

Still The Second Best Thing About Payday

Database Promotes Sharing, Cost-Saving at NIH

By Rich McManus

When Ivo "Buddy" Wortman needed a large, 3-level gel dryer for the NCI laboratory in which he is a biologist, he could have hit up the company credit card for the \$12,000 that a new machine costs. But instead, the 15-year veteran lab technician consulted the Shared Resources Database, an online trove of lab and office equipment ranging from glassware to computers that has been operated since 1997 by the Office of Research Services. There Wortman found not only exactly what he needed, but also a model that was a year newer than the one he had been using. By simply notifying his administrative officer, who filled out the paperwork to complete the property transfer, Wortman soon had what his lab needed, at no charge.

SEE SHARED RESOURCES, PAGE 4

'Something You Should Do'

NIAID Explores the Many Faces of Transplantation

The statistics are compelling. More than 80,000 men, women and children are waiting for life-saving organ transplants, and thousands more are in need of bone marrow transplants. Every 13 minutes another name is added to transplant waiting lists, and every day 17 people die nationwide waiting for donor organs. To bring these statistics to life and to promote awareness of organ and tissue donation, NIAID convened a Transplantation Fair in which donors and recipients shared their experiences.

NIAID's Division of Allergy, Immunology and Transplantation (DAIT) coordinated the fair as a part of HHS Secretary Tommy Thompson's Workplace Partnership for Life Initiative. The Secretary has developed

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Dilemmas of Dearly Departing

'Great Teacher' Payne Examines End-Of-Life Issues at Grand Rounds

By Carla Garnett

It's not something most people want to think about, even though it's one of the two sure things in life. Not taxes...the other one. It's not surprising then that even seriously ill people, their family and loved ones—and perhaps especially their doctors and nurses—may all be reluctant to consider that the end may be near. Nevertheless, in recent times the medical community has increasingly focused on finding the best way to come to terms with terminal illness, grappling with what guest speaker Dr. Richard Payne calls the "the big questions or emerging problems" in palliative medicine.



Dr. Richard Payne

"We as autonomous human beings want to and have an innate need to be in control of our destiny and our lives," acknowledged Payne, new director of the Duke Institute on Care at the End of Life,

SEE END OF LIFE, PAGE 12

MRC's Weissmann Discusses Prion Transmission

By Rich McManus

The name of the mysterious pathogen that causes the brain-rotting transmissible spongiform encephalopathies such as scrapie, "mad cow" disease and Creutzfeldt-Jakob disease sounds like it came from a bad 1950's sci-fi film—prions. And according to Dr. Charles Weissmann, professor and senior research scientist at the Medical Research Council prion unit at University College, London—who lectured here Apr. 7—prions have devilish characteristics that wouldn't put them beyond the pale of an old *Outer Limits* rerun: though mercifully rare—striking only one person in a million yearly—the buggers are wildly infectious, capable of surviving withering attempts at cleansing



Dr. Charles Weissmann

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LETTERS TO THE EDITOR



Dr. Malgorzata M. Klosek has joined the Center for Scientific Review as a scientific review administrator for the new modeling and analysis of biological systems study section, which reviews grant applications that are heavily focused on mathematical and computational techniques applied to biology and medicine. She received her Ph.D. in applied mathematics from Northwestern University and was previously an associate professor of mathematics at the University of Wisconsin, Milwaukee. Just prior to joining CSR, she spent 2 years at the NCI Laboratory of Experimental and Computational Biology. She has published research articles on proteomics, ion channel currents, chemical kinetics, statistical physics, mathematical finance and stochastic differential equations.

Dear Editor,

I am an Iranian visiting fellow at the Cancer Prevention Studies Branch, National Cancer Institute.

Your report entitled "Roundtable Examines Middle Eastern Research Opportunities for Women," published in your Apr. 13 issue, was very informative and fascinating. Having read this story, however, one might conclude that the main obstacle for women to conduct research in Iran is a male-dominant culture that prohibits women from pursuing higher education. This might have been true 25 years ago, when Drs. Sabzevari and Semnani left Iran, but it is not true any more. The status of women's education and research opportunities in Iran has changed dramatically during the past 25 years. For example, in the educational year 2003-2004, 60 percent of all the students accepted into Iranian universities were females and only 40 percent were males. There are also quotas for women in medical specialty exams, and with an equal exam grade, females have a much better chance of being accepted into a medical residency program. It is currently unlikely for Iranian women to achieve high political positions and there are definitely some legal biases against women. But when it comes to science, at least now, women's opportunities for doing research are no less than those of men.

In my view, the main obstacle to conducting cutting-edge research by female (and male) Iranian researchers is limited access to world-class training programs and sophisticated research facilities. NIH can definitely play a role in solving these problems by granting more fellowships to female Iranian researchers.

Dr. Farin Kamangar, NCI

Symposium on Drug Addiction, Sept. 9-11

The National Institute on Drug Abuse and the American Association of Pharmaceutical Scientists are planning a Frontiers in Science Symposium titled, "Drug Addiction—From Basic Research to Therapies," Sept. 9-11 at Natcher Auditorium.

The conference will focus on the translation of fundamental addiction research to a variety of treatments, bringing together scientists in molecular biology, genetics and neuroscience with researchers in pharmacogenetics, drug discovery, drug targeting and development and quantitative therapeutics. Participation by scientists from industry will serve to highlight new therapies currently under commercial development.

Scheduled speakers include Nobel laureate Dr. Paul Greengard of the Rockefeller University; NIDA director Dr. Nora Volkow; Dr. Solomon Snyder of Johns Hopkins University and others. For more information, contact Scott Didawick, (703) 248-4753 or visit www.aapspharmaceutica.com. ■



The children of the Parents of Preschoolers Program (POPI) treated family members, friends and visitors to an exciting performance Apr. 7 at the first annual "International Show." More than 60 children, ages 2 through 5 years, performed dances and songs with a multinational flair. The children were demonstrating a variety of skills learned in an 8-week program of creative dance and movement offered at the campus preschool center in Bldg. 64. The children performed on the main stage of the Natcher Conference Center and were rewarded with enthusiastic response from the clearly biased audience.

NIH BIG Recognizes Scholarship Recipients

The NIH chapter of Blacks In Government invites all NIH'ers to its 2004 Scholarship Awards Dinner Celebration on Friday, June 11 from 7 to 11 p.m. at La Fontaine Bleu in Lanham, Md. The chapter will recognize three outstanding scholarship awardees from a pool of more than 130 applicants. The keynote speaker for the event will be Dr. Yvonne Maddox, deputy director of the National Institute of Child Health and Human Development. For more information about the event or to purchase tickets, contact awards committee chair Albert Parrish at (301) 402-3336. ■

N I H R E C O R D

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NIH director Dr. Elias Zerhouni gave opening remarks at a new exhibit at the United States Holocaust Memorial Museum on Apr. 21. The exhibit, titled, "Deadly Medicine: Creating the Master Race," is on view for

free at the museum's Kimmel-Rowan exhibition gallery and runs through Oct. 16, 2005. The exhibit features more than 200 artifacts, almost 200 photographs/reproductions and survivor testimony. It draws on 40 archival sources from around the world and is the first U.S. exhibition to present a history of the Nazi biological state. Zerhouni also toured the exhibit (below) with curator Susan Bachrach (r). (Photos courtesy carlcoxphoto.com.)



Dr. Griffin P. Rodgers has been elected to the Association of American Physicians (AAP). Rodgers is deputy director of the National Institute of Diabetes and Digestive and Kidney Diseases, and chief of NIDDK's Clinical and Molecular Hematology Branch, which he has headed since 1998. An internationally known hematologist, Rodgers pioneered the use of hydroxyurea to reactivate the silent fetal hemoglobin gene

to alleviate major complications of sickle cell anemia. He continues to study fetal hemoglobin as a therapy for other diseases of human hemoglobin. His research has directly affected the health of millions of people worldwide. He was presented as a new member at the AAP annual meeting in April.

Sue Wickner Elected to NAS

Dr. Sue Hengren Wickner, chief of the DNA molecular biology section in the Laboratory of Molecular Biology, National Cancer Institute, has been elected to membership in the National Academy of Sciences. She is one of 72 new members named Apr. 20 during the business session of the 141st annual meeting of the academy. NAS membership is considered one of the highest honors that can be accorded a United States scientist or engineer. Those elected recently bring the total number of active members to 1,949.

The NAS is a private organization of scientists and engineers dedicated to the furtherance of science and its use for the general welfare. It was established in 1863 by a congressional act of incorporation, signed by Abraham Lincoln, which calls on the academy to act as an official adviser to the federal government, upon request, in any matter of science or technology.

NIH Asian/Pacific Islander Heritage Program

This year, the NIH Asian/Pacific Islander American Heritage Program will celebrate its 32nd anniversary. All are invited to join in the festivities, which consist of two lunchtime programs on May 14 and 28, respectively.

On May 14, from 11 a.m. to 1:30 p.m. on the Bldg. 31A patio, there will be sales of food from China, India, Japan, Korea, the Philippines and Thailand. In addition, the event will feature a bonsai exhibition, demonstrations of calligraphy, floral arrangement (Ikebana), self-defense techniques by the NIH Tae Kwon Do School and a performance of the Chinese Lion Dance by the Tai Yim Kung Fu School.

On May 28, from 11:30 a.m. to 1 p.m. in Masur Auditorium, Bldg. 10, there will be a program of Chinese, Indian, Japanese and Korean music and dances. A reception will be held after the music program. Details of the program will be provided in the May 25 *NIH Record*.

Sponsors of the events include the NIH OEODM, Asian/Pacific Islander American committees, R&W Association, Inc., and the NIH Federal Credit Union. For information on reasonable accommodation, contact Charly Wells, (301) 496-4627. Sign language interpretation will be provided. For more information, contact Victor Fung, (301) 435-3504, vf6n@nih.gov. ■

Have Uterine Fibroids?

Call NIH at 1-800-411-1222 for information on a study using a new medication for 3 months before hysterectomy. Study-related treatment provided at no cost. Compensation is provided. TTY: 1-866-411-1010, or email prpl@cc.nih.gov. ■

NIH Community Orchestra To Perform on June 5

The NIH Community Orchestra, conducted by Gary Daum, will be in concert on Saturday, June 5 at 7:30 p.m. in Figge Theater on the campus of Georgetown Preparatory School, 10900 Rockville Pike, Bethesda, Md. Selections will include Vivaldi's *Concerto Grosso* (in conjunction with the Georgetown Prep String Ensemble), Mozart's *Symphony No. 40*, Ippolitov-Ivanov's *Caucasian Sketches*, Gliere's *Russian Sailor's Dance* and Strauss's *Blue Danube*. Admission is free, but a donation to the NIH charities is appreciated. For more information, email Gary Daum at gldaum@gprep.org.

SHARED RESOURCES, CONTINUED FROM PAGE 1

"These dryers have three expensive pumps," Wortman explained, "and ours was limping along. All three pumps needed work, which would have been very expensive to repair. And we couldn't do without it in the lab [in NCI's Urological Oncology Branch]." He found the replacement, he said, "simply by looking for it." He discovered the Shared Resources Database (SRD) online (at <http://durs.info.nih.gov/resource.htm>), and one of its several links pointed him to the NIH surplus property warehouse in Gaithersburg. There he found the dryer he needed.

Wortman, a self-described "long-time lab geek," worries that not enough intramural researchers and technicians at NIH know about the SRD. If more knew about it, he said, and posted their surplus equipment there, the site could help more people, speed the progress of research, and save the government money.

"There's not yet a critical mass of users," Wortman said. "Only a few pack rats like me use it. But Joe Scientist can use the SRD to find the widget he needs. I think that if we make Joe and Jane Scientist more aware that this site exists,

they are more likely to use it before they just send that big incubator to surplus, where it will not languish long before being donated or sold, essentially for scrap.

"As budgets actually get cut around here," Wortman continued, "I think Joe and Jane Scientist will be more inclined to look to the SRD if only he or she knows it's there. We would all be better stewards of the funds with which we're entrusted if we did so."

When NIH enjoyed the 5-year period during which its budget doubled, the SRD fell into relative disuse, said Dr. Michael Lenardo, an NIAID scientist who actually launched SRD—with the blessing of NIH deputy director for intramural research Dr. Michael Gottesman—in the mid-1990's. Back then it was known as the Research Materials Exchange, and was essentially a computer bulletin board, accessible via the old Gopher computer system.

Lenardo, who is chief of the molecular development section in NIAID's Laboratory of Immunology, consulted for about a year on the precursor to SRD, posting the availability of lab equipment, managing the bulletin board and occasionally claiming items

off of it. But when SRD became accessible via the web, he ended his consulting role with the project. "Self-use was always the goal for the site," he said. "That was the initial concept, really. It was supposed to be a free, open space for swapping equipment."

He had envisioned SRD as a sort of limbo for lab stuff before it hastened into surplus. "It's very tough to reclaim material from surplus," he noted. "The SRD kind of took advantage of that period before the equipment was officially put out to pasture."

The initial effort he began with Gottesman succeeded largely because "NIH budgets were tighter then—there was a need for more efficient use of resources. Then during the doubling period, there wasn't much interest. Now, the site might be more useful again."

Today, the Shared Resources Database is managed by Jada Roberts, an information technology specialist in ORS's Information Technology Branch who has run the program "since 1997, when it first went live [on the web]." SRD's purpose is twofold, she said: "First, it's for sharing equipment that's available. Second, it includes a link to the surplus property data file, which is downloaded daily from CIT."

On a recent March morning, the site included only four items, but inventory fluctuates monthly, according to Roberts. Typically it includes "anything you might find in a lab—some of which I can't even pronounce—as well as computer equipment," she said. "But it's for equipment only—no animals."

The most common item available on SRD is glassware, she said, usually in bulk quantities such as cases. The largest piece Roberts ever logged on the site was "a Justrite Safety storage cabinet for storing acids and corrosives." The smallest item was a test tube. Once an item attracts interest, it's up to the administrative officer to complete the transaction (involving decaling and "custodial codes"). The physical transfer of items is not SRD's concern.

Lenardo emphasizes that SRD "is also potentially useful for biologicals and lab supplies such as antibodies, tissue culture medium, chemicals, etc. However, the listings should probably include the age of the item and expected shelf life as well as recommended storage conditions. For example, NaCl has a shelf life of forever, but certain biological preps might go bad if improperly stored or if they are just too old."

Users of the SRD site are free to post the availability of material, but they are not permitted to delete items. Roberts cleans out the inventory every 6 months. If items go unclaimed, she emails the owners to check on their status. Many unclaimed materials get shipped to surplus.

"I rely on the people in the intramural programs to alert me when material is no longer available," she



Jada Roberts, an information technology specialist in ORS's Information Technology Branch, has run the Shared Resources Database since 1997.

said. "Communication is a key factor." There is also a kind of honor code inherent in the system, she said—clients actually have to have what they are advertising.

SRD is not, Roberts emphasizes, limited to intramural NIH. It also serves the extramural community. Roberts said she's starting to see a spate of IT (information technology) equipment offered for sharing, as well as printers.

"Initially, the idea for SRD was more strictly intramural and aimed at scientists to swap things," Roberts said. "But it has grown to include lots of IT equipment, which the scientists use, too. We're starting to see more of that."

She urges potential users of the SRD, regardless of their intramural/extramural status, to consider its virtues: "You can save money, help your fellow researchers and save a trip to Gaithersburg, where surplus is housed. We are hoping to attract more clients. We are ready." ■

NLM Exhibit Honors Eisenberg

An exhibit on the life and work of health services research pioneer Dr. John Eisenberg is on display outside NLM's History of Medicine Reading Room (Bldg. 38, first floor) through June 30, 2004.

Replete with letters, photographs and awards, "John

Eisenberg: A Life in Service (1946-2002)" can be viewed weekdays except federal holidays from 8:30 a.m. to 5 p.m. and Saturdays from 8:30 a.m. to 12:30 p.m.

Eisenberg came to Washington and Georgetown University after more than 15 years at the University of Pennsylvania, where he built its acclaimed health services research (HSR) program while simultaneously becoming

Klein Wins Mathilde Solowey Award, To Lecture May 20 in Lipsett

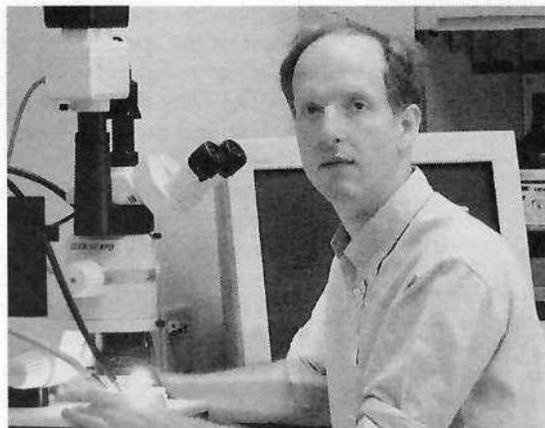
Lithium is the primary therapeutic treatment for the psychiatric condition known as bipolar disorder, but its mechanisms of action are still unknown. Lithium affects cellular metabolism and cell division, it inhibits a number of enzymes, alters nerve cell function and production of white blood cells, and in high doses it can be toxic. Dr. Peter Klein has spent much of his budding career studying how lithium, by its action on the enzyme glycogen synthase kinase-3 (GSK-3), activates the Wnt signaling pathway with remarkable effects in a number of research models ranging from slime mold chemotaxis to tadpole development to Alzheimer's disease. On Thursday, May 20, the scientific community will honor his work by inviting the Howard Hughes Medical Institute scientist to deliver the 31st Mathilde Solowey Award Lecture at noon in Lipsett Amphitheater, Bldg. 10. His talk is titled, "A Molecular Mechanism for Lithium Action in Development and Behavior."

The Solowey Lecture Award, established in 1973 by the Foundation for Advanced Education in the Sciences, annually honors a scientist for outstanding research in neurobiology or diseases of the central nervous system. The award is made possible through the generosity of Dr. Mathilde Solowey.

Klein's early work with slime mold and frog embryos led to the idea that lithium might act as a GSK-3 inhibitor, thereby affecting developmental processes. By a similar action, lithium can reduce generation of beta-amyloid in mouse models of Alzheimer's disease. Most recently, Klein created a knockout mouse lacking GSK-3 and found its behaviors closely resemble those of lithium-treated mice.

Klein received his M.D./Ph.D. in 1988 from Johns Hopkins University, where he studied signal transduction in *Dictyostelium* with Dr. Peter Devreotes. He then did postdoctoral work on *Xenopus* development at Harvard University with Dr. Douglas Melton. He has been an assistant investigator in HHMI since 1995 and is now an associate professor in the department of medicine at the University of Pennsylvania.

For more information, contact FAES at (301) 496-7975 or Dr. Miles Herkenham at (301) 496-8287. ■



Dr. Peter Klein of the University of Pennsylvania will give the Solowey Award Lecture on May 20 in Lipsett.



Dr. John Eisenberg

ing the first section chief in general internal medicine.

In 1997, Eisenberg became head of the Agency for Healthcare Research and Quality, the government's counterpart to academic HSR. He held this position for 5 years, until his death from a brain tumor on Mar. 10, 2002.

Eisenberg combined a unique sense of society and politics with clinical medicine to become a leader in the field of HSR.

The John M. Eisenberg papers are in NLM's Modern Manuscripts Collection. ■



Dr. André J. Premen recently joined the Center for Scientific Review as an assistant director in the Division of Receipt and Referral. He previously directed a cardiovascular aging program at NIA. He also has served as a scientific review administrator at NHLBI and as a program officer at NIAMS. He is a graduate of the NIH Grants Associates Program. After receiving his Ph.D. in physiology from the Uniformed Services University of the Health Sciences, Premen had postdoctoral training in the department of physiology and biophysics at the University of Mississippi Medical Center and the department of physiology at the University of South Alabama. He then returned to USUHS, where he was an assistant professor in physiology, conducting NIH-sponsored research on hormonal control of circulation.

TRANSPLANTATION, CONTINUED FROM PAGE 1

several initiatives to increase organ and tissue donation awareness, with the goal of increasing donation rates from the current 46 percent of eligible donors to a target of 75 percent.

"NIAID's research in transplantation is directed at understanding the mechanisms by which the immune system recognizes and either rejects or accepts transplants," says Dr. Shiv Prasad, chief of DAIT's Transplantation Immunobiology Branch. The goal of NIAID-sponsored clinical trials is to evaluate new and promising therapies to improve the health of transplant recipients and their organs.

Most of the speakers at the fair—themselves donors or recipients—also happen to work at NIAID. They shared their stories of courage and joy, fear and promise, heartbreak and hope.

Mary Kelleher, DAIT program specialist, says her story was "a textbook example of when everything goes right. I was shopping for new jeans at the Gap 6 days after my kidney and pancreas transplant—it's pretty amazing!" After living with diabetes since she was a child, Kelleher experienced a series of complications that affected her eyes, as well as nerves in her stomach, fingers, legs and feet—and ultimately destroyed her kidneys. As she put it, "I thought I had diabetes all figured out." But at age 34, she found herself hooked up to a dialysis machine 4 hours a day, 3 days a week, just to stay alive.

On Super Bowl Sunday 1999, Kelleher received "the call" and describes the whirlwind of excitement as all the hopes and prayers were finally being answered. "Halfway to the University of Pittsburgh [where the transplant procedure was done], I burst into tears," she recalls. "It hit me that somewhere not too far away was a family mourning the untimely death of their 16-year-old son.

"I think about my donor family all the time," she admits. "The grace and courage it must take to participate in this act of love is an incredible thing. I don't know the exact circumstances of the boy's death, but can imagine the family turmoil. I have written to the family, but how do you say thank you for this gift?"

James Selby, Jr., currently a program specialist for NIAID's Office of Clinical Research, is proud to tell the audience about his personal and professional triumphs. He has come a long way. Since transplantation, he has earned both bachelor's and master's degrees, written a book of poetry and won a gold medal in table tennis at the U.S. Transplant Games.

As a child, Selby was sickly. His mother nursed him through many illnesses. At age 4, he had a kidney removed as a result of a Wilm's tumor. His many respiratory problems, which were thought to be asthma attacks, were actually symptoms of a failing heart. By age 21, he had developed congestive heart failure, which caused a dangerous increase

in the size of his heart. He was also diagnosed with chronic renal failure. He would need two organ transplants to survive. Today, thanks to a successful heart and kidney transplant Selby is the picture of fitness—a tall, healthy young man.

A father-daughter transplant team told their story with humor, love and tears. Jennifer Pasternak, a grants technical assistant, is the kidney donor for her dad, Stephen. After more than 5 years of watching her father's health fail and his medical options dim, Pasternak had a conversation with her father. "Dad, you and I are going through this together," she said.

"Not a good idea," he tells the audience, as his eyes start to well up.

"My own flesh and blood stepped up to the plate to be my angel and saw me through this. When I think of the alternatives, that's when my daughter really shines."

With a smile, he jokes, "My only regret is that when my daughter gets up to go to the bathroom, I get up, too!"

On a serious note, Jennifer says, "It does not take a remarkable person to be a donor. This was my one chance in life to do something for my dad. Without him, I wouldn't even be here. My parents have done so much for me throughout my entire life."

Calvin Jackson II, audiovisual production specialist in the NIH Office of Communications and Public Liaison, is a bone marrow donor. "No one seems to understand why I would be a donor voluntarily," he says. "My friends have mixed reactions. My wife is concerned about having to take care of me. My daughter can't understand why I would be a donor for a total stranger."

Jackson recognizes the difficulty that minorities, particularly African Americans, have finding a bone marrow match because of low donor rates in that community. According to the Washington Regional Transplant Consortium, non-Caucasians make up more than 70 percent of the local transplant waiting list, emphasizing the message that organ, bone marrow and tissue donation is important to everyone.

Although his recipient did not survive, Jackson did his duty. "I did all I could do for the recipient," says Jackson, who continues to serve on the National Marrow Donor Program board of directors. "The doctors did all they could possibly do to save a life.



Jennifer Pasternak donated a kidney to her father, Stephen.

It was out of my hands.”

Julie Trapp, a mother of four, tells her story whenever people will listen. Her young, athletic son, Jason, was riding his bike to swim practice five blocks from home. She got a call from a neighbor. A car had hit Jason. She ran all five blocks to the scene, and ambulance attendants carefully shielded her as they hurriedly asked her to ride to the hospital with them. There were no sirens to be heard. Upon arrival at the hospital, 16-year-old Jason was pronounced dead. “When they asked me if I’d consider donating Jason’s organs, I did not hesitate,” Trapp recalls. “It was just the right thing to do. It was the normal thing to do. Anything that could be transplanted was transplanted. Donate organs—it’s something you should do. There are thousands of people in need.”

For more information on the Gift of Life Donation initiative, visit www.organdonor.gov. To learn more about donation in the Washington, D.C., area, contact the Washington Regional Transplant Consortium at www.WRTC.org. For more information on NIAID-sponsored clinical trials in transplantation, visit www.niaid.nih.gov/clintrials. ■

Wednesday Afternoon Lectures

The Wednesday Afternoon Lecture series—held on its namesake day at 3 p.m. in Masur Auditorium, Bldg. 10—features Dr. Barbara Entwisle on May 19; her topic is “Population, Land Use and the Environment.” She is director, Carolina Population Center and professor of sociology, University of North Carolina, Chapel Hill.

On May 26, Dr. Arthur M. Krieg will present “Mechanisms and Therapeutic Applications of Immune Stimulatory Bacterial CpG DNA.” He is professor of rheumatology, department of internal medicine, University of Iowa College of Medicine, and chief scientific officer and founder, Coley Pharmaceutical Group, Wellesley, Mass.

For more information or for reasonable accommodation, call Hilda Madine, (301) 594-5595.

Type 2 Diabetics Needed

The National Center for Complementary and Alternative Medicine is seeking volunteers ages 18-64 who are on oral diabetic medications, for screening of their vitamin C blood levels. You must be off vitamin C supplements for at least 1 month prior to screening. Payment is provided for blood level determination. Possible eligibility for further studies depends on vitamin C level. Refer to study #99-H-0033. Call toll free 1-800-411-1222 (TTY 1-866-411-1010). ■

NIH Parenting Festival Set, May 26

The second annual NIH Parenting Festival will be held on Wednesday, May 26 from 11 a.m. to 2 p.m. in the Bldg. 50 first floor conference area. Whether you are expecting a child, have children or have care responsibilities for a child, you will be welcome to explore the wealth of information and resources available at NIH.

Representatives from such services as the Work/Life Center, the NIH Lactation Program, the Office of Science Education, the NIH Federal Credit Union, and the Employee Assistance Program will be on hand, as will benefits specialists and NIH child care board members. A representative from FSAFEDS will be available to talk about dependent care and health care flexible spending account programs.

You can also find out about NIH research going on in different areas of child health, with representatives from several institutes. Talk to other NIH parents who have experience with adoption, including special needs, international and foster care adoption. Visit with the NIH-sponsored child care centers for hands-on experiential learning about child development and education. And bring your most knotty parenting issues to discuss with parenting experts.

Also planned are raffles and giveaways, and exhibitors distributing fact sheets, brochures and information that you can share with family members and coworkers. The festival is sponsored by the child care board, the Work/Life Center and the ORS Division of Employee Services.

Special shuttles labeled “NIH Parenting Festival” will run from Executive Blvd. (with stops at the Neuroscience Center and EPS/EPN), Democracy (single stop), and Rockledge I/II (single stop). They will depart from the satellite campuses on the half hour starting at 10:30 a.m., and from Bldg. 50 for a return trip hourly on the hour. For more information about the festival and shuttle schedules, call the Work/Life Center at (301) 435-1619, email wlc@od.nih.gov, or visit <http://wlc.od.nih.gov>. ■

HHS Career Mentoring Program

The HHS Career Mentoring Program is designed to meet the changing recruitment and retention needs of HHS. The program gives mentees an opportunity to pair with more experienced employees (mentors) who can provide advice, coaching or feedback on their career goals. The program is also soliciting employees, GS-13 and above, who are interested in mentoring. Participation in the program will last 1 year and is open to GS 5-12 employees who have been working in the department from 1 to 5 years. If you are interested in the program as a mentee or a mentor, contact Pauline Irwin at the NIH Training Center, irwinp@od.nih.gov or call (301) 451-2082. ■



Dr. Kenneth Chu has been appointed chief, Disparities Research Branch, Center to Reduce Cancer Health Disparities, NCI. He joined NIH in 1973 as a staff fellow, doing artificial intelligence research in the Division of Computer Research and Technology. In the late 1970's he joined NCI's Carcinogen Bioassay Program, where he studied the cancer-causing effects of chemicals on rodents. In 1981, he continued his research at the Occupational Health and Safety Administration, on carcinogens. During the 1980's, Chu returned to NCI to work on the early detection of cancer. In 1995, he joined NCI's Special Populations Research Branch and began to study health disparities in racial groups. Chu is the coauthor of more than 250 publications.

Day for Kids Brings Out Teacher in NIH'ers

More than anything else, NIH's 10th almost-annual observance of Take Our Daughters and Sons To Work Day highlighted what a talented faculty NIH employees turn out to be. Whether it was the clear and informative overview of her field given by Laura Ediger, lead technician in the microbiology service of the Clinical Center's department of laboratory medicine, or the first-rate performance given by the cast of professional actors at NLM's *Changing the Face of Medicine* play, or the gentle emcee work of David A. Thomas at NIDA's "Who Wants To Be an NIDA Neuroscientist?" exhibit,

which aped TV's *Who Wants To Be a Millionaire?*, the event drew out the natural teacher in our workforce, to great positive effect on the kids. And their parents.

Some 1,039 children signed up for this year's event,

said Gary Morin of the Office of Equal Opportunity and Diversity Management, which sponsored the day. Canceled in 2003 for security reasons, the event was last held in 2002 and drew a then-record 1,000 kids.

While most of the events for the 8-15 year olds were scripted and planned, some were simply the result of youngsters getting to see what mom or dad or other adult relative or guardian does at work on a typical day. Bob Murphy, who works in an NCI laboratory, entertained a small crowd, including daughters Brogan, 11, and Kiera, 8—both students



Meredith, the lab mouse, told all about her career at an interview in Natcher Bldg.



*Above, actors from the American Historical Theatre celebrate the lives and achievements of women in medicine in *Changing the Face of**



Medicine, an original play based on the exhibition of the same name at the National Library of Medicine. In the scene at left, the actors portray the role of women philanthropists in the founding of Johns Hopkins School of Medicine. They donated the funds needed to open the school on the condition that women students were admitted on the same terms as men.

Marie Conrad (l), a technologist in the microbiology service, department of laboratory medicine, Clinical Center, has a rapt audience during her presentation.



A medical career could be starting here.

at Wheaton's St. Catherine Laboure Elementary School—with a demonstration of how liquid nitrogen, used to freeze lab samples, boils over at room temperature, and can freeze a flower into glass-like fragility in mere seconds.



Youngsters pose with the NIH Police dog Daisy at an exhibit on the patio behind Bldg. 31. Daisy has been trained to detect explosives and is handled by Master Patrol Sgt. Alan Blaum. The NIH Police Command Station was open for tours, as well. Other activities during the day included tours of the Children's Inn; careers in nutrition; eating and the brain; NCI's Cancer Atlas; public speaking; how to build a web page; "The Adventures of an NIH Veterinarian"; rodent and aquatic tour; and country and western line dancing.



Kelly Smith, a technologist in the phlebotomy service, department of laboratory medicine, Clinical Center, helps youngsters draw blood from a fake arm.



At left, students from Rosa Parks Middle School in Olney, Md., including (from l) Diane Yu, 13, Ella Branson, 14, and Kelly Kessinger, 14 (whose mom Teresa is a nurse manager on 5 West in the Clinical Center) reap the goody-bag harvest.



The operating team is gowned, gloved and ready to go at an exhibit at the Natcher Bldg. The youngsters enjoyed activities that let them dress like medical professionals; many went home with the makings of future Halloween costumes.

PHOTOS (EXCEPT FOR NLM):
ERNIE BRANSON



Dr. Rajiv Kumar has joined the Center for Scientific Review as scientific review administrator of the electrical signaling, ion transport and arrhythmias study section. This review group considers grant proposals on the occurrence, cause and treatment of cardiac and vascular electrical and electromechanical dysfunction, arrhythmias and sudden death. Kumar earned his Ph.D. in chemistry from Kanpur University, India, where he studied the cholinergic regulation of cardiac contractility. He joined Emory University Medical School as a postdoctoral research associate to study postnatal developmental changes in regulation of L-type calcium current. He was an assistant professor in the Children's Research Center and research director of the Todd Franklin Cardiac Research Laboratory at the department of pediatrics, Emory University.

PRIONS, CONTINUED FROM PAGE 1

and able to stick stubbornly to such surfaces as plastic and stainless steel.

These diabolical characteristics might explain why Masur Auditorium was full by the time Weissmann began his Wednesday Afternoon Lecture with the understatement, "Prions are pretty different from any other disease agent." Weissmann, who will soon relocate to Florida, where he will be affiliated with the Scripps Research Institute, has studied prions since the early 1980's, and reviewed some of the pathogen's properties in a talk titled, "Propagation of Prions."

In humans, prion-associated disease usually strikes in people of advanced age (60-70), is lethal within a year of diagnosis, occurs only rarely, is transmissible and has a long incubation time, perhaps up to 40 years. Unlike other infectious agents, which cause an immune response of some kind, prions cause "no classical cellular or humoral immune reaction," Weissmann said.

The most common human prion disease is sporadic Creutzfeldt-Jakob disease (CJD), followed by familial CJD, then acquired CJD (including variant CJD, which strikes young people, mainly below the age of 30), kuru (a brain disease discovered by former NIH scientist and Nobel laureate Dr. Carleton Gajdusek) and "iatrogenic" CJD, or disease caused by growth hormone or transplants derived from donors suffering from unrecognized prion disease.

Weissmann paused to consider the controversy associated with tainted beef and mad cow disease. "Yes, I do eat beef," he admitted. "I'm at an age where the disease is not usually acquired." He further divulged that he doesn't proscribe beef-eating among his grown children, either.

What is now known as prion disease was first recognized in the mid-1930's, Weissmann said, when scrapie—then thought to be a "slow virus"—was found in sheep. The disease was characterized by unusually long incubation times during which no symptoms were evident for years. It was known even then, however, that even formaldehyde could not kill the scrapie agent.

American scientist Stanley Prusiner was the first to purify the scrapie agent, from diseased hamster brains; he called it PrP scrapie. To this day, no scrapie-specific nucleic acid has ever been identified. It is known, rather, by its qualities—it is resistant to protease digestion, and tends to aggregate, forming beta-sheet-rich clumps called amyloid.

Weissmann described how his laboratory found the messenger and the gene that encode PrP scrapie. A series of biological linkage tests established that PrP is the infectious agent causing prion disease. And because the familial form of CJD is associated with point mutations in human genes, there is now a genetic link to prion disorders. This finding was

buttressed by later studies in knockout mice in which PrP was linked to disease.

The hypothesis that prions were a form of slow virus was discarded when scientists could find no nucleic acid associated with prions. This is also the drawback of the "virino" hypothesis, which posited a very small nucleic acid incapable of encoding a protein on its own, but able to recruit a host protein to form a capsid that could elude recognition by the immune system. Again, "There's no evidence of a nucleic acid," said Weissmann.

Then there's the "protein-only" hypothesis, advanced back in 1965, which attributed disease to abnormalities in protein conformation. "There is good evidence that conformational modification of PrP is involved in the disease, although the mechanism by which this occurs is still obscure," he said. "Recent studies positing a role for RNA in the process still need to be confirmed."

Of the two models proposed, the "refolding" and the "seeding" model, the latter has been "demonstrated convincingly in yeast."

From these theoretical heights, Weissmann then descended to what science knows in fact: there are many different strains of the scrapie agent that can be propagated in a single species, be it mouse or human. Different strains are characterized by lesion site and incubation time. And there are many types of abnormal configuration of PrP; the way PrP misfolds determines where it is susceptible to cleavage by certain proteases. In man, four strains of PrP are detectable by gel electrophoresis signatures, giving scientists a diagnostic tool. NIH's Dr. Reed Wickner, who introduced Weissmann, has shown that yeast contains elements that behave like prions.

"Different conformations of protein are associated with distinct, stable prion strains, which confirms the 'seeding' hypothesis," Weissmann said. "PrP is essential for multiplication of prions, their propagation through the organism and pathogenesis. But structure of the prion is still unknown."

To illustrate transmission of prion disease by surface-bound prions, Weissmann described an accidental transmission of CJD by an EEG brain electrode. After having been used on one infected patient, the electrode was treated with benzene, ethanol, and formaldehyde vapor for 48 hours in an attempt to disinfect it, yet was still able to transmit disease when reused in a second and even a third patient. NIH scientist Dr. Clarence Gibbs later showed that the same electrode was still capable of transmitting prion disease to a chimpanzee 3 years after the accidental human transmission.

Weissmann's studies established that steel surgical wire could carry prions whether left in animal brains permanently or merely dipped briefly into the brain. "Only a short time is sufficient to pass the

infection from a wire to a mouse...and an enormously small amount of protein was the same [in terms of infectivity] as injecting concentrated brain homogenate [which teems with prions]. This may be because the surface-bound agent is stabilized against degradation in the host, Weissmann said.

It was no comfort to learn that prions appear to bind as tightly to plastic as they do to metal.

Weissmann said there are only half a dozen cell lines that can be successfully infected with PrP; unsurprisingly, given its penchant for infecting brain, a neuroblastoma line is one. New cell-based assays for prions promise to advance prion science faster than was possible in the slow and expensive mouse bioassay, he noted.

He concluded with a detailed analysis of how prions move around in the body, migrating typically from gut to brain with a stopover in the spleen and lymph nodes, where replication is amplified, before advancing to the peripheral nervous system, to spinal cord and finally the brain (although if the dosage is high enough, prions can go directly from gut to central nervous system). As to how and why prions arose in mammalian history, hypotheses are now wide open, Weissmann said.

To hear the full discussion of prion propagation, visit www.videocast.nih.gov, where the talk is archived. ■

Willett Retires from NIH After 38 Years

Marie Willett retired on Apr. 2 after 38 years at NIH. Hired in 1966 directly from high school, she has proven to be a shining example of the local workforce, colleagues said.

She typifies the young, promising individual who comes to the government early, and many years



Marie Willett

thereafter leaves an indelible mark on those who are fortunate enough to meet her or work with her, they added. "Whoever did the hiring in 1966 certainly had an eye for talent; they would be pleased to know that Marie is as young and promising in her outlook and demeanor now as she was then," said Linda Stecklein. "She has lost neither her

enthusiasm nor her willingness to help everyone, has worked her way up through the ranks, and (give or take an hour or two) says she has loved every minute at the NIH."

Beginning with what was then the Division of Research Resources (and eventually became NCCR), Willett migrated to NHLBI, and ended her career with the Office of Extramural Programs in the Office of Extramural Research, OD.

A plan to "roast" Willett at her recent retirement party proved to be short-lived, as no one could really say anything insulting about her, even in jest. Lauded for her candor, her honesty, her ability to meet deadlines and her ability to work as a team member and leader, she will be missed perhaps most by her current supervisor, Dr. Walter Schaffer, acting head of OEP.

Offering attendees even richer detail about Willett's contributions to NIH was Dr. Ron Geller. He met Willett in 1974, hired her in 1989 and then worked with her for years until his recent retirement. Also attending was Willett's husband, Jim, whom she met while both were working at NIH.

Willett's talents go beyond NIH. Working tirelessly with the Girl Scouts, she is a dedicated Scout Mom to her daughter Stephanie. Between the two of them, they keep half of Rockledge in Girl Scout cookies, and take part in a variety of musical events, too.

Willett will be relaxing, doing some contracting work at NIH and spending time at the family beach house in Ocean City. She will also doubtless be found at Blockbuster and other high-traffic areas selling Girl Scout cookies. ■

Gene Study Seeks Volunteers

Researchers at the University of Maryland are looking for volunteers willing to give their DNA a workout as part of an exercise study focusing on changes in blood pressure and other risk factors for cardiovascular disease. You must be a generally healthy, sedentary, non-diabetic male or postmenopausal female between 50-75 years of age. Participants receive a physical exam, cholesterol and diabetes blood tests, cardiovascular assessment and aerobic capacity tests, 6 months of supervised exercise training, diet analysis and nutrition counseling, body composition analysis, and bone density measurements. A short telephone screening can determine initial eligibility. For more information contact Dr. Dana Phares or any Team Gene staff member (301) 405-2571, dphares@umd.edu.

CIT Computer Classes

All courses are given without charge. For more information call (301) 594-6248 or consult the training program's home page at <http://training.cit.nih.gov>.

NCBI's GenBank Quick Start	5/12
Introduction to FileMaker Pro	5/12
Introduction to FrontPage	5/13
Web Sponsor - New Features	5/13
Introduction to the Helix Systems	5/13
nVision Travel	5/14
Creating Presentations w/PowerPoint for the PC	5/17
Securing Your Home Network	5/18
ADB/VPS Printing	5/18
Advanced SQL	5/18-19
PubMed	5/19
EndNote	5/19
Introduction to Javascript	5/20
Statistical Graphics in R	5/20
Seeking Information on the Web	5/20
Eclipse Tutorial: Usage, Tips, Tricks and Advanced Features	5/25
Wireless Security	5/25
Disaster Recovery	5/25
Statistical Analysis of Microarray Data	5/25-26
Fundamentals of Unix	5/26-28
PowerPoint Topics: Graphs, Links and More	5/27
Introduction to mAdb	5/28

END OF LIFE, CONTINUED FROM PAGE 1

Duke University Divinity School, who delivered a Clinical Center Grand Rounds lecture in the Great Teachers series on Apr. 14. "But, what does that mean and how does that play out in the context of having serious illness that may be life-limiting? How do we approach this in a death-denying society like ours?"

Consider the case of a 70-year-old Russian immigrant with recurrent colon cancer. Widowed with adult children, the woman was frequently in and out of the hospital for symptom-management, specifically physical pain and an infection, both of which were solved with medication. One day—seemingly out of the blue—she calmly and rationally addresses the medical team during rounds, "Dr. Payne, just stop beating around the bush. My life is over. My children are grown. My husband is gone. Just turn up the morphine drip and let me exit."

"What would you do?" Payne queried the audience.

"Well, what are the spiritual dimensions of her pain?" countered Dr. Ann Berger, who established the CC's Pain and Palliative Care Service in 2000. The goal of

palliative care, as she had explained in an earlier lecture, is "to cure sometimes, to relieve often and to comfort always. Total pain is physical pain plus emotional suffering. Suffering is psychosocial issues, loss of work, family functioning, financial concerns, fear of death and spiritual issues. This is very important because this is where we miss the boat in medicine. How we miss the boat is that we think to take care of suffering we'll just give a medication of some type. There is no medication for suffering."

In his lecture, Payne pointed out five major considerations in quality end-of-life care: symptom management; a sense of shared decision-making between doctor and patient; satisfaction with care on the part of the patient and the family unit; coordinated care among the entire caregiving team; and continuity of care.

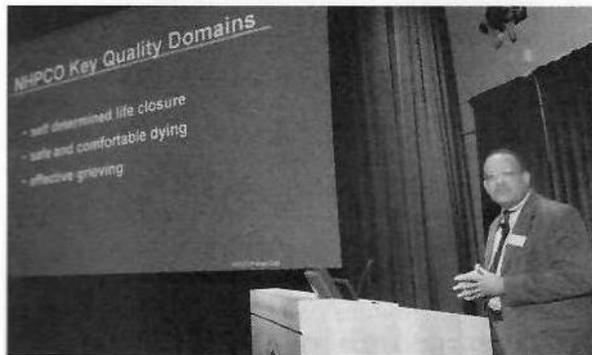
The National Hospice and Palliative Care Organization, Payne said, also suggests ways of coping that include discovering the person's "self-determined life closure—finding out what's most important to the person suffering the life-limiting illness in terms of bringing their life to a conclusion," offering safe and comfortable dying—"incorporating a more global concept of psychological comfort as well as physical comfort, and providing for effective grieving for the patient's loved ones who are left behind."

Contemplating these topics may be even harder for

PHOTOS: BILL
BRANSON



Dr. Paul Plotz (l), chief of the NIAMS Arthritis and Rheumatism Branch and host of the Great Teachers lectures, and Dr. Marion Danis, head of the section on ethics and health policy in the Clinical Center's department of bioethics, welcome guest lecturer Dr. Richard Payne, director of the Duke Institute on Care at the End of Life.



Payne points out major considerations in quality end-of-life care, including self-determination, comfort and grief. patients—and for researchers—at NIH and other medical research environments, according to Berger. "Patients come here with an expectation that they're going to get better," she said in an interview after Grand Rounds. "[Principal investigators] couldn't be in this unless they thought their research was going to work. When it doesn't work out that way, for whatever reason, [accepting that] may be a little more difficult for both the patient and the physician. Physicians by and large are still not good at treating end-of-life issues. We are a death-denying society. Death is seen as failure."

Berger further explained that the palliative care team makes an important distinction in terms, stressing the difference between curing and healing. "Curing is curing the illness," she said, "but emotionally, spiritually, a person can still be healed. People can be healed without being cured."

What, then, is a physician to do about a 38-year-old Latina single mother with HIV/AIDS and metastatic breast cancer who is poor, has two children under age 10, is "angry with God" and becomes "quite disruptive" in clinic visits? "How do you approach the pain that comes from spiritual distress?" asked Payne. "I can tell you there is no morphine dose for this suffering."

Payne also touched another issue that commonly weighs on physicians treating people who have chronic pain, and such pain coupled with terminal illness. For instance, how would you handle the 42-year-old veteran who is addicted to heroin and cocaine, but won't comply with treatment, or the 54-year-old multiple myeloma patient who intimidates the medical staff with his physical presence and will not adhere to prescribed therapy?

"Because pain is a subjective effect and because a high-quality treatment and evaluation really involves entering into a trustful relationship with the patient," Payne says, "the co-occurrence of chemical dependency and psychological disorders is often quite confounding."

Think about two elderly African American people, unrelated, ages 80 and 83 respectively. The man has metastatic prostate cancer and the woman has

diabetes, hypertension and has survived two heart attacks. As their physician approaches them separately to discuss advance care planning, the man—suspecting racial discrimination—demands to know if the doctor talks to all of his patients about such issues, and the woman—unwilling to face even thinking about the inevitable—claims, “I am not sick. I don’t want to talk about this stuff.”

“These are hard, hard issues,” Payne concluded, describing the multi-faceted dilemmas facing today’s medical teams, “but these are human beings.”

As for the immigrant, the single mom, the vet and the several other people described throughout Grand Rounds, Payne recalled that although he treated each patient individually and each required a different course, one lesson held true for all: empathy goes a long way.

“It was only by sitting down...and doing a mental exercise, by visualizing how I would have thought through this if I were the one in that bed,” he said. “My point is that to see suffering, we have to get into the skin of the person who is suffering.”

Paraphrasing a scene from *The Godfather*, Payne said the key for health professionals is to “try to see the world as other people around [you] see it. We don’t do enough of that in medicine. We are so reductionist in our approach, and so into solving a particular problem that we’re often not willing to sit down and see the problem as the patient sees it.”

In the past few years, Payne said, experience and thoughtful discourse in the emerging end-of-life field has highlighted the importance of many concepts, including the necessity of assembling a multidisciplinary team for every patient that includes not only physicians and nurses, but also skilled social workers, clergy and other counselors. Still, he pointed out, the territory remains unfamiliar, the footing often unsure for those in medicine. Effective palliative care is relatively new, even though terminal illness is not.

“We have a saying, ‘Pain is the oldest human problem, but probably the youngest medical specialty,’” Payne offered at the start of his lecture. “I think we’re in the middle of a real renaissance and a real interesting rebirth of how we are thinking about fundamental things like pain, how we evaluate subjective effects in individuals and how we approach and alleviate human suffering.” ■

Malaria Vaccine Study Needs Volunteers

Healthy men and women ages 18-45, without previous history of malaria or receipt of a malaria vaccine, are needed to participate in a study on the safety and effectiveness of a new investigational malaria vaccine at Walter Reed Army Institute of Research in Silver Spring. Health screening and financial compensation are provided. Call 1-866-856-3259 toll free or (301) 319-9335/9320, or visit www.wrairclinicaltrials.com. ■

Four Join NICHD Advisory Council

Four new appointments have been made to the National Advisory Child Health and Human Development Council. The new members are: Dr. Jacquelynne Eccles, professor, department of psychology, University of Michigan; Dr. David R. McClay, professor, department of biology, Duke University; Dr. Alan H. Jobe, professor, department of pediatrics, Cincinnati Children’s Hospital, University of Cincinnati; and Lenore Zedosky, West Virginia department of education (retired).

Eccles is a highly experienced investigator specializing in developmental and social psychology of middle childhood and adolescence. She has published widely on children’s competence, academic functioning, and mental health, and on the influence of psychological, social and environmental factors on these outcomes.

Jobe is a leading investigator in neonatal-perinatal medicine. His research interests focus on translational research using animal models of fetal development, prematurity and lung injury.

McClay is a renowned developmental biologist; most of his work has focused on the sea urchin model. He is the program director of a program project grant on neural tube development that is part of NICHD’s birth defects initiative.

Zedosky has worked in the field of nursing education for more than 30 years. She is retired from the West Virginia department of education, where she served as executive director of the Office of Healthy Schools. ■



NICHD director Dr. Duane Alexander (l) and NICHD deputy director Dr. Yvonne Maddox (r) welcome new council members. They are (from l) Dr. David R. McClay, Lenore Zedosky, Dr. Alan Jobe and Dr. Jacquelynne Eccles.

Chamber Singers Welcome All to Concerts

The NIH Chamber Singers invite all lovers of music to hear its Spring Concert. The first performance will be at noon, Thursday, May 20 in the 14th floor auditorium of the Clinical Center. The second performance will be at 7 p.m., Thursday, June 10, also in the 14th floor auditorium. An additional performance will be at 2 p.m. on Saturday, June 12 in the Twinbrook Library near the intersection of Twinbrook Parkway and Veir’s Mill Rd. in Rockville.

The Singers put their hearts into all kinds of music, from historic to contemporary, both serious and silly. They sing without the accompaniment of instruments, in harmonies of as many as eight separate parts. The group guarantees that you will find much to entertain and amuse you, so come to relax in a chair for an hour. ■

NIGMS's Charland Finds Fulfillment on the Farm

By Jilliene Mitchell

Getting up at the crack of dawn to go to work is probably not the way most people want to begin their Saturdays. Saturday mornings often involve sleeping in, relaxing or simply kicking back and leafing through the newspaper with a cup of coffee.

For Stacy Charland, chief information officer at NIGMS, working on a Saturday morning is a routine practice. But her weekend job is quite different from her gig here at NIH, where she oversees a staff of 23 and ensures that NIGMS has the IT support essential for carrying out daily business activities. She's also a rare-breeds livestock conservationist.

Swapping a business suit for a set of overalls, Charland currently raises 70 chickens, 19 sheep, 17 turkeys, 14 ducks, 3 geese, and 2 goats on her farm just outside of Poolesville, Md. Starting out with only a few baby chicks, she began her farm in her Bethesda townhouse before moving to her current 56-acre plot of land, which is a Maryland agricultural preservation area.

An animal lover since childhood, Charland says that some of her fondest memories are of the times she spent on her grandparents' farm in Florida—those memories are one of the reasons

that she decided to become a farmer. She was also concerned about the quality of meats she consumed and the way animals are raised and treated on large farms, which is why she was once a vegetarian.

"Factory farming practices have kept our food cheap, but at what cost to our health and the quality of life for food-producing animals? One way to ensure the quality of the food I'm eating is to raise the food myself. We've been fortunate in finding a local source of organic feed—it costs more, but we strongly believe it is best for the long-term health of our animals and for us," Charland said.

She is also helping to keep rare livestock breeds alive. The ducks, turkeys, sheep and most of the chickens that she raises are breeds that were once common on American farms but have more recently been replaced by a limited set reared for mass production.

"Bred for fast growth and a lot of white meat, today's commercial turkeys have to be artificially inseminated to produce fertile eggs, so small farmers can't even raise their own turkey chicks—they must order them from hatcheries," Charland said. Unlike the modern-day turkey, her heritage turkeys are able to forage for part of their food and hatch their own eggs. They're almost impossible to find on today's farms.

Maintaining the farm is a joint effort between Charland and her husband. Since the two work long hours and have substantial commutes, caring for the animals can be challenging during the week. Typically, one of them handles the morning chores while the other takes care of the evening chores.

Each set of chores takes about 30 minutes to complete. They include collecting eggs, letting the ducks and turkeys outside to range and locking them up in the evening, feeding and giving the animals water once or twice a day, and occasionally tending to sick or injured animals.

Several times a week, Charland and her husband wash, inspect and pack the chicken eggs into cartons. They later sell the eggs, and on occasion beef and lamb, to friends and neighbors.

Charland loves farming for a number of reasons. She says that it's a way for her to keep busy, a good source of exercise and it gives her the opportunity to spend more time outdoors. "Farming lets me indulge in my love of animals, but I also like the practical side of being somewhat self-sufficient. We have a never-ending supply of fresh eggs—trust me, they are nothing like store-bought," she said.

One of her favorite parts of farming takes place in the spring, when there is an explosion of new life. Although this time of year brings more work for her,

she enjoys watching and caring for the young animals.

One of the negative aspects of farming for Charland occurs during the fall, when she must decide which animals to keep over the winter and which ones to sell or put in



Stacy Charland of NIGMS balances work life at NIH with farm life in Poolesville.



Farmer Charland in her element

the freezer. "I hate that part, but it is a part of farming life, and I know that they have had a very good life," she said.

All in all, Charland wouldn't trade being a farmer for the world. "Farming is something that is constantly changing with the seasons, there is always something to do and I never have to worry about getting bored," she said. "After spending as many as 10 hours a day focused on technology, it is a wonderful change of pace to come home to the farm." ■