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The Second Best Thing About Payday

nih record

ABOVE • *What is a maestro doing in the Clinical Research Center atrium? See story on p. 12.*

features

departments

Bargmann's Roundworm Studies Yield Insights About Brain Circuitry

By Rich McManus

Although the much-studied roundworm is about 5,000 genes short of the human total—the official score is around 25,000 for us and 20,000 for them—neuroscientists such as Dr. Cori Bargmann, who is co-leading the working group that is defining the goals of the recently announced NIH BRAIN Initiative, have been able to map out basic neural circuits that we likely share with *Caenorhabditis elegans*.

Dr. Cori Bargmann kicks off the 2013-2014 Wednesday Afternoon Lecture Series on Sept. 9.

At a special Monday kickoff of the 2013-2014 Wednesday Afternoon Lecture Series on Sept. 9, Bargmann shared painstaking investigations of roundworm behavior—they dwell, they roam, they twist and turn (but they write neither country tunes nor, as Bargmann noted, Shakespeare)—that has been linked to the activation of specific neural circuits.

In his introduction to Bargmann's

SEE **BARGMANN**, PAGE 8

Gates To Give Barmes Global Health Lecture, Oct. 7 in Masur

Bill Gates, co-chair and trustee of the Bill & Melinda Gates Foundation, will deliver the annual David E. Barmes Global Health Lecture, "Why the Future Needs Biomedical Innovation," on Monday, Oct. 7, at 1 p.m. in Masur Auditorium, Bldg. 10. Known for his philanthropy, Gates advocates for research and innovation to help people live healthy and productive lives. He is also an outspoken supporter of federal investment in basic scientific research.

In 2000, he and his wife Melinda established the Bill & Melinda Gates Foundation to improve international public health through the development of vaccines, therapies, diagnostics, agricultural products and other technologies and to partner with the private and public sectors to ensure that these technologies can be delivered successfully to the people who need them. In the U.S., the Gates Foundation supports innovations that improve public education. To date, the foundation has invested $27.6 billion in grants.

SEE **GATES**, PAGE 4

Safety & Wellness

Staff Get Moving, Learn Healthy Habits At Expo in Natcher

By Dana Steinberg

ORWH's Angela Bates (l), a co-chair of the Expo, generates electricity on a stationary bike.

Some came to tango. Others got a lesson in self-defense. Some came to Zumba, while others tested their fitness levels.

At the 2nd annual Safety, Health and Wellness Expo, held at Natcher Bldg. on Aug. 28, participants danced, worked out, got health screenings, watched martial arts demonstrations and interacted with dozens of safety and wellness experts.

The Office of Research Services partnered with numerous institutes and centers and out-

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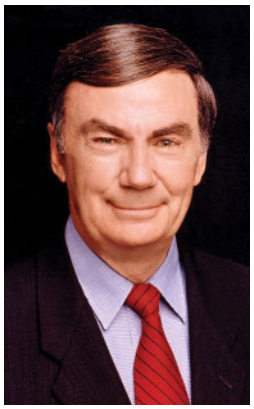
Sam Donaldson

NIH Combined Federal Campaign Kicks Off, Oct. 2

The NIH 2013 Combined Federal Campaign kickoff takes place on Wednesday, Oct. 2 from 11 a.m. to 1 p.m. in front of Bldg. 1. Join NIH director Dr. Francis Collins as NIH welcomes ABC news veteran Sam Donaldson and Patty Stonesifer, president and CEO of Martha's Table, as keynote speakers. Meet with representatives from more than 30 charities who you can support with your CFC contribution this year. Enjoy live music as well as lunch and dessert fare from top D.C. area food trucks. Learn more at http://nih.cfc.gov/ and follow events on Twitter @NIH_CFC.

STEP Forum on 'Microbiome and You'

The staff training in extramural programs (STEP) committee will present "You Are Not Alone: The Microbiome and You," on Tuesday, Oct. 8 from 9 to 11 a.m. in Rockledge II, Rm. 9100.

Trillions of microbes inhabit your body and play critical roles in human health. These organisms are integral to maintaining your overall well-being and, possibly, even your behavior. Upsetting the delicate balance between these microbial communities and your body can have detrimental health effects. Who inhabits these communities? How do we get them? How can we keep them? Come and learn to love the ones you're with.

Camera Club Holds Photo Competition

The NIH Camera Club will hold its annual open competition on Wednesday, Oct. 9 at 7 p.m. at the Five Star Premier Residences, 8100 Connecticut Ave., Chevy Chase. The competition is open to all; you do not need to be a member to enter. The categories are: monochrome prints, color prints, color slides and digital images. You may enter up to four images per category. There is an entry fee of $3 per image. There will be cash prizes for the winning images.

You can submit slides and prints at the door between 6 and 6:45 p.m. Digital entries must be submitted electronically by Oct. 4. Full details and rules about the competition and directions to the Five Star Premier Residences are available at www.nihcameraclub.com. For other questions about the competition, contact Jordan Snyder at josnyder@comcast.net.

Next Protocol Navigation Lecture, Oct. 7

The IRP Protocol Navigation Training Program Seminar Series continues with a lecture on Monday, Oct. 7 from 1 to 2 p.m. in Bldg. 50, Conf. Rm. 1227/1328. The program is a trans-NIH effort to develop resources and tools and to provide training for intramural staff and contractors involved in protocol development, writing, coordination and management. Dr. Lynnette Nieman, director of the NIH Office of Human Subjects Research Protection, will present "AAHRPP, SOPs and the New Applications: What they mean for the human research community." For more information, contact Beverly Barham, (301) 594-2494, bbarham@mail.nih.gov or Marcia Vital, (301) 451-9437, vitalm@mail.nih.gov.

Meet OEODM Program Managers at Open House, Oct. 3 in Wilson Hall

The Office of Equal Opportunity and Diversity Management will host an open house on Thursday, Oct. 3 from 11:30 a.m. to 1 p.m. in Wilson Hall, Bldg. 1. Meet special emphasis managers Golda Philip, Federal Women's Program; and Tyrone Banks, Asian American and Pacific Islander Program. Learn more about and share goals and visions of both programs. Sign language interpreters will be provided. For reasonable accommodation and details about the event, contact Philip at (301) 594-8401 or golda.philip@nih.gov; or Banks at (301) 451-9692 or tyrone.banks@nih.gov. Visit online at http://oeodm.od.nih.gov.

Career Development Seminar, Oct. 9

Francisco Sy of NIMHD and Juliet Bui of SAMHSA will share their experiences as federal employees and advocates for public health at a seminar, sponsored by the NIH Asian & Pacific Islander American Organization, that will take place from noon to 1 p.m. on Wednesday, Oct. 9 in Bldg. 38, Conf. Rm. B. The speakers will offer perspectives on addressing health disparities. This is a free event open to all; light refreshments will be served. For more information, contact Xinzhi Zhang at xinzhi.zhang@nih.gov, (301) 496-1780.

Grad Student Conference Scheduled During NIH Research Festival

The National Graduate Student Research Conference is scheduled for Oct. 6-8 during NIH Research Festival. Conference events will be held at the Clinical Center's newly renovated Student/Faculty Academic Center as well as at Natcher Conference Center. Graduate students from across the U.S. will attend the meeting. NIH investigators will have the opportunity to recruit participants to join research groups as postdoctoral fellows. For details, visit https://www.training. nih.gov/events/recurring/nih_national_graduate_student_research_festival.

DOMA Repeal

All Married Couples Must Report Joint Assets

By Dana Steinberg

If you're married, you're probably familiar with the rules relating to financial disclosure reports. Under these rules, certain married government employees must file reports annually to disclose assets owned by themselves, their spouses and minor dependent children. As of Aug. 19, same-sex married couples also must report their spouse's finances.

In June, the Supreme Court struck down as unconstitutional section 3 of the Defense of Marriage Act (DOMA), which defined marriage as a legal union between a man and a woman. Following this decision—United States v. Windsor—the U.S. Office of Government Ethics (OGE) now interprets "marriage" and "spouse" to include a same-sex marriage. Whether it's an opposite-sex or same-sex marriage, the same ethics rules now apply.

On Aug. 19, OGE issued a legal advisory stating, from that date forward, "OGE and agency ethics offices throughout the Executive Branch will collect information regarding the financial interests of the same-sex spouse of a federal employee who is subject to public or confidential filing requirements."

"At NIH, some people in same-sex relationships have voluntarily been reporting their spouse's assets," said Holli Beckerman Jaffe, director of the NIH Ethics Office.

The change brought about by Windsor will have some immediate effects. An NIH employee who files an OGE-278 or 450 report or who is a clinical investigator must report the acquisition of a financial interest in a substantially affected organization (SAO) within 30 days of the acquisition by filing the HHS Form 717-1. All acquisitions of SAOs made by the employee, his/her spouse and minor children must be reported on this form. The acquisition may occur, for example, through purchase, marriage or inheritance.

An employee acquires an SAO holding when he or she marries a person who owns stock in an SAO. So now, an NIH employee whose marriage has been recognized as a result of Windsor must file Form 717-1 to report newly acquired SAOs. Also, Windsor will expand those OGE-278 report filers who need to file an OGE-278-T to report transactions made by their spouses. Similarly, the Windsor decision will affect the annual OGE-278 and 450 filings due in 2014.

The receiving ethics offices review these filed forms to verify there are no conflicts of interest between the employee's assigned NIH duties and his or her personal and imputed financial interests.

"Under the government's ethics rules, the assets of both people in a married couple are identical," said Jaffe. "You can't participate in a government matter if that matter affects your or your spouse's financial interests."

For example, if Joe is an NIH researcher testing a corporate product, it's likely a conflict of interest if he or his spouse had stock in that company above the *de minimis* level and the research affected that financial interest. Similarly, if you're a grants officer and your spouse has a university research grant, ethics rules most likely would bar you from having that grant in your portfolio.

The Windsor decision only affects same-sex married couples and excludes from its coverage federal employees in a civil union or domestic partnership other than a marriage.

Before the relevant section of DOMA was overruled, same-sex married couples did not have to disclose the spouse's finances. Since the ethics rules did not require the disclosure of such spouse's finances nor include those finances in the subsequent conflicts analysis, ethics offices were not considering those finances in ethics decisions.

Jaffe said, "Reports will continue to be reviewed as they have been in the past, taking into consideration the effect of the Windsor decision." The ethics program has circulated guidance to make all employees aware of these changes.

For the implications of the DOMA decision on Clinical Center patients and visitors, visit www.cc.nih.gov/participate/_pdf/guidance_on_doma_decision.pdf.

Research Festival Takes Over Bldg. 10, Oct. 7-11

The 2013 NIH Research Festival, the annual showcase of the Intramural Research Program, will be held Oct. 7 to 11. This year's theme is "60 Years Onward: The Double Helix in the Clinical Center." The festival kicks off with an opening plenary session at 9:15 a.m. Monday, Oct. 7, in Masur Auditorium. The plenary will include reflections on NIH clinical genetic research by NIH director Dr. Francis Collins and Clinical Center director Dr. John Gallin, followed by scientific talks by Drs. Daniel Kastner, Julie Segre and Neal Young.

This year's festival will be held entirely in Bldg. 10. Concurrent symposia and poster sessions will be held in Masur Auditorium, Lipsett Amphitheater and the new FAES Academic Center. In addition to the more than 100 talks and 400 posters, the festival features a special scientific directors' poster session and cooking contest on Monday afternoon. Come by and see what your directors have been up to in their labs—and kitchens.

Other highlights include the NIH Green Labs Fair on Oct. 8 and a food festival for a nominal fee on Oct. 8 and 9. The Technical Sales Association vendor tent show will be on Oct. 10 and 11 in parking lot 10H.

Note that no festival program will be printed this year. Visit http://researchfestival.nih.gov for the full schedule and downloading options. Posters with QR codes will direct your mobile devices to the schedule.

GATES

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The Gates Foundation also partners with the Foundation for the National Institutes of Health to support global health research. Through this collaboration, ongoing programs are studying diseases such as malaria, enteric infections, tuberculosis and HIV/AIDS, as well as training researchers and medical personnel in the developing world.

Bill Gates will deliver the annual Barmes Global Health Lecture, "Why the Future Needs Biomedical Innovation," on Oct. 7.

The recipient of numerous honors, Gates recently earned two special awards. On Sept. 9, the Albert and Mary Lasker Foundation announced that it had selected Bill and Melinda Gates as recipients of the 2013 Lasker-Bloomberg Public Service Award for their achievements in applying research and innovations to improving the lives of millions of people in developing countries. Last April, the National Academy of Sciences presented Bill and Melinda Gates with the 2013 Public Welfare Medal for improving the lives of millions by applying science to some of the world's most difficult global health challenges.

Gates also continues to serve as chairman of Microsoft, the company he co-founded in 1975 after leaving Harvard University in his junior year. He also is the founder of Corbis, which is developing a comprehensive digital archive of art and photography from public and private collections around the globe. In addition, he is a member of the board of directors of Berkshire Hathaway Inc.

The annual Barmes lecture was established in 2001 to honor the late David Edward Barmes, who was a special expert for international health at NIDCR and a longstanding World Health Organization employee. He was an ardent supporter of global health and devoted his life to research aimed at improving health for people in low-income countries.

The National Institute of Dental and Craniofacial Research and the Fogarty International Center cosponsor the lecture series. This year's lecture will be videocast at http://videocast.nih.gov.

NINR director Dr. Patricia Grady (front, c) and NINR's 2013 Fatigue and Sleep Methodologies Boot Camp participants

NINR 'Boot Camp' Explores Science of Fatigue, Sleep

This past summer, graduate students, faculty and clinicians from across the country gathered at NIH for NINR's 2013 Fatigue and Sleep Methodologies Boot Camp. The 1-week intensive training program provided an opportunity to engage with experts in the field, learn about the science of sleep and fatigue and incorporate novel methodologies into research.

"NINR has long recognized the link between sleep and fatigue and a number of health-related symptoms, diseases and disorders and supported research that investigates these associations," said NINR director Dr. Patricia Grady, citing several examples from NINR and trans-NIH funded research. "The institute offers this training course to inculcate the science, prepare the next generation of scientists and support advances in this important area of research."

Nearly 70 students from across the country, representing 46 institutions, completed this year's program. Trainees described the program as "enlightening and helpful," indicating that it helped inspire new research ideas "for dissertation and beyond" and that the broad academic audience allowed for networking opportunities.

"The boot camp is an exemplar of interdisciplinary and inter-professional scientific collaboration," said Grady. "I am pleased that our institute can provide this opportunity."

NINR's 2014 Boot Camp, scheduled to take place next August, will focus on "Big Data in Symptoms Research." Registration will open in January 2014. For more information, visit www.ninr.nih.gov/bootcamp.

Three Decades Later

Diabetes Study Volunteers Still Find Reward in Participation

By Amy F. Reiter

Thirty years ago, Elizabeth Rude joined a type 1 diabetes study called the Diabetes Control and Complications Trial so she could get the free supplies. What she received from participating in the NIDDK-funded DCCT and its follow-up, Epidemiology of Diabetes Interventions and Complications, was so much more.

"I am a much healthier person because of participating in this study," Rude said. "I have had type 1 diabetes for 38 years and I have no complications. I attribute this to being on intensive insulin therapy for so long and having such excellent support from the folks at the study."

Her fellow participant Judi Boland concurs. "I have learned so much about my condition and how to take the best care of myself to avoid complications," she said.

In addition to improving her own health, Boland's participation and that of the other study volunteers has paved the way to crucial knowledge about the long-term effects of early intensive treatment for type 1 diabetes.

At a symposium for the 30th anniversary of the DCCT/EDIC, held recently as part of the American Diabetes Association's scientific sessions, Rude and many other participants—along with hundreds of diabetes scientists and practitioners—heard the latest results of the study. Nearly two decades after the randomized trial ended and all participants were transitioned into intensive therapy, participants initially in the intensive therapy group were about 60 percent less likely to have heart disease and stroke, 50 percent less likely to have impaired kidney function and 50 percent less likely to be in the severe, vision-threatening stages of diabetic eye disease.

"By following people for 30 years, we've found out incredibly important things, both about the effects of the therapy and also about the course of type 1 diabetes in today's world with contemporary therapy. The results are very hopeful," said Dr. Judith Fradkin, director of NIDDK's Division of Diabetes, Endocrinology and Metabolic Diseases. "Diabetes is a lifelong disease, so what matters to people is what's going to happen over the course of their life. With this study, we've shown that about 6.5 years of early intensive therapy pays continuing dividends over several decades—in healthier lives."

DCCT participants were initially randomly divided into two groups. About half received intensive therapy and the other half the standard therapy of the time. Rude was randomly assigned to the intensive treatment group, Boland to the standard. After the DCCT ended and EDIC began, the standard therapy group received training on intensive therapy. Both groups then received diabetes management from providers of their choosing, most using intensive diabetes treatment, which—thanks to the DCCT results—has become the improved standard treatment.

Participants in the NIDDK-funded Diabetes Control and Complications Trial and its follow-up, the Epidemiology of Diabetes Interventions and Complications, celebrate 30 years of the landmark trial.

PHOTO: PETER PAPOULAKOS

Dr. Saul Genuth, professor of medicine at Case Western Reserve University, has helped lead the study from the beginning. "This 30-year (and still counting) study shows the scientific and clinical power of the partnership between loyal research participants, investigators and sustained sponsorship by the NIDDK to improve understanding and outcomes of a once-crippling major disease," he said.

Both Rude and Boland said the volunteer experience was rewarding in ways beyond health. Both formed a close bond with nurse Barbara Batey Schaefer at Northwestern University, one of the study sites. "Any time I have questions about my health (diabetes or otherwise), I contact her," Boland said. "Barb came to my wedding—she is a good friend."

Boland said she'd encourage anyone interested in volunteering for an NIH-funded clinical trial to do it. "It's worth every minute spent filling out paperwork, answering questions, getting all sorts of medical tests done," she said. "The results of the trial might change the course of medical treatment and improve the life of someone in the future."

For Rude, hearing the results gives her own experience even greater impact. "It is great to be reminded that what I and all the participants have done is a huge deal and has made the lives of countless others better and healthier," she said. "How many people can say they've been a part of a study that has changed the way a disease is treated across the entire country?"

EXPO

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***Above, from l**:*
Ana Marie Jenkins gets NIH'ers moving with her step aerobics and Zumba classes.

Massage therapists from the Sang Chiropractic Center work out the kinks on sore muscles.

***Below, l**:*
Members of the R&W Judo Club demonstrate this Japanese martial art in the auditorium.

***Below, r**:*
Rebecca Coa, coordinator of the Fit+ Program, and Ahmed Gadallah, CrossFit Mutation coach, staff an info table.

PHOTOS: BILL BRANSON

side agencies to host this employee appreciation event. The goal is to help build a culture in which safety and health become a round-the-clock mindset.

"Off-the-job health and safety is as important as, and overlaps with, an on-the-job health and safety focus," said Larry Johnson, chief of the Community Health Branch, ORS. "[We want staff to] understand that maintaining or improving good health, physical fitness, nutrition and safety practices will prevent or reduce injuries and illnesses."

Staying safe at work and at home involves a bit of knowledge and preparation. Safety education stations lined the Natcher hallway with tips on lab safety, from wearing protective gear to proper chemical storage and protection from hazards such as fire and radiation. The Department of Labor's OSHA displayed pictograms designed to alert about toxicity dangers. Other helpful information touched on CPR basics, ergonomics and pedestrian safety.

Judith Healy, an industrial hygienist at the Defense Intelligence Agency, talked with NIH'ers about workplace safety. "Have a plan," she advised. "All equipment has a procedure so you need to know what protective equipment you need before operating it. Do a hazard analysis to prevent injury and don't take shortcuts, because that's how people get hurt."

It's also important for supervisors to oversee worker safety. "Supervisors must brief and train employees in advance so a new procedure doesn't start without the employee knowing the rules and hazards," said Healy. "Supervisors must lead by example."

Meanwhile, the downstairs level of Natcher was transformed into a health fair. In the auditorium, some staff tried out country line dancing and tango dancing; some watched judo and other martial arts demonstrations. Conference rooms were converted into exercise classrooms offering yoga, Zumba, kickboxing and spinning. In one room, health screenings checked employees' blood pressure, vision, skin and bone density. Farther down the hall, NIH'ers lined up to receive chair massages.

In another room, fitness assessments tested body mass index, strength and flexibility. Robert Geter, personal trainer and manager of the Rockledge Fitness Center, conducted the assessments and underscored the importance of exercise. He said NIH fitness center users enjoy the convenience of classes so close by. "They come down for the class, freshen up, then get back to work." To maximize healthy results, he advocated a combination of aerobics, strength training and eating right.

Staff sampled healthy foods, from grilled fruit kebabs to apple farro salad with chicken. These and other fast, healthy recipes are posted at www.ors.od.nih.gov/pes/dats/wellness/Documents/superfoods%20recipes.pdf.

Several ICs offered wellness tips. NEI staff advocated the importance of dilated eye exams. The results alert us to early stages of common eye diseases for which there often are no warning signs. NIDCD offered colorful fact sheets to educate about protecting our ears from excessive and prolonged loud noise.

"Get engaged and lead by being a positive example," said Johnson. "Be healthy, safe and happy and others will react in the same manner."

NIMHD Course Provides Research Tools to Combat Health Disparities

By Gerda Gallop-Goodman

The 2013 NIMHD Translational Health Disparities course—Integrating Principles of Science, Practice and Policy in Health Disparities Research—drew a diverse group of health care and public health professionals, researchers, scientists and members of community- and faith-based organizations. They traveled from around the globe to learn about ways to eliminate health disparities.

Dr. Julie Reynolds, a dentist from Iowa, says the course will enable her to integrate oral health advocacy and research with general health and translate research findings into action. Dr. Yvette Paulino, a nursing professor from the University of Guam, hopes to reduce health disparities there and in neighboring Micronesia and involve these populations in long-term research studies to better understand health disparities.

"This course demonstrates that health disparities research is now a recognized field in the scientific community," said NIMHD director Dr. John Ruffin. "Yet it is a young, rapidly growing transdisciplinary scientific field that will benefit enormously from this gathering of distinguished scholars and researchers."

The National Institute on Minority Health and Health Disparities selected 90 scholars from 450 applications—the largest class and number of applications to date.

Of the participants, 49 came from academia, 15 from community-based organizations, 10 from NIH, 8 from other federal agencies such as the Department of Veterans Affairs and the Agency for Healthcare Quality Research, 4 from public entities including Michigan department of community health and Utah department of health; and 4 from the private sector. The 2-week course included 12 modules on topics such as public policy, civil rights laws, economics, education, social and behavioral science, biology and genetics, bioethics, global and population health, environmental health, community-based participatory research and comparative effectiveness research.

In a session that examined health disparities from an economist's perspective, Dr. Tiffany L. Green of Virginia Commonwealth University detailed the lifelong detrimental effects of childhood poverty on educational attainment, adult health and economic status.

Nearly 4 days of sessions focused on the social

NIMHD director Dr. John Ruffin (front, c) and other course participants

determinants of health and health disparities in racial and ethnic populations; rural, poor and medically underserved populations; immigrants; sexual minorities; and persons with disabilities. Discussions covered topics on the history, culture and economics of social status, race and identity on population health, as well as gaps in research and strategies for improving the overall health of these populations.

"This course is a great opportunity that every human being involved in service and health care should be exposed to in training," said Dr. Milangel Concepcion Zayas, a third-year resident physician in psychiatry at Georgetown University Medical Center.

"I practice clinical medicine and come from a biomedical perspective, so I had a feeling that stress is a factor in health outcomes, but this course has changed my perspective," said Dr. Lauracinne Jenkins, who studies infant and maternal mortality and morbidity. "Now I am sure stress plays a tangible role—it has a physiological and biological impact on health. Through this course, I now have a toolkit to address this with patients and I will talk to them about what they can do to decrease stress in their lives."

"This course brings truly outstanding scholars, clinicians and researchers to the NIH representing an even wider array of disciplines, professional interests, countries of origin and racial and ethnic backgrounds," said Ruffin. "As a result of this experience, it is our hope that they will return home and become foot soldiers and ambassadors for health disparities."

EAMC Names New Chairs

The NIH Extramural Administrative Management Council recently designated NCI's Kristie Hill (r) and NIDCD's Lisa Portnoy (c) as incoming EAMC chair and vice chair, respectively. They will serve for a year, starting in October. Nikki Lattimore (l) of NBS will replace NIAID's Veree Bampoe-Addo as agenda chair. The council serves as a resource for communicating the latest NIH administrative issues and developments to the extramural administrative community. It provides a forum for AOs to focus on advances in administrative services in support of NIH science.

"Like all neurobiologists, I would like to understand the human brain," Bargmann quipped, "particularly my husband's."

PHOTOS: BILL BRANSON

BARGMANN

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talk, NIH director Dr. Francis Collins expressed gratitude for her support of a brain-mapping effort due to begin in FY 2014: "We are particularly grateful to Cori for putting her lab work on hold for the last 3 months" so she could co-lead the BRAIN Initiative working group and help determine its scientific goals. "Next summer, we hope to announce a 5-year plan for the initiative. It is a very exciting time in neuroscience."

The excitement is founded on reasoning that Bargmann, a professor at Rockefeller University, made explicit for a Masur Auditorium audience: break a problem down to its simplest elements in an effort to discover the biological basis of behavior.

Animals are always learning and exploring, and display a range of different behaviors, Bargmann explained, but "there are common themes, even when the outward manifestations appear different."

For example, there appear to be underlying rules, across species, regulating when and how mating and courtship behavior is expressed. Once a bundle of joy emerges, there are additional rules—based on biology and expressed at a molecular level—that govern caring for offspring.

It just so happens that the first mammalian neuropeptides ever discovered and purified—oxytocin and vasopressin—are crucial to such basic behaviors. Bargmann went so far as to call oxytocin the "one-stop shopping of mammalian behavior at birth." It turns out that *C. elegans* has a molecule like oxytocin, which investigators have dubbed nematocin (nematode oxytocin).

But you don't get to the warmth and nurturing associated with oxytocin without a related peptide linked to mating and aggression—vasopressin, the "She's mine—beat it!" (or, alternately, the "You Ain't Woman Enough to Take My Man") neuropeptide.

In an effort to understand how neuropeptides regulate mating behavior, scientists have conducted experiments showing, Bargmann said, that both oxytocin and vasopressin are "elements of all aspects of mating behavior." This happened "very early on in animal evolution," she said, and extends across the animal kingdom, all the way to man.

"Like all neurobiologists, I would like to understand the human brain," Bargmann quipped, "particularly my husband's."

Bargmann is convinced that, with the complete neural wiring diagram of *C. elegans* already in hand, science is primed for an ascent of that Everest of biology, the human brain, with its 10 billion neurons and 10 trillion synapses. "Worm studies will help us along the path to the brain," she said.

Her own recent focus has been on roundworm foraging behavior as a lens through which one can learn about the structure of neuromodulatory circuits. Like a federal worker along about noontime, worms have bouts of high activity and exploration as they roam around seeking nourishment. This is punctuated with periods of rest or quiet wakefulness once sated.

Neuroscientists have discovered that two important molecules drive these states: serotonin, which promotes "dwelling," and PDF (pigment dispersing factor), a sort of reciprocal to serotonin that makes a critter restless.

Bargmann and a team of investigators that she credits as the real reason she has won such recent scientific honors as the 2013 Breakthrough Award in Life Sciences and the 2012 Kavli Prize in Neuroscience ("My success in science has been due to my good taste in people," she said), are meticulously linking specific molecules to specific behaviors, discerning elemental circuitry and discovering important new neuromodulators.

"We're never going to teach the worm to play the piano or speak French," she allowed, but *C. elegans* will serve as an essential base camp on the way to the summit of the human brain.

Bargmann's entire talk, "Neuromodulatory Circuits and Motivated Behavior," may be viewed at http://videocast.nih.gov/summary.asp?Live=13153.

digest

Lifestyle Intervention Improves High Schoolers' Health, Social Skills, Grades

A teacher-delivered intervention program promoting healthy lifestyles improved health behaviors, social skills, severe depression and academic performance in high school adolescents, a study has found. Routine integration of such programs into health education curricula in high school settings may be an effective way to prevent high-risk teen populations from becoming overweight or obese and could lead to improved physical health, psychosocial skills and academic outcomes, according to the study.

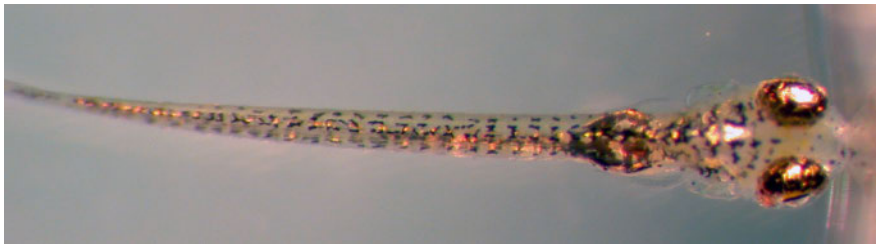
The study, supported by the National Institute of Nursing Research, appears in the online September issue of the *American Journal of Preventive Medicine*. It is one of the first studies to report multiple immediate improvements that were sustained over time using a teacher-delivered, cognitive-behavioral skills-building intervention program incorporated into a high school health education class. Cognitive-behavioral skills training teaches coping techniques, social functioning skills and problem-solving skills.

"Nutrition and physical activity-based interventions are often tested when it comes to preventing obesity, but mental and psychosocial health can also be contributing factors," said NINR director Dr. Patricia Grady. "This NINR-supported study highlights the importance of an evidence-based lifestyle intervention that addresses the complex interplay of these factors."

Fishing for New Epilepsy Model, Scientists Reel In Potential Drug

According to new research on epilepsy, zebrafish have certainly earned their stripes. Results of a study in *Nature Communications* suggest that zebrafish carrying a specific mutation may help researchers discover treatments for Dravet syndrome (DS), a severe form of pediatric epilepsy that results in drug-resistant seizures and developmental delays.

Dr. Scott Baraban and his colleagues at the University of California, San Francisco, assessed whether the mutated zebrafish could serve as a model for DS and then developed a new screening method to quickly identify potential treatments for DS using these fish. The study was supported by the National Institute of Neurological



Wild-type and larval zebrafish carrying a mutation in the Scn1a gene (mimicking a severe form of pediatric epilepsy) were used for drug screening.

PHOTO: SCOTT BARABAN/UCSF

Disorders and Stroke and builds on pioneering epilepsy zebrafish models first described by the Baraban laboratory in 2005.

Dravet syndrome is commonly caused by a mutation in the Scn1a gene, which encodes for Nav1.1, a specific sodium ion channel found in the brain. Sodium ion channels are critical for communication between brain cells and proper brain functioning.

The researchers found that the zebrafish that were engineered to have the Scn1a mutation that causes DS in humans exhibited some of the same characteristics, such as spontaneous seizures, commonly seen in children with DS. Unprovoked seizure activity in the mutant fish resulted in hyperactivity and whole-body convulsions associated with very fast swimming. These types of behaviors are not seen in normal healthy zebrafish.

The findings suggest that Scn1a mutant zebrafish may serve as a good model of DS and that a drug screen created by the researchers may be effective in quickly identifying novel therapies for epilepsy.

Researchers Help ID New Metabolic Disorder Caused by Faulty Gene Expression

National Human Genome Research Institute researchers participating in an international study with colleagues at the University of Colorado in Denver, McGill University in Montreal and University Children's Hospital in Zurich have described a new disease involving a defect in the body's ability to process vitamin B12, or cobalamin. The rare inherited disorder that has only been found in boys, can cause severe neurological symptoms, including developmental delay, epilepsy and brain malformations.

Newborns are screened for cobalamin metabolic defects but the new disorder had not previously been distinguished from a related condition, known as cobalamin C deficiency, or *cblC*. With their discovery, published Sept. 5 in the *American Journal of Human Genetics*, the researchers located a gene alteration on the X chromosome that regulates expression of a critical enzyme in the metabolism of cobalamin. The new disorder is called cobalamin X deficiency (*cblX*).

"*CblX* is a new class of metabolic error that derives from transcriptional dysregulation," said co-author Dr. Charles Venditti, investigator in NHGRI's Genetic and Molecular Biology Branch. "This mechanism has not been observed in any other inborn error of metabolism."

Community College Day Set, Oct. 25

The NIH Office of Intramural Training & Education will hold the 5th annual Community College Day on Friday, Oct. 25 from 8 a.m. to 4 p.m. at Natcher Conference Center and Lister Hill Auditorium, Bldg. 38A. The event will provide community college students and faculty an opportunity to visit the campus and learn about careers and training opportunities in biomedical and health care fields. For registration and more information, visit www.training.nih.gov.

milestones

Dr. Sally Rockey, NIH deputy director for extramural research, recently won the Joseph A. Carrabino Award from the National Council of University Research Administrators.

PHOTO: ELISE RABIN

Rockey Wins Carrabino Award for Research Administrators

By Manju Subramanya

For universities submitting grant applications to federal agencies, variations in grants policy can cause major headaches, noted Dr. Carol Blum, director of research compliance and administration at the Council of Governmental Relations, an association of research universities.

So Blum is appreciative of the work being done by Dr. Sally Rockey, NIH deputy director for extramural research. "She has worked really hard to make sure agencies have a common approach," said Blum, who nominated Rockey for the Joseph A. Carrabino Award.

The award, from the National Council of University Research Administrators (NCURA), recognizes a federal partner who has made a significant contribution to research administration.

"@NCURA today, honored to receive Joseph Carrabino award—excellence in university/government relations," a delighted Rockey tweeted at the awards luncheon in Washington D.C., recently.

Rockey leads the NIH Office of Extramural Research, which sets grants policy, ensures compliance and integrity, electronically processes grants and is responsible for stewardship of the NIH research grant portfolio. With over 80 percent of NIH's $30.9 billion annual budget going towards funding medical research worldwide through grants, OER has a major responsibility.

Rockey has the difficult task of balancing the mission of NIH and the concerns of the biomedical research enterprise at large. "You have to be quick on your feet, pay attention to both sides and come to solutions that will benefit both the federal government and the research community," she noted.

Rockey has had a hand in major fed-wide efforts to streamline research administration—through, for example, the proposal for a single researcher profile with SciENcv and an effort to bring all information on awarded grants together so that university partners can find it through Star Metrics.

She has won high praise for her work co-chairing the A-21 task force that recommended ways to the Office of Management and Budget to reduce burdens and costs for academic research.

"Sally is a tireless and enthusiastic leader, with the superb capability of balancing the interest of the federal government for accountability and the interest of academia for simplicity," noted Gil Tran, an OMB senior technical manager, in his nomination of Rockey.

Rockey's current focus includes the biomedical workforce initiative, looking at the pipeline of researchers and examining training programs.

She has also won kudos for engaging with the research community through her blog Rock Talk. "What a buzz about her blog," Blum said. "It is the kind of engagement with the community that has done more for NIH in terms of reputation in research administration than anything else."

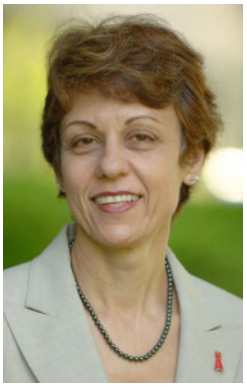
Rockey's love of biology came from her mother, a teacher who loved the outdoors and painting landscapes. Rockey received a Ph.D. in entomology from Ohio State University and then took a job at the U.S. Department of Agriculture, running an entomology competitive grants program. She soon climbed the ladder, leading the extramural competitive grants program and even spending her last couple of years at the agency as chief information officer.

With 19 years at USDA and the Presidential Rank Award in 2004, Rockey was recruited by NIH in 2005 as deputy director of OER and assumed the top job in 2008.

Rockey is married to Sam Stribling, an environmental consultant. Their son, Jimmy, is studying at Savannah College of Art & Design. Rockey is also an avid bridge player, book club participant, a gym regular and can be spotted at almost every local Bruce Springsteen concert (50 and counting), singing along until she is hoarse.

"Springsteen? I'm not surprised. Like him, she is there working for the little folks," Blum said with a chuckle.

NHLBI Mourns Loss Of Vascular Science Expert Skarlatos



Dr. Sonia I. Skarlatos, deputy director of the NHLBI Division of Cardiovascular Sciences, passed away on Aug. 6 at age 59.

During her 20-year career with NHLBI, Skarlatos became a distinguished national and international leader in vascular science. She helped develop several gene and cell

therapy programs and was one of NIH's most respected leaders in advancing an agenda to support translational research. In 2012, she was awarded the inaugural Distinguished Service honor from the American Society of Gene and Cell Therapy.

"For many of us, Sonia was a role model as a selfless, dedicated public servant," said NHLBI director Dr. Gary Gibbons. "She was highly esteemed by colleagues throughout our internal community and the greater extramural community. Sonia will be remembered for her innumerable contributions to the health of the nation as well as for her thoughtful and caring personality."

Skarlatos earned her undergraduate and master's degrees in biology from Shippensburg University in Pennsylvania, followed by her Ph.D. in physiology from Pennsylvania State University.

She joined NHLBI in 1985 as a senior staff fellow in the section of experimental atherosclerosis. In 1992, she became a health science administrator in the Vascular Biology Program, launching a gene therapy data safety and monitoring board and coordinating gene therapy research across NHLBI. She then served as acting director of the cardiovascular division before becoming its deputy director in 2004.

Skarlatos's concern about the gap between discovery and clinical testing led her to establish the Science Moving Towards Research Translation and Therapy Program, which assists with the translation of new synthetic, natural or biologic treatments for heart, lung and blood diseases from the scientific community to the clinic. She also managed the Cardiovascular Cell Therapy Research Network, which promotes and accelerates the evaluation of new cell therapy treatment strategies for people with cardiovascular disease.

Skarlatos published numerous influential papers throughout her career. In the past year alone, she co-authored eight articles, including a seminal report in the *Journal of the American Medical Association* on the results of a clinical trial testing the use and timing of bone marrow mononuclear cells on left ventricular function after acute myocardial infarction. She also co-authored a recent paper on the value of cell therapy research for preventing heart failure after myocardial infarction and for treating patients with existing heart failure.

"Sonia offered incredible leadership and contributions to all of us, to the scientific community and to the nation," said Dr. Michael Lauer, director of NHLBI's Division of Cardiovascular Sciences. "Beyond her professional interests and accomplishments, we will remember her as a dear dedicated friend, colleague, advisor, mentor and confidant. Being able to work with and learn from Sonia was a great blessing. She will be deeply missed."

Skarlatos is survived by her husband, Dr. Howard Kruth, an investigator in the NHLBI Division of Intramural Research; daughter, Roxane Burkett, in NHLBI's Office of Acquisitions; stepdaughter, Rachel Kruth; mother, Sylvette; brother, Stephen; and grandchildren, Patric and Sofia Burkett.

NHLBI Alumnus Letendre Mourned

Dr. Carol H. Letendre, 75, former deputy director of NHLBI's Division of Blood Diseases and Resources, died Aug. 22 of septic shock and pneumonia. She retired in March 2001 and had enjoyed volunteer work in recent years at the National Aquarium in Baltimore.

Letendre, a biochemist, spent 20 of her 32 years at NIH at NHLBI. She helped guide research that led to such advances as an understanding of the role of blood clots in heart attacks, a national blood safety program and new developments in the management of hemophilia and sickle cell disease.

Letendre also contributed to the development of NHLBI's stem cell research and stem cell transplantation programs. Her interests were treatment and cure of hemophilia and prevention and treatment of arterial thrombosis.

Early in her NIH career, she was a research chemist in NICHD's Laboratory of Biomedical Sciences. She became director of the NIA dermatology program in 1980, marking the start of a 20-year career as a health scientist administrator. In 1981, she joined NHLBI as executive secretary of the institute's research manpower review committee in the Division of Extramural Affairs. Two years later she became program administrator for the DBDR Hemophilia and Platelet Disorders Program, and in 1986 she was named the division's deputy director. She won an NIH Director's Award in 1999 for her work as a member of the trans-NIH zebrafish coordinating committee.

She is survived by two sons, Dr. Kenneth A. Letendre of Albuquerque, N.M., and Robert W. Letendre, Jr. of Germantown, Md.; a brother, Richard Hilary of Tallahassee, Fla.; a sister, Sue Hilary Castillo of Albuquerque, N.M.; and by her former husband, Robert W. Letendre, Sr. of Potomac, Md.

NIAID's Barillas-Mury Wins Sanofi-Institut Pasteur Award

Dr. Carolina V. Barillas-Mury, chief of the mosquito immunity and vector competence section in NIAID's Laboratory of Malaria and Vector Research, has received a 2013 Sanofi-Institut Pasteur Award for her outstanding contributions to understanding the mosquito immune responses that affect malaria transmission. Recently, Barillas-Mury and her research group discovered a gene, called Pfs47, that enables the malaria-causing Plasmodium falciparum *parasite to elude the mosquito immune system. She and her colleagues are now investigating ways to block the function of this key gene so the mosquito immune system can detect and eliminate the parasite before it is transmitted to people.*

Music's Healing Powers

NSO Performance Resonates Through CRC Corridors

By Dana Steinberg

It's often said that music is good for the soul. The belief that music has healing properties set the stage for the National Symphony Orchestra's new community initiative, "NSO Sound Health," which kicked off with an NSO chamber orchestra performance in the atrium of the Clinical Research Center on Sept. 11.

Hundreds of NIH staff, patients and visitors gathered for a 50-minute classical performance of five works. The rich sounds filled the 7-story space and drifted upward, permeating much of the building. Many people lined the hallways to watch and listen from the floors above, not to mention patients listening from their rooms.

The CRC atrium is a fortuitous setting for such a concert. "Music flows in all our corridors, into patient wards, reaching those in beds who cannot come," said CC director Dr. John Gallin in welcoming remarks.

The orchestra performed works by Rossini, Mozart, Barber and Prokofiev under the direction of conductor Ankush Kumar Bahl. Musical selections ranged from light and lively to hauntingly beautiful. Many in attendance could be seen wiping tears from their eyes during the performance of Barber's *Adagio for Strings*. Hearing this ethereal piece on 9/11 made it even more poignant.

Also that day, the NSO's violin ensemble, Viva Violins, performed "From Baby Talk to Mozart" at the Children's Inn at NIH, followed by a Q&A with inn residents and an instrument petting zoo.

"The musicians of the NSO are known throughout the country for their artistry and their joy in sharing that artistry with the community," said NSO Executive Director Rita Shapiro. "There is no better way to continue that commitment to community than through performing at the Washington area's hospitals."

At the launch of the NSO Sound Health initiative, the CRC's atrium and hallways overflowed with eager listeners, a testament to the need for such a project. The NSO plans to hold an orchestral concert each year at a selected hospital or health-related venue and extend its reach with smaller ensembles and other activities.

"We're grateful to the NSO for choosing NIH to launch their Sound Health initiative," said NIH director Dr. Francis Collins, "and hope this marks the beginning of a long, fruitful relationship."

***Top**:*
Conductor Ankush Kumar Bahl (c) and the NSO chamber orchestra acknowledge the crowd's applause.

***Middle**:*
NIH director Dr. Francis Collins (l) and Clinical Center director Dr. John Gallin (r) offer brief remarks before the concert.

At left is the crowd as seen from an upper floor of the atrium, and a view of passersby who took in the music from high above the first floor.

PHOTOS: BILL BRANSON