

Data Is Critical for Better Care, Expanded Access, Says Gawande

BY ERIC BOCK

There are 60,000 different ways the body can fail and medicine has developed 4,000 surgical procedures and 6,000 drugs to treat those failures, according to surgeon, *New Yorker* staff writer and public health researcher Dr. Atul Gawande.

“That volume of knowledge and skill has exceeded the knowledge of any one clinician to know how to manage it. We are all part of groups of people delivering health care,” he explained during a wide-ranging discussion with NIH director Dr. Francis Collins in Masur Auditorium recently.



Dr. Atul Gawande speaks in Masur Auditorium.

Gawande began by relaying one of the best pieces of advice he received: say yes to everything before age 40. The idea is “you are experimenting in your life and paying attention to what really gives you energy.” What he loves is solving problems related to “how we deliver health care and access to health care” and “understanding how we create better outcomes of care.”

Over the past century, there have been many breakthroughs in science and medicine. In many cases, however, those breakthroughs aren’t applied in patient care, Gawande said.

Typically, the response when doctors fail to do something properly has been more training. If training doesn’t work, doctors face mandates, pay-for-performance programs and malpractice regulations, he said. These programs have only modest effects.

Gawande advocates a different

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Annual BBQ helps camp with a cause. See p. 12.

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Dr. Bradford Wood, director of the CC interventional radiology section, is filmed by the Discovery Channel.

PHOTO: MOLLY FREIMUTH

TV Series on Bldg. 10 Debuts Aug. 10 on Discovery

On Thursday, Aug. 10, the Discovery Channel will premiere a 3-part documentary series on the Clinical Center. The program, called *First in Human*, highlights the innovation and hard work that takes place in the Clinical Center, depicts how challenging illnesses are diagnosed and treated and provides an inside

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Staff stop by the NIH Library’s booth to try out the virtual reality simulator.

FOR YOUR HEALTH

NIH Expo Celebrates Safety, Wellness

BY DANA TALESNIK

For all that NIH’ers do to advance the health of others, it was invigorating for staff to have a day to reflect on their own health and have some fun in the process.

Hundreds of employees stopped by the Clinical Center’s south lobby and lawn on

SEE **WELLNESS**, PAGE 8



NIDDK's Tycko Elected to American Academy of Arts and Sciences

Dr. Robert Tycko is among 228 new fellows elected to the American Academy of Arts and Sciences.

Tycko is chief of the solid-state nuclear magnetic resonance and biomolecular physics section, Laboratory of Chemical Physics, NIDDK. He was elected into the section on chemistry.

Other fellows from the 2017 class include singer-songwriter John Legend, actress/comedian Carol Burnett and music journalist Greil Marcus.

The academy, established in 1780 by founders of the nation, undertakes studies of complex and emerging problems. Current projects focus on science, technology and global security; social policy and American institutions; the humanities and culture; and education.

New fellows will be inducted at a ceremony on Oct. 7 at academy headquarters in Cambridge, Mass.

7th Annual 'In Focus! Safe Workplaces for All' Photo Contest

Whether photography is your passion, hobby or just something you occasionally dabble in, the Office of Research Services, Division of Occupational Health and Safety (DOHS) invites you to be part of building and sustaining a positive safety culture at NIH through photography. You can contribute to the agency's safety effort by capturing or creating up to three images depicting safe workplaces or activities—e.g., laboratory workers using personal protective equipment, crossing guards on busy streets, construction workers using safety gear—and sharing them with ORS.

Your photos will be circulated within the NIH community through DOHS safety publications, pamphlets and posters.

First, second and third place photographs will be framed and prominently displayed outside the ORS director's office in Bldg. 31, then go on permanent display in the DOHS conference room in Bldg. 13. Winners will receive recognition and a framed certificate from NIH leadership.

The 2017 submission period is June 28 through Dec. 31. To learn more about the contest, official rules and the submission and selection process, visit <https://go.usa.gov/xNVmU>.



A group of visiting students bumped into NIH director Dr. Francis Collins on their way to NIAAA lab tours and the director was happy to oblige a photo opportunity.

PHOTO: CHIA-CHI CHARLIE CHANG

AAIP Youth Initiative Group Catches Collins for Photo Op

A group of American Indian high school students from across the country who were selected as part of the Association of American Indian Physicians (AAIP) National Native American Youth Initiative recently caught up with NIH director Dr. Francis Collins for a quick photo op. The students, who were in the Washington D.C., area July 1-9, spent July 3 and 5 on the NIH campus, listening to lectures presented by intramural and extramural staff. The trans-NIH initiative serves as an opportunity to showcase and introduce biomedical research in operation to high school students who come from communities that are most likely to be underrepresented in biomedical careers, such as those from American Indian and Alaska Native backgrounds. The event, coordinated by Dr. DeLoris Hunter of the National Institute on Minority Health and Health Disparities, provided laboratory tours, science lectures and networking opportunities for the scholars as a way to increase their access to medical and research career tracks.

There were 24 students total in the NIH contingent and a smaller group was walking across campus en route to NIAAA lab tours with Dr. Nancy Diazgranados when they spotted Collins. He happened to be awaiting a visit from a Capitol Hill group and was glad to pause for a photo with the students.

In addition to NIMHD and NIAAA, other partner ICs for the event were NIAID, NHLBI, NHGRI, CC, NINDS, NIBIB and NLM.



The larger NIH contingent gathers in the Clinical Center with AAIP counselors and staff.

PHOTO: GARY LANKFORD/AAIP

NIAID Writer Excels In Weekend Writing Competitions

BY ERIC BOCK

Claudia Wair is just getting started when most of NIH is heading home for the weekend. That's because she participates in competitions where she composes short stories, often beginning on a Friday and ending on a Sunday.

In July, she's entering two fiction writing competitions: the 2017 Flash Fiction Challenge organized by NYC Midnight and the *Fiction War* magazine summer competition. Both will require her to write, edit and submit a 1,000-word short story in a weekend based on a prompt she won't know until the battles start.

When she's not writing short stories over a weekend, Wair is a writer and editor in NIAID's News and Science Writing Branch in the Office of Communications and Government Relations. She has a master's degree in English literature with a concentration in creative writing from George Mason University and has worked in public relations and journalism since she was 20 years old.



NIAID writer-editor Claudia Wair has found success creating short stories in weekend writing competitions.

such as Grimms' Fairy Tales. Once she gets the prompt, she has 48 hours to write, edit and submit the story.

At the beginning, it's all mental work as she thinks about approaches. She might go

★ ★ ★

“Writing about science definitely helps when writing science fiction.”

-CLAUDIA WAIR

★ ★ ★

Wair thinks her job helps her write better stories. Good writing is good writing, she says, whether it's technical writing or fiction. She adds, “Writing about science definitely helps when writing science fiction,” which happens to be her favorite genre.

Typically, 2,000-3,000 writers from all over the world enter the competitions. The challenges usually require participants to write a 1,000-word story over the course of a weekend. At noon on Friday, she'll receive a writing prompt. Sometimes the prompts will give her a genre, subject and an object. Others only provide a sentence like “I can't leave her, she's already gone,” or a theme,

out for a walk or meet her friends for dinner. She'll go to sleep Friday with some possibilities in her head. The next day, the ideas usually flow and she's able to write quickly. At the start, however, she isn't sure where the story will go. Sometimes she'll reach a dead end and need to start fresh.

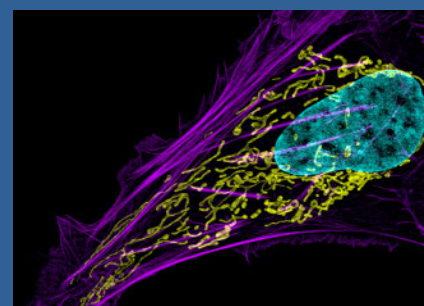
So far, she has entered 10 competitions. She's placed as high as 14th out of 2,500 writers in one competition and has had three other winning stories published by *Fiction War* magazine. She believes her previous experience helps her. Wair is learning to manage her time, to create interesting characters and plots in as little as 700

words, and to predict what judges look for in winning submissions.

Three years ago, she wanted a creative outlet. She always enjoyed writing fiction, but never had the time. So she began entering writing competitions. She counts Charles Dickens, Jane Austen, James Baldwin, Octavia Butler and Franz Kafka as favorite authors.

She prefers writing over 2 or 3 days because “the deadline forces you to do it,” she said.

What's next for Wair? Right now, she is in the process of compiling the short stories she's already written into a book. All she needs is an editor. She's also working on a novella, an Afro-centric fantasy. **R**



ON THE COVER: Osteosarcoma cell with DNA in blue, energy factories (mitochondria) in yellow and actin filaments, part of the cellular skeleton, in purple

IMAGE: DYLAN BURNETTE, JENNIFER LIPPINCOTT-SCHWARTZ, NICHD

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Editor: Rich McManus
Rich.McManus@nih.gov

Associate Editor: Carla Garnett
Carla.Garnett@nih.gov

Staff Writers:
Eric Bock • Eric.Bock@nih.gov
Dana Talesnik • Dana.Talesnik@nih.gov

Subscribe via email: listserv@list.nih.gov Follow: <http://nihrecord.nih.gov/>



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Turning Discovery Into Health



First in Human

CONTINUED FROM PAGE 1

look at the successes and even setbacks that are a part of experimental medicine.

NIH has worked with the Discovery Channel to produce the multi-part documentary featuring the amazing research, patient care, spirit and dedication that abounds within the walls of Bldg. 10.

First in Human represents the first time cameras have embedded in the hospital and followed first-in-human patients throughout their trial.

Narrated by actor Jim Parsons (*The Big Bang Theory*, *Hidden Figures*), the series begins Aug. 10 at 9 p.m. and continues on the 17th and 24th at the same hour.

John Hoffman, executive vice president of documentaries and specials for Discovery Communications, approached NIH in 2014 with the filming idea. He has a track record



At left, camera crew takes exterior shots of Bldg. 10's south side. PHOTO: MOLLY FREIMUTH.



At left, a Discovery Channel producer films Dr. John Tisdale of NHLBI before he goes into surgery at the Clinical Center. PHOTO: MOLLY FREIMUTH



Center, NCI's Dr. John Wunderlich shows a patient's cells to the camera. PHOTO: DONOVAN KUEHN
At right, NIH director Dr. Francis Collins with series narrator Jim Parsons PHOTO: JOHN BURKLOW

of producing documentaries with NIH, including *Sleepless in America*, *The Weight of the Nation*, *The Alzheimer's Project* and *Addictions*.

Three camera crews, made up of three production members each, videotaped staff and patients throughout the hospital every day for over a year. Patient arrivals, CT scans, procedures in the operating room, bone marrow biopsies, test results and more were filmed. More than 125 patients opened their lives to the cameras to document the reality of clinical trials. In addition, more than 1,100 staff and guests/family consented to participate as well. One thousand hours of footage were collected over 38 weeks of primary filming.

While providing technical assistance and guidance to the Discovery Channel to

aid the show's accuracy and success, the CC remained committed to protecting the privacy and safety of patients and staff. No one, patients or staff, was filmed without advance written, informed consent. Further, all Discovery staff working on-site—most of whom had previously filmed in hospitals—went through a special orientation and safety and privacy training. At the end of training, they signed an affirmation that they understood what was discussed and the importance of protecting patient privacy.

Inspired by the series, viewers can take action by participating in a trial, joining the NIH team by applying for a job or training opportunity, volunteering at the Clinical Center, donating to the NIH Blood Bank or collaborating with NIH on a research study.



At right, Discovery, in cooperation with NIH, held a screening of the new documentary May 2 in the Ronald Reagan Bldg. in Washington, D.C. Shown at the screening are (from l) John Hoffman, executive vice president of documentaries and specials at Discovery, Sen. Lamar Alexander (R-TN), Collins, Rep. Tom Cole (R-OK) and David Leavy, chief corporate operations and communications officer at Discovery. PHOTO: KEVIN WOLF/AP IMAGES FOR DISCOVERY COMMUNICATIONS



NINR director Dr. Patricia Grady (l), Dr. Suzanne Miyamoto (c) of the American Association of Colleges of Nursing, and Dr. Richard Ricciardi, senior nursing advisor at AHRQ, were among participants at a Nursing Community briefing on Capitol Hill.

NINR Participates in Capitol Hill Events

NINR director Dr. Patricia Grady recently participated in three Capitol Hill briefings on nursing science.

At a briefing on the “Power and Impact of Nursing Science” hosted by the Friends of the National Institute of Nursing Research, several nurse scientists, including Grady and Dr. Jessica Gill of NINR’s Tissue Injury Branch, discussed the importance of nursing research. Representatives of FNINR, several nursing organizations and congressional staff attended the event.

During National Nurses Week, the Nursing Community—a large coalition representing nursing constituencies in America—hosted a luncheon briefing series, “Transforming Health and Health Care: Nursing Workforce and Research.” Grady spoke at the event, which focused on the contributions of nursing science across the health care continuum.

Grady also spoke at a congressional briefing for staff of Reps. Henry Cuellar (D-TX) and Filemon Vela (D-TX), as well as a delegation from Texas higher education institutions, Rio Grande Valley Hispanic Chamber of Commerce and Cameron and Brownsville County representatives. Also participating in the session were Dr. Joan Wasserman of NIMHD’s Office of Extramural Research Administration and Neil Canfield of the National Science Foundation.



Neil Canfield of NSF, Grady (c) and Dr. Joan Wasserman take part in a briefing for Texas congressional staff members.

Fogarty Cheered by Supporters at CUGH Meeting

BY ANN PUDEBAUGH

Applause met the Fogarty International Center as it kicked off the recent Consortium of Universities for Global Health annual meeting held in Washington, D.C. In opening remarks, CUGH board chair Dr. Pierre Buekens of Tulane University told the 1,700 attendees that Fogarty has been an important champion for global health around the world.

NIH leaders discussed their research priorities during a plenary session moderated by FIC director Dr. Roger Glass. Dr. Anthony Fauci recalled that early in his tenure as NIAID director, he appreciated the global nature of infectious diseases and set out to organize his institute accordingly.

“Global health is integral to really everything we do at NIAID,” he said. Underpinning the success of the research he funds in low- and middle-income countries (LMICs) is the local scientific expertise cultivated by Fogarty. “If you look at the public health leaders in the developing nations throughout the world,” he said, “it’s stunning how many were Fogarty trainees at one time in their career.”

The global health agenda has expanded to include mental health, which poses a large and growing burden, said Dr. Pamela Collins, who directs NIMH’s global mental health portfolio. “What we learn in varied contexts and populations can also benefit us at home.”

NCI acting director Dr. Doug Lowy echoed the sentiment. An NCI trial of the HPV vaccine conducted in Costa Rica indicates that a single dose is sufficient to ward off cancer, which will result in huge savings globally, as well as in the U.S., where three doses had previously been recommended.

Having grown up with a global perspective, NHLBI director Dr. Gary Gibbons said he is looking to see where his institute can be the most catalytic. He believes there are numerous research opportunities in LMICs, including studying the impact of the growing popularity of a western diet on heart disease, environmental exposures that affect lung development in children, sickle cell disease and others.

Another conference session showcased the Fogarty Fellows and Scholars program, which provides early-career scientists with a year-long mentored research experience in a low-resource setting where there are active NIH-funded projects.

Dr. Hod Tamir of ICAP-Columbia University spent his Fogarty fellowship studying the benefits of social networks to women living with HIV in India. “It can’t be overstated what a wonderful impact this fellowship has had on my career, providing a bridge to this world that is so meaningful, with so many people from so many walks of life and with so many different areas of expertise,” he said. “It’s just incredible.”

Nalini Anand, Fogarty’s policy office director, organized a discussion on implementation science and the critical role it plays in moving scientific advances into policy and practice. Panelist Dr. Judith Wasserheit of the University of Washington said implementation science is “high impact” but its value is only beginning to be appreciated. She discussed the growing attention devoted to the topic, including conferences, publications and curricula devoted to nurturing this emerging field.

Wasserheit acknowledged the leadership role Fogarty has played in this arena. Anand agreed, noting “over the last 10 to 15 years, implementation science has really taken root and grown across the NIH.” More information about the conference is available at <http://bit.ly/cugh2017>.

GLOBAL BENEFIT



Fogarty grantees show their support by donning green bands during the Consortium of Universities in Global Health meeting.

PHOTO: ROGER GLASS



At left, Dr. Judith Wasserheit (l) speaks at a panel organized by FIC’s Nalini Anand (r). At right, NIH plenary includes (from l) FIC director Dr. Roger Glass, NCI acting director Dr. Doug Lowy, NIAID director Dr. Anthony Fauci, NIMH global health director Dr. Pamela Collins and NHLBI director Dr. Gary Gibbons. PHOTOS: CUGH



At left, Gawande chats on stage with NIH director Dr. Francis Collins. At right, the *New Yorker* author signs copies of his book.

PHOTOS: CHIA-CHI CHARLIE CHANG

Gawande

CONTINUED FROM PAGE 1

approach—better delivery of the health care we know works. At Ariadne Labs, his health innovation center in Boston, he identifies faults in the health care system, develops, tests and then scales solutions. For example, he designed a 19-item surgical safety checklist to improve communication between members of surgical teams and

attributed the availability of data as one reason why the rate has fallen.

Collins mentioned that NIH is getting ready to launch the All of Us research program, a study that will gather data on 1 million Americans to learn more about how diseases happen and how to prevent illness. He asked what kind of information would be most useful to collect.

Gawande said researchers will be able to see “interconnections” by studying partici-

are prescribed more opioids than they need.

There are, however, steps officials can take right now. The state of New York, for instance, requires doctors to electronically prescribe painkillers. Gawande said this has made it easier to track prescriptions and detect forged ones.

“There’s an incredible role for NIH being able to define those patterns and then support the innovators making those kinds of systems come into place,” he said.

Gawande also took questions from online viewers. One asked about what can be done to improve end-of-life care.

“What I came to understand is that it really is a question about, okay, you want to fight. What do you want to fight for: your best possible day today or to sacrifice your day today for the sake of possible time later while we treat you?” he responded.

Patients “have goals for the quality of life and their purpose” and want medicine to help them reach those goals. The best way to find out what a patient wants is to ask. One study surveyed family members about experiences they had with a loved one who passed away recently. The study reported that 84 percent of respondents received excellent or very good care when a health care professional talked about end-of-life wishes ahead of time.

Gawande said, “We’re switching from what one of my colleagues called the century of the molecule to the century of the system,” whether it’s at the molecular level, the physiologic level or at the population level.

“The biggest insights and the biggest gains in health and understanding are going to come from” innovations at the health system level, he concluded. **R**

“What I came to understand is that it really is a question about, okay, you want to fight. What do you want to fight for: your best possible day today or to sacrifice your day today for the sake of possible time later while we treat you?”

-DR. ATUL GAWANDE

patients. He then tested the checklist in 8 hospitals around the world. The average reduction in surgical complications was 36 percent and the average reduction in deaths was 47 percent.

“You cannot do science and learn without data,” he said. If, for instance, researchers can’t identify hospitals that have the best outcomes, they can’t share that information so other people can learn from it.

There are fields where information has been available for decades. In the U.S., data on infant and maternal mortality rates has been published since the 1920s. Back then, childbirth complications was the number one killer of women. Today, it’s a more rare cause of death for women. Gawande

pants’ health, genetics, biological condition, sleep and eating habits, behavior over time and the quality of their health care system.

In response to a question about electronic health records, he said IT companies that sell EHR software tailor their pitch to chief financial officers instead of to those directly involved in patient care. The result, he explained, is a high-quality medical billing system, not a system that allows nurses, for example, to quickly enter information about a patient’s allergies.

Collins then asked Gawande about how to respond to the opioid crisis in the U.S. Six in 10 patients who receive a prescription for opioids after surgery still take the painkillers a year later. New data also suggests patients



Reduced attention to other people's eyes and faces is a behavior associated with autism. In an NIH-funded study, researchers explored the potential genetic foundation of this behavior, which can appear by the first 6 months of age.

Children's Visual Engagement Is Heritable, Altered in Autism

How children visually engage with others in social situations is a heritable behavior that is altered in children with autism, according to a study funded by NIH. The study appeared in *Nature*. Autism spectrum disorder affects how a person acts, communicates and learns. In the United States, approximately 1 out of 68 children has the disorder.

Reduced attention to other people's eyes and faces is a behavior associated with autism; it is often used to screen for and help diagnose the disorder. In the current study, researchers from Washington University in St. Louis and Emory University explored the potential genetic foundation of this behavior, which can appear by the first 6 months of age and persist as children grow older.

"Research shows that autism likely has a genetic basis. Siblings of children diagnosed with autism and people with certain genetic mutations have a higher risk of developing the disorder, compared to the general population," said Dr. Diana Bianchi, director of NICHD, which provided funding for the study along with NIMH. "Understanding how genes influence social behaviors will help researchers identify new or better ways to treat autism."

The study team conducted eye-tracking experiments in a group of 250 typically developing toddlers ages 18 to 24 months, including 82 identical twins (41 pairs), 84 non-identical twins (42 pairs) and 84 non-sibling children (42 randomized pairs). They also evaluated 88 non-twin children diagnosed with autism.

Each child watched videos that showed either an actress speaking directly to the viewer or scenes of children interacting in daycare. In all video frames, children could look at the onscreen characters' eyes, mouth, body or surrounding objects.

Special software captured how often the children looked at different regions, as well as the timing and direction of eye movements.

The team found that identical twins had synchronized visual patterns, compared to non-identical twins and non-sibling pairs.

Identical twins tended to shift their eyes at the same times and in the same direction. They also were more likely to look at the subject's eyes or mouth at the same moments.

"By comparing identical twins who share the same genes to non-identical twins and randomly paired children who do not share the same genes, the study is one of the first to

show that social visual behaviors are under genetic control," said Dr. Lisa Gilotty, chief of NIMH's Research Program on Autism Spectrum Disorders.

To explore this concept further, the researchers evaluated children with autism and discovered that they looked at eye and mouth regions—the most heritable visual traits—much less, compared to the other groups of children.

HIV Hijacks Surface Molecule to Invade Cell

Researchers at NIH have discovered a key step in the process that HIV uses to inject its genetic material into cells. Working with cultures of cells and tissues, the researchers prevented the invasion process by chemically blocking this step, preventing HIV genetic material from entering cells. The findings could lead to the eventual development of new drugs to prevent HIV infection.

The study, appearing in *Cell Host & Microbe*, was led by Dr. Leonid Chernomordik at NICHD.

To infect a cell, a protein on the surface of HIV binds to molecules on the cell's surface. This binding process initiates a sequence of events that ends with HIV's outer membrane fusing with the cell's membrane. The virus' genetic material then passes into the cell. The researchers discovered that the binding process activates a protein, called TMEM 16F, that transfers another molecule inside the cell membrane, phosphatidylserine, to the membrane's outer surface. They believe molecules in the viral membrane bind with the exposed phosphatidylserine on the cell surface to enhance the virus' fusion to the cell.

The researchers found that blocking the transfer of phosphatidylserine to the cell surface—or attaching another molecule to phosphatidylserine so it can't bind with HIV—prevents the virus from infecting the cell. Theoretically, developing drugs that could block each of these steps could provide the basis for treatments to prevent HIV from infecting cells, but much more research is needed.

Eye Microbiome Trains Immune Cells to Fend Off Pathogens In Mice

Bugs in your eyes may be a good thing. Resident microbes living on the eye are essential for immune responses that protect the eye from infection, new research shows. The study, which appeared in the journal *Immunity* on June 27, demonstrates the existence of a resident ocular microbiome that trains the developing immune system to fend off pathogens. The research was conducted at NEI.

"This is the first evidence that a bacterium lives on the ocular surface long-term," said Dr. Rachel Caspi, senior investigator in NEI's Laboratory of Immunology. "This work addresses a longstanding question about whether there is a resident ocular microbiome."

For years, the ocular surface was thought to be sterile because of the presence of an enzyme called lysozyme that destroys bacteria, antimicrobial peptides and other factors that rid the eye of microbes that may land from the air (or from our fingers) onto the surface of the eye.

Dr. Anthony St. Leger, research fellow in Caspi's laboratory, was able to culture bacteria from the mouse conjunctiva, the membrane that lines the eyelids. He found several species of Staphylococci, which are commonly found on the skin, and *Corynebacterium mastitidis* (*C. mast*). But it wasn't clear whether those microbes had just arrived on the eye and were en route to being destroyed or whether they lived on the eye for extended periods of time.

The researchers found that *C. mast*, when cultured with immune cells from the conjunctiva, induced the production of interleukin (IL)-17, a signaling protein critical for host defense. Upon further investigation, they found that IL-17 was produced by gamma delta T cells, a type of immune cell found in mucosal tissues. IL-17 attracted other immune cells called neutrophils—the most abundant type of white blood cell—to the conjunctiva and induced the release of anti-microbial proteins into the tears. The researchers are currently investigating the unique features that can make *C. mast* resistant to the immune response that it itself provokes and allow it to persist in the eye.

The researchers are also investigating whether other bacteria play a role in regulating eye immunity.

"We've established the proof of concept of a central ocular microbiome," St. Leger said. "It's well known that there are good bacteria in the gut that modulate the immune response. Now we show that this relationship exists in the eye. That's important for how we think about treating ocular disease."



At left, Fabrian McCain and Abiola Olasewere with the ORS Division of Radiation Safety distribute information to NIH employees. At right, a representative from Corporate Fitness Works conducts a bone density scan; she advises women getting screened to take calcium and do weight-bearing exercises to help maintain bone health.

Wellness

CONTINUED FROM PAGE 1

June 28 for the 6th annual Safety, Health & Wellness Day, coordinated by ORS, ORF and R&W. Some enjoyed a rejuvenating chair massage. Others gathered around the volleyball net for a friendly game.

The ideal weather allowed for more

moving and have fun!” she said.

Many NIH’ers stopped by dozens of exhibits to learn something interesting. So that’s what a whole jicama looks like? Eurest Dining Services featured a Guess the Produce game and demonstrated creative ways to work more vegetables into meals, such as making “zoodles” and using

Lynn from NIAID came from her off-campus office for the elder/adult dependent care resources. “I came specifically for this fair and found very useful information,” she said.

Don’t Bypass This

This year’s IC co-sponsor, NHLBI, provided hearty recipes and health resources, with experts on hand to discuss current research. Dr. Larry Fine, chief of NHLBI’s Clinical Applications & Prevention Branch, showed a model of a human heart’s arteries to illustrate the dangers of plaque buildup.

“Good lipids and blood pressure and a healthy weight can prevent or delay plaque buildup,” said Fine. “[When excessive plaque clogs arteries], a catheter can remove plaque, restore blood flow and limit danger; this is a modern treatment.”

Heart disease has decreased dramatically in recent decades due to prevention—exercise, not smoking—and modern medical treatment. “Epidemiology studies have helped,” said Fine, “but we still have a long

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“There are simple steps we can all take, easily and inexpensively—more walking, being active, eating more fruits and vegetables and smaller portions—that will help us live longer.”

-NHLBI DIRECTOR DR. GARY GIBBONS

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activities to take place outdoors, including judo demonstrations and exercise classes, from yoga and Pilates to Zumba. The NIH Fitness Center’s LaTanya Richards, who led a line dancing class, said any type of organized dance can provide great exercise. “Just keep

crumbled cauliflower instead of rice.

Some staff took the opportunity to get free health screenings, each of which took just a few minutes and provided instant results. Stations were set up to test vision, bone density and skin damage.



At left, NIH’ers take a break from work to get outside and enjoy a friendly volleyball game. At right, NHLBI director Dr. Gary Gibbons stops by the fair and shares a light moment with NHLBI staff.

PHOTOS: CHIA-CHI CHARLIE CHANG

way to go. We're not at zero yet." Ongoing clinical trials include studying the effects of stress and other psychological factors that cause premature cardiovascular death.

There's another area of NHLBI research helping put our minds at rest. New data supports earlier findings that getting enough sleep bolsters our immune system.

"New research shows poor sleep affects stem cells," said Dr. Michael Twery, director of NHLBI's National Center on Sleep Disorders Research. "If you interfere with the rhythm of hematopoietic stem cells, you produce fewer immune cells and fewer red blood cells."

NHLBI director Dr. Gary Gibbons dropped by his institute's exhibit and shared some healthful advice. "There are simple steps we can all take, easily and inexpensively—more walking, being active, eating more fruits and vegetables and smaller portions—that will help us live longer," he said. NHLBI is working with other ICs on a variety of collaborative efforts, he added. "We're all in this together."

Staying Safe

NIH'ers learned all kinds of tips to keep safe at work and home. Brett Beall from the Occupational Safety & Health Administration shared campaign materials on beating the heat, avoiding chemical hazards and preventing accidents. "We work for all federal employees to ensure their safety and rights," he said. "Many tips apply to home safety too."

Ever have concerns about air quality in your office? NIH's Division of Occupational Health & Safety exhibited some of the tools they use to gauge mold, mildew, leaks and other hazards. If there's a health hazard, they'll send in technicians to make repairs.

Safety, Health & Wellness Day originated as a lab safety fair for scientists, said ORS's Antony Schwartz, who helped organize the event. But it quickly expanded to encompass health and wellness with relevant information and activities for all NIH'ers. Previously held in Natcher Bldg., this is the second year the expo was held in the CC, which Schwartz said has greatly expanded its visibility.

Just about everyone came away with some handy wellness tips; the lucky ones also came away with more relaxed shoulders. **R**



Visiting NIH recently are (seated, from l) U.S. Reps. Scott Peters (D-CA), Don Beyer (D-VA), Susan Davis (D-CA) and Kathleen Rice (D-NY); standing behind them are NIH leaders (from l) NHLBI director Dr. Gary Gibbons, NIH director Dr. Francis Collins, NIH deputy director for extramural research Dr. Mike Lauer and NIH principal deputy director Dr. Lawrence Tabak.

PHOTOS: ANDREW PROPP

'New Democrat Coalition' Members of Congress Get NIH Lab Tours

Four congressional representatives recently visited NIH for an afternoon of research briefings and lab tours. Reps. Don Beyer (D-VA), Susan Davis (D-CA), Scott Peters (D-CA) and Kathleen Rice (D-NY)—all members of the New Democrat Coalition in Congress—met recently in the Clinical Center with NIH leadership, including NIH director Dr. Francis Collins, principal deputy director Dr. Lawrence Tabak, deputy director for extramural research Dr. Mike Lauer and NIAID director Dr. Anthony Fauci.

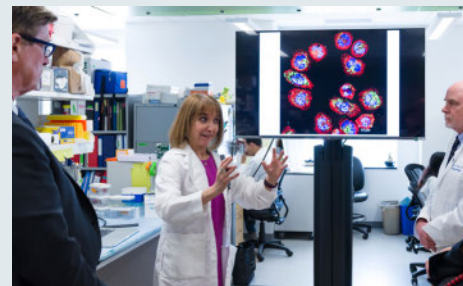
The group then departed the medical board room for lab tours at the National Heart, Lung, and Blood Institute, the National Institute of Arthritis and Musculoskeletal and Skin Diseases and the National Institute of Nursing Research.

NHLBI director Dr. Gary Gibbons gave an overview of NHLBI and introduced Dr. Courtney Fitzhugh, a Lasker clinical research scholar in the Laboratory of Early Sickle Mortality Prevention. She talked about her research exploring new avenues of hematopoietic stem cell transplantation for sickle cell disease, while also studying the currently underexplored cardiovascular complications arising due to this genetic blood disorder. Two of her patients also attended the gathering to discuss the experience of participating in research. Dr. Hans Ackerman, a Lasker clinical research scholar, gave the group a tour through the lab and discussed genetic factors that change the severity of sickle cell disease.

The group next heard an overview of NIAMS from institute director Dr. Stephen Katz. Also during that session, NIAMS scientific director and chief of the Molecular Immunology and Inflammation Branch Dr. John O'Shea talked about development of the rheumatoid arthritis drug tofacitinib through a public-private partnership between his lab and Pfizer. He also discussed how our understanding of the human genome is providing evidence to repurpose tofacitinib for other autoimmune diseases, such as lupus.

NIAMS Systemic Autoimmunity Branch chief Dr. Mariana Kaplan then described how a type of white blood cell, called neutrophils, contributes to development of autoimmunity. She explained recently identified sex differences in how neutrophils behave, which may explain why cardiovascular disease is often seen in young women with autoimmune diseases.

Finally, the delegation met with NINR director Dr. Patricia Grady for an overview of her institute. She introduced Lasker clinical research scholar Dr. Jessica Gill of the NINR Tissue Injury Branch. Gill discussed efforts to reveal the mechanisms underlying differential responses to combat trauma and traumatic brain injury in combat veterans and athletes.



Above, NIAMS Systemic Autoimmunity Branch chief Dr. Mariana Kaplan and (below) Lasker clinical research scholar Dr. Jessica Gill (l) of NINR's Tissue Injury Branch discuss their research with the lawmakers.





Dr. Elizabeth "Lisa" Cahoon

NCI's Cahoon Named Stadtman Tenure-Track Investigator

BY VICTORIA FISHER

Dr. Elizabeth "Lisa" K. Cahoon was recently appointed an Earl Stadtman tenure-track investigator in the Radiation Epidemiology Branch of NCI's Division of Cancer Epidemiology and Genetics. She studies cancer and precancer risks conferred by environmental sources of both ultraviolet and ionizing radiation exposure. She joined the branch as a postdoctoral fellow in 2010 and was promoted to research fellow in 2014.

Cahoon and colleagues are investigating how sensitivity to sunlight is influenced by external factors, such as use of photosensitizing medications. In a nationwide occupational cohort of U.S. radiological technologists, she found significantly increased risks of basal cell carcinoma for several photosensitizing agents, including prescription diuretics and menopausal hormone therapy. She has initiated two studies of photosensitizing medications (NSAIDs and estrogen-related factors) in relation to melanoma in the NIH-AARP cohort.

She is also evaluating the UV radiation dose-response relationship for skin cancer risks by wavelength, age at exposure and anatomic site.

"To best inform skin cancer prevention, we need a clearer understanding regarding the influence of timing of UV radiation exposure over the life course and relative exposure to different UV radiation wavelengths," she said. "For example, if UVA is

found to be strongly related to skin cancer risk, prevention implications could include reformulating sunscreens and engineering window glass to block UVA."

In addition, Cahoon is examining whether ionizing radiation is related to several outcomes that have been little studied (e.g., precancers, histological subtypes) and whether radiation-related risks are modified by factors for which there are limited data (e.g., age at exposure).

Part of this effort involves the assessment of radiation-related risk for various cancers in the Lifespan Study of Japanese atomic bomb survivors.

Through a collaboration with the National Research Centre for Radiation Medicine in Ukraine, she is also leading a thyroid cancer case-control study nested in a cohort of emergency clean-up workers at the Chernobyl nuclear plant who were exposed to a wide range of external radiation doses.

Few studies have evaluated the relationship between iodine-131 exposure and thyroid nodules, which are potential precursors for thyroid cancer. Cahoon and colleagues are examining incidence of new thyroid nodules in Belarus and Ukraine and progression of prevalent nodules.

"This work potentially provides a rare window into multistage carcinogenesis," she said. "These will be the first studies to evaluate whether nodule characteristics associated with increased risk of thyroid

cancer, such as size and vascularization, are apparent at clinical diagnosis or whether these characteristics emerge and evolve over time."

Named to honor Dr. Earl Stadtman, a noted biochemist at the National Heart, Lung, and Blood Institute, the Stadtman program is a trans-NIH recruitment initiative designed to attract the most talented early-career scientists to NIH.

NIH Administrator Baldwin Mourned

Calvin "Cal" Benham Baldwin Jr., an administrator for 33 years at NIH, died on June 28 at Kensington Park, a senior living community. He was 91. A resident of Garrett Park from 1963 to 2017, he was born in Radford, Va.

Baldwin joined NIH in 1953 and served in a number of administrative positions until his retirement in 1986: executive officer of the National Institute of Child Health and Human Development, executive officer of the National Cancer Institute, executive officer of the Division of General Medical Sciences (before NIGMS was created) and NIH associate director for administration.

He received numerous honors and awards including the DHEW Superior Service Award and the William A. Jump Meritorious Award for "exemplary achievement in public administration."

Biophysical Society Honors NINDS's Swartz

Dr. Kenton Swartz, a senior investigator in the molecular physiology and biophysics section of the NINDS Division of Intramural Research, recently received the Kenneth S. Cole Award from the Biophysical Society.

Each year the award is given to an investigator who has made substantial contributions to the understanding of membrane biophysics. Swartz was recognized at the society's annual meeting in New Orleans.

"It was a great honor to receive the award because so many of our contributions were only possible due to the foundational work of previous Cole awardees," said Swartz. "It was also wonderful because Kenneth Cole spent a good part of his research career working at NIH, and receiving this award symbolizes the longstanding contributions of many NIH investigators to the biophysical sciences."

Swartz earned his undergraduate degree in chemistry and biology in 1986 from Eastern Mennonite College and his Ph.D. in neurobiology in 1992 from Harvard University. He joined NINDS in 1997.

His current research uses biochemical, molecular, biological and biophysical techniques to learn how ion channel proteins sense critical biological stimuli, including membrane voltage, temperature and chemical signals. Understanding the structure and mechanisms of ion channels is essential because these proteins are involved in many important physiological processes and diseases and are widely targeted by therapeutic drugs.—Shannon E. Garnett



Dr. Kenton Swartz

He also was NIH's representative on the Economic Advisory Council on Montgomery County, advising the county executive on various issues including transportation.

"I never thought I would go from a Grade-7 management analyst to be the director of administration at NIH," said Baldwin in an NCI oral history interview conducted on the last day of 1997. "I was just extremely happy working at NIH and felt very fortunate. I was in the right place at the right time. My kind of caustic comment was that I was at NIH at a time when any fool could get ahead, and some did."

Baldwin became a resident of Montgomery County in 1933, when his family moved to Chevy Chase from Radford. Baldwin attended Montgomery County public schools, graduating from Bethesda-Chevy Chase High School in 1943. He served in the infantry in World War II in Germany and Japan. He graduated from the University of North Carolina at Chapel Hill in 1949 with a degree in sociology and was a member of Phi Beta Kappa. In 1961, he received a master's degree in public administration from Harvard University.

In retirement, Baldwin was active in a variety of civic and community affairs. He served on the town council and as chairman of the planning commission in Bethany Beach, Del., where he was also president of the Bethany Beach Landowners Association. In 2002, Bethany's mayor recognized his "tireless work and persistence (over 15 years)" that led to the town's acquisition of a 26-acre parcel, which became the Bethany Beach Nature Center. The nature trail at the center was named "Baldwin Trail" in honor of his efforts. Another multi-year project he helped bring to fruition was the hiker-biker trail from Garrett Park to Beach Dr. in Rock Creek Park.

A founding member of the NIH Alumni Association and the Children's Inn at NIH, Baldwin was a board member of both organizations. He was also an avid tennis



Calvin "Cal" Benham Baldwin Jr.

player until the age of 80, which kept him active both physically and socially.

Baldwin was preceded in death by his wife of 66 years, Elizabeth "Betty" Baldwin, on Mar. 16. Survivors include 3 daughters: Susan Baldwin of San Diego, Sally Baldwin of Washington, D.C., and Ann Baldwin Nucci of Rockville and 6 grandchildren. Nucci worked at NIH in the Office of Human Resources for 31 years, retiring in 2015, and her son, James, is a 2017 summer intern with NICHHD.

Donations in Baldwin's memory may be made to Planned Parenthood Federation of America, P.O. Box 97166, Washington, DC 20090-7166 or to the Democratic National Committee, 430 South Capitol St. SE #3 Washington, DC 20003.

A celebration of his life will be held at a date to be determined. For details email calvinbaldwingp@gmail.com.

Former NCI Visiting Scientist James Is Mourned

Dr. A. Everette James Jr., 78, a former visiting scientist at the National Cancer Institute (1991-1992), passed away on Mar. 14 at UNC Hospital in Chapel Hill.



Dr. A. Everette James Jr.

He received his undergraduate degree with honors at the University of North Carolina and graduated with honors from Duke University Medical School. He did postdoctoral work at Johns Hopkins

School of Public Health and Harvard Medical School.

James began his professional career as director of Radiological Research Laboratories at Johns Hopkins Medical School. In 1975, he was appointed chair and professor of radiological sciences at Vanderbilt University School of Medicine. He founded the Vanderbilt Center for Medical Imaging Research.

Survivors include wife Nancy J. Farmer of Chapel Hill, son Everette III of Pittsburgh and daughter Jeannette James Whitson of Nashville. **R**

Have a question about some aspect of working at NIH? You can post anonymous queries at <https://nihrecord.nih.gov/> (click on the Feedback tab) and we'll try to provide answers.

Feedback: An email from ORS was sent on June 29 describing utility work that will soon take place near Center Dr. and Wilson Dr. The last time there was work done in this area (~8 years ago?), numerous trees on the north side of Wilson Dr. were killed in a delayed fashion. Since these trees were some distance (maybe 50-100 feet) from the actual work, I suspect they were poisoned by some chemical overflow.

Will there be any precautions or oversight to make sure this doesn't happen again? What steps are being taken to minimize the impact to the natural landscape in this area? There is a healthy stand of trees just to the east of where the work will be performed and it would be a shame to lose them unnecessarily.

Response from the Office of Research Facilities:

First of all, thanks for your interest in the preservation of trees on the Bethesda campus. We are proud to house a wide variety of beautiful trees, including numerous Montgomery County Champion Trees. The upcoming construction work on Center Dr. will involve no chemicals. While work is ongoing, erosion and sediment control measures, including a temporary silt fence, will ensure that adjacent downstream sites will not be affected by this development. No dumping of washout water shall occur. Contractors will restore the project area to its original state. Work will be done next to the street and far enough away from the root zones. There should be no foreseeable danger to any trees in the area.

Relative to trees that died in the past, NIH landscape architect Brandon Hartz believes accumulation of winter salt runoff could have been a contributing factor to the trees' delayed death as tulip poplars are notoriously sensitive to any elevation in soil salinity and the area in question is a low area adjacent to a roadway. Hartz is happy to report that a new generation of red cedar and black locust trees is naturally emerging within the existing oaks and maples and is more resilient to the current environmental conditions of the area than the poplars.

Over the years, NIH has increased sustainability and environmental stewardship not only to benefit water runoff, trees and other natural areas, but also in a host of disciplines. Please visit the NIH Green Features Guide (<https://nems.nih.gov/Documents/NIH%20Green%20Features.pdf>) to view how NIH fosters a healthier environment.



ABOVE: **Strings of Science.** Members of the The Directors band jam at the annual Camp Fantastic Barbecue held on June 15. Shown are (from l) NIAMS scientific director Dr. John O’Shea, NIAMS director Dr. Stephen Katz and violinist/vocalist Cassie Parks, a recent NIAMS postbac.

PHOTOS: CHIA-CHI CHARLIE CHANG

‘The Directors’ Play at Camp Fantastic BBQ

The annual Camp Fantastic BBQ set up on June 15 on the Bldg. 31A patio. The afternoon featured food, games, silent auction and a mini vendor fair.

Highlighting the event was a live performance by The Directors band. As usual, proceeds—about \$3,400 this year—from meal ticket sales and the silent auction will go to Camp Fantastic, the week-long summer getaway for kids with cancer.

Lunch was provided by Rocklands Barbeque and Grilling Co., with dessert from Funnel Fare. Games and activities included Parti Pics photo booths, prize wheels, fish bowl toss, darts and corn hole.

Among items slated for the auction were an

autographed picture of Washington Capitals hockey great Alex Ovechkin and tickets to the Quicken Loans National golf tournament and Washington Nationals baseball games.

Camp runs Aug. 13-19 this year and there is still time to contribute. Visit <http://speciallove.org/donate/>.



Volunteers serve up lunch from Rocklands Barbeque and dessert from Funnel Fare. Proceeds from meal ticket sales benefit the camp—\$700 sends a kid to camp for the week; \$25 pays for a camper’s craft supplies.



ABOVE: Dave Smith, CEO of Special Love, Inc., which hosts Camp Fantastic, chats with barbecue attendees about the annual getaway for children with cancer.



Above, representatives of several organizations are on hand at the event with logo items to give away. Below, games include a fish bowl toss.

