on the road to better heart health. “When it comes to heart disease, education and prevention can save lives. This collection is the First Ladies’ effort to remind women about heart health,” said Bush.

For the exhibit, Mrs. Bush provided her red Carolina Herrera suit, which she wore to the Bolshoi Theater in Moscow and to The Heart Truth’s Red Dress Collection Fashion Show 2005 in New York City.

Joining Mrs. Bush to unveil the exhibit was a special guest—Nancy Reagan. Her love of the color red is well known, and she often wore beautiful red gowns to White House and other noteworthy events during her tenure as First Lady. Reagan donated a red lace Oscar de la Renta evening gown, which she wore when President Reagan was presented with the Order of the Bath by Queen Elizabeth II in London in 1989.

The exhibit also featured red outfits from five other First Ladies. Sen. Hillary Clinton provided a mock turtleneck dress designed by Cliff Chally, worn to one of President Clinton’s major speeches to a joint session of Congress in 1993 and that same year on Valentine’s Day. Barbara Bush chose a red evening gown with gold floral overlay by designer Arnold Scassi that she wore while hosting a White House state dinner for the president of the Republic of Argentina in 1991. One of her famous strands of pearls was also displayed with the dress.
A double-breasted Lady Bowden suit was worn frequently by Rosalyn Carter during President Carter’s days in the White House. Betty Ford provided one of her favorites—a red crepe Neiman Marcus suit that she wore many times during her husband’s presidency. Lady Bird Johnson contributed a red evening gown, designed exclusively for her by Mary McFadden to wear at her 80th birthday celebration at the Lyndon Baines Johnson Library and Museum.

Accompanying the dresses was a photograph of each First Lady wearing the outfit on display and a personally signed letter supporting The Heart Truth. The exhibit also featured 11 designer dresses from the Red Dress Collection 2005.

The First Ladies Red Dress Collection remained on display on the Millennium Stage in the Grand Foyer of the Kennedy Center (which averages approximately 10,000 visitors every day) until the end of May. More information about The Heart Truth and the First Ladies Red Dress Collection can be found at www.hearttruth.gov.
SAFRA LODGE
CONTINUED FROM PAGE 1

NIH is.” He called the lodge “a remarkable tribute to our patients, but also to our spirit,” and said there is nothing more touching to him than the “interaction between doctors and scientists and patients, and the world of philanthropy.”

The lodge is an emblem of what’s great about our country, representing thousands of volunteer hours, the love of others and "an ability to think selflessly about others, about what will make a difference," he added. “Edmond Safra embodied this philanthropic spirit...he basically still lives through this lodge at NIH.”

Top:
Lodge benefactor Lily Safra (l) and Dr. Charles Sanders, chairman of the Foundation for NIH board of directors, listen to remarks at the recent dedication. Said Sanders, “The more we can spotlight such enlightened generosity, the more others may be inspired to be involved in new programs which support the NIH research mission—the cure of disease and preservation of human health.”

Middle:
Former Rep. Paul Rogers said “there’s something about this particular building—it’s exciting and touching.” He called it graceful and welcoming, and “beautiful, comfortable and practical on the inside...It touches the mind and heart, for we all know its purpose. It is a haven for families visited by distress...people who have staked their hopes on NIH research.”

Bottom:
Built in the style of an English Arts and Crafts manor, the Safra Family Lodge provides a home-like retreat by offering space for solitude, family meetings and supportive fellowship. It is surrounded by a lush garden (foreground). The project, from design conception to completion, has taken more than 6 years.
Keeping Things in Perspective

The pace of discoveries coming out of NIH these days is often hard to get your mind around. Those of us in offices here tend to get lost in conflict of interest issues, budget cuts and ethics problems. Even those at the bench can lose sight of the big picture.

It’s easy to lose perspective. People working in one field barely hear about accomplishments in others. Just in the past couple of weeks, we’ve seen a new vaccine for shingles, the finding that genetic variations affect your response to warfarin (a common anti-clotting drug), and the discovery of a link between complement factor H and age-related macular degeneration, the leading cause of blindness in people over 60. These are only the tip of the iceberg.

New large-scale research tools are bringing discoveries faster by the day. For example, at a recent Wednesday Afternoon Lecture, Dr. Stuart L. Schreiber from Harvard spoke about using chemical libraries of small molecules to dissect biological processes and identify new drug targets. He described ChemBank, a database supported by NCI’s Initiative for Chemical Genetics that has structures for more than 1.1 million compounds, 150,000 of which are commercially available, and biological activity data for over 6,300 known bioactive compounds (http://chembank.broad.harvard.edu/). PubChem, part of the molecular libraries Roadmap initiative, is another massive collection of chemical structure and screening data (http://pubchem.ncbi.nlm.nih.gov/).

Genomics (and all the related “-omics”), 3-D protein structure databases, high-throughput screening and countless other new tools and approaches are ushering in a scale of research far beyond what most scientists imagined a decade ago. NHGRI recently announced that it has selected the next 13 organisms for genomic sequencing. Those are only the latest; there are already several completed and a slew more in progress (check out http://www.genome.gov/10002154).

This column will try to highlight some of the interesting scientific developments at NIH. If you know of items we should include, write to weinh@od.nih.gov or call (301) 435-7489.—

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Retiree Rust Mourned
John Dorman Rust, Jr., 78, who worked for four institutes and retired from HHS in 1984, died May 26 from complications of diabetes. He was a long-time resident of Bethesda.

He was born in Baltimore and joined the Marine Corps briefly before being discharged with tuberculosis. He graduated from the University of Maryland with a B.S. in biology in 1953. He then went to work at the National Institute of Dental Research from September 1953 to 1955, studying dental caries in mice.

In 1955, he left NIH to pursue a graduate degree at the University of Maryland. In June 1956, he returned to NIH, working as a biologist at the National Institute of Arthritis and Metabolic Diseases; he studied traumatic shock and problems of infection following burn injury. In March 1959, after receiving his master of science degree in marine biology, he again left NIH to work for the U.S. Fish and Wildlife Service.

In early 1960, Rust joined the National Cancer Institute, where he worked briefly as a biologist. He then spent 3 years as an administrative assistant at NIAMD. In 1963, he transferred back to NCI where he was promoted to administrative officer. He was an AO at the National Institute of Mental Health for a number of years, then held a variety of administrative posts in government. From July 1978 until retirement, he served as deputy director of the Genetic Diseases Program, Bureau of Community Health Services, Program Office for Maternal and Child Health. He retired in 1984 with 30 years of federal service.

Rust received numerous awards during his career, including the Administrator’s Award for Excellence in 1983.

In his free time, Rust enjoyed the outdoors, photography, carpentry, ham radio, bird-watching and harmonica. He also indulged a love of dogs.

Rust is survived by his wife of 51 years, Jean Wheeler Rust of Bethesda; two daughters, Barbara Rust and Mary Rust, both of Bethesda; a sister, Marion Vanik of Baltimore; three nieces and two nephews.
Bluebird Nest Monitors Needed

Listen up, bird lovers. NIH is having great success this year with its project to attract mosquito-eating bluebirds to campus. “To date we have had five successful nests fledge a total of 25 new bluebirds,” reported Lynn Mueller, NIH landscape architect. “The second nesting is soon approaching. However, my volunteer monitors are thinning out and I sure would like to have more bird lovers to help check some of the campus boxes on a weekly basis or as time allows.” There are 50 boxes around the perimeter and anyone interested could monitor a dozen or so near their office or parking area, then report what they find to Mueller. For details, call Mueller, (301) 496-4817.

Healthy Volunteers Needed

Doctors at NIH are conducting a study that examines the tongue. Call 1-800-411-1222, TTY 1-866-411-1010. Refer to study 01-CC-0044. Compensation is provided.

Want To Quit Smoking?

As part of a smoking cessation research study sponsored by the National Cancer Institute, the department of psychology at American University is offering free group counseling for smokers who want to quit. The treatment entails meeting once a week for 90 minutes over 2 months. Participants must be regular smokers over the age of 18 who are interested in quitting. For more information or to sign up for a group, call (202) 885-1784.

Female Volunteers Needed

The Behavioral Endocrinology Branch, NIMH, seeks healthy female volunteers ages 40-50 to participate in longitudinal studies of the perimenopause. Volunteers must have regular menstrual cycles and be medication-free. Periodic hormonal evaluations, symptom ratings and occasional interviews will be performed. Subjects will be paid. Call Linda Simpson-St. Clair, (301) 496-9576 (TTY 1-866-411-1010).

Are You a Woman Who Has Been Depressed?

NIMH is looking for female volunteers to participate in a study that examines the role of hormones in depression. Participants should have experienced depression in the past but not be currently depressed, be between ages 18-45, be medically healthy and not be taking any medications, including birth control pills. Study includes thorough evaluations and compensation. For more information call Linda Simpson-St. Clair, (301) 496-9576 (TTY 1-866-411-1010).

Study of Ovarian Function

NIH invites you to participate in a clinical study looking at the function of the ovaries. Women between the ages of 18 and 25 are asked to call 1-800-411-1222 or TTY 1-866-411-1010, for information. Study-related tests or treatment are provided at no cost. Participants will be compensated. Refer to study # 00-CH-0189.
90th Meeting of NIH Director’s Advisory Committee Held

Top: NIH director Dr. Elias Zerhouni (c) gives report at the 90th meeting of the advisory committee to the director. Joining him at the table are (from l) Dr. Norka Ruiz Bravo, NIH deputy director for extramural research; Dr. Raynard Kington, NIH deputy director; Dr. C. Martin Harris, Cleveland Foundation; and Dr. Larry Smarr, University of California, San Diego.

Middle left: Giving the committee an update on research in her institute is Dr. Nora D. Volkow, director, National Institute on Drug Abuse.

Middle right: New member Dr. Tadataka Yamada, chairman, research and development on the GlaxoSmithKline board of directors, makes a comment.

Bottom: Several new members joined the advisory committee to the NIH director at its meeting on June 2. They include (standing, from l) Dr. David Botstein, Princeton University; Alexander R. Lerner, Illinois State Medical Society; Dr. Nancy E. Adler, University of California, San Francisco; Yamada; and (seated, from l) Wendy Chaite (Council of Public Representatives liaison) and Dr. Christine E. Seidman, Harvard University.