



National Institutes of Health

NICHE FIELD IN SUDDEN DEMAND FIC's Viboud and Team Model, Predict COVID-19 Transmission Dynamics

BY CARLA GARNETT

Business is always booming in December and January for senior research scientist Dr. Cécile Viboud. That's because she and her group at Fogarty International Center collect and analyze data about worldwide influenza trends, and flu season poses challenges for them every year. Usually, though, their work escapes notice beyond interested insiders. But winter 2020 was exceptional, of course. COVID-19 happened.

"There's so much interest in disease-modeling right now—it's crazy,"

acknowledges Viboud, director of FIC's Division of International Epidemiology and Population Studies. "My colleagues and I joke that our field of expertise is such a niche and nobody knows what we are doing and now everyone wants to talk to us."

Viboud recalls coming across the disease caused by a novel coronavirus "in late December, early January by just looking at ProMED."

According to its website, ProMED, or the Program for Monitoring Emerging Diseases, is an internet service provided by the International Society for Infectious Diseases "to identify unusual health events related to emerging and re-emerging infectious diseases and toxins



Dr. Cécile Viboud

affecting humans, animals and plants."

"There were a few [posts] there that described interesting clusters of 'pneumonia of unknown etiology in Wuhan,'" she says. In addition to those entries catching her attention, an outstanding Chinese postdoc in her group, Dr. Kaiyuan Sun, coincidentally became interested in the outbreak very early on.

"By mid-January," Viboud notes, "Kaiyuan started compiling a lot of data from websites in Chinese that provided information from their local [Centers for Disease Control] about individual case descriptions and COVID-19 symptoms. So from there, we started doing

SEE VIBOUD, PAGE 8



Seen off scene. NIH'ers report extraordinary overhead, supervision while teleworking. See more pet therapy pictures, p. 12.

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NIH Postdoc Helps Neighbors in Need at Parkside

BY DANA TALESNIK



Dr. Pablo Vidal-Ribas Belil

While most people are heading to the grocery store or pharmacy as infrequently as possible these days, if at all, Dr. Pablo Vidal-Ribas Belil is going quite often.

Vidal-Ribas, an NICHD post-doctoral fellow researching early predictors of suicide mortality, is busy helping vulnerable people in his spare time during the COVID-19 pandemic. He

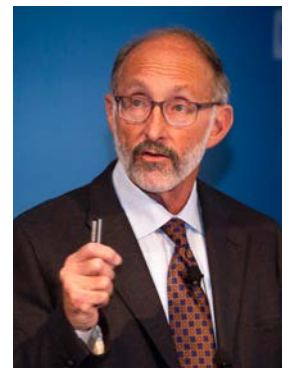
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THE BODY CAN REBOUND Eating Disorder Damages Are Extensive, But Reversible

BY CARLA GARNETT

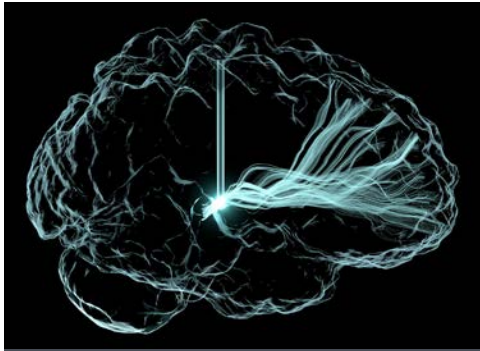
Eating disorders damage nearly every system in the body, but people living with even the most extreme forms of anorexia or bulimia can recover with treatment.

Dr. Philip Mehler, founder and executive medical director of ACUTE Center for Eating Disorders at Denver Health, delivered that good news at a recent NIH Clinical Center Grand Rounds.



Dr. Philip Mehler

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Andrew Janson's "Light Me Up" won 2019's Show Us Your BRAINS image contest.

'Show Us Your BRAINS' Contest Is Open

BRAIN Initiative researchers can now enter their coolest, most artistic and eye-catching images and/or short videos in the 2020 BRAIN Initiative Show Us Your BRAINS! Cool Picture & Video Contest. The contest is open to all researchers who are participating in the BRAIN Initiative, regardless of discipline, career stage or funding source.

Deadline to submit is Monday, May 3. Selected entries will be posted online for public voting. Winners will be announced during the BRAIN Initiative investigators meeting, a virtual event to be held June 1-2.

Be creative. Show the public how you are revolutionizing brain science. We can't wait to see your BRAINS! Find details at <https://braininitiative.nih.gov/2020-brain-initiative-show-us-your-brains-photo-video-contest>.

NIGMS Offers Free Virtual Learning, Training Resources for All Levels

With everyone at home, keeping the kids busy, entertained and focused on school is challenging, especially when parents are also teleworking. Through a range of free and engaging virtual science presentations that align with the Science, Technology, Engineering and Math (STEM) and/or English Language Arts (ELA) education standards, NIGMS has the following resources (at www.nigms.nih.gov/science-education) to help:

- The Science Education and Partnership Award (SEPA) teaching resources feature easy-to-access STEM and informal science education projects for pre-K through grade 12. The program has tools such as: apps, interactives, online books, curricula, lesson plans and short movies. Students can learn about sleep, cells, growth, microbes, a healthy lifestyle, genetics and many other subjects.
- Pathways, a collaboration between NIGMS and Scholastic, includes student magazines with corresponding teaching guides, related lessons with interactives, videos and vocabulary lists. Available lessons cover basic science careers, regeneration and circadian rhythms.
- NIGMS's Science Education page hosts a wide

range of additional articles, fact sheets, images, videos and blog posts on basic science topics and science careers.

- NIGMS also offers a variety of free virtual resources (www.nigms.nih.gov/research-training/resources) for scientists at all levels. The Clearinghouse for Training Modules to Enhance Data Reproducibility provides a range of training modules, workshops and online courses aimed at enhancing rigor and reproducibility in research. iBiology houses a collection of high-quality videos of scientists talking about their research, career paths and related topics. Complete courses are also available on experimental design, microscopy and image analysis, to name a few.

- Last, but not least, the National Research NIMentoring Network is a platform designed to help undergraduates, graduate students and postdocs connect professionally through online mentoring and networking activities. All of these resources apply to levels ranging from community college students to faculty.

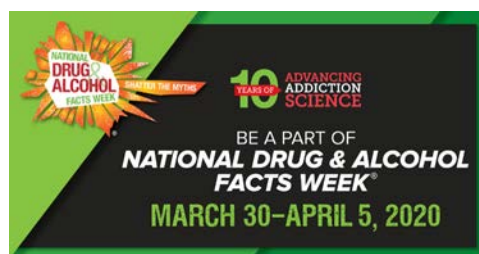
Let NIGMS know how you're using their virtual learning resources with the hashtag #NIGMSVirtualLearning.

NDAFW Goes 'Virtual' and Celebrates 10 Years of Shattering Myths

National Drug & Alcohol Facts Week (NDAFW), an annual health observance that links teens with science-based facts about drugs and alcohol, celebrated its 10th year on Mar. 30-Apr. 5.

Launched in 2010 by NIDA, and in partnership with NIAAA since 2016, NDAFW connects students with scientists and other experts through live and online activities nationwide to shatter the myths about drugs and alcohol.

This year, more than 2,700 events were registered in all 50 states and 13 international sites, surpassing the previous record of 2,321. Due to COVID-19, many NDAFW local events had to be cancelled, rescheduled or adjusted to a virtual/remote activity. In lieu of in-person events and activities,



NIDA encouraged virtual participation and provided activities for teens, parents, caregivers and teachers that didn't involve leaving the house. In fact, after NIDA announced virtual participation, more than 500 events were registered in a single day—about 50 percent higher than previous years.

Examples of virtual activities included: Kahoot! games on vaping/e-cigarettes, marijuana and

drugs and alcohol; free science-based resources and toolkits; the National Drug & Alcohol IQ Challenge, an interactive quiz available in English and Spanish that can be taken on mobile devices; and social media activities, including participation in a Tweetstorm and a Twitter Trivia Challenge.

Images of NDAFW virtual events will be posted on NIDA's Flickr album: <https://flic.kr/s/aHsmMitoSt>. More information about National Drug & Alcohol Facts Week can be found at <https://teens.drug-abuse.gov/national-drug-alcohol-facts-week>.

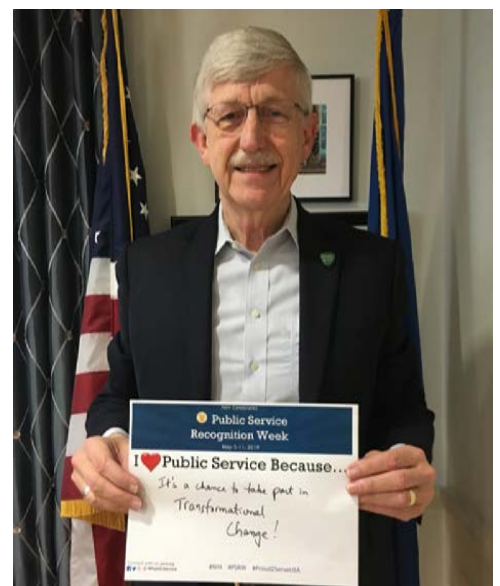


Public Service Recognition Week Still On

Yes, Public Service Recognition Week is still on! Now, more than ever, it is appropriate to recognize the work of our nation's government employees. During this week, you have an opportunity to share your pride in public service. One way to do it is by participating in NIH's photo campaign for Public Service Recognition Week. Here's how it works:

- Take a photo with your completed "I Heart Public Service" whiteboard template, which can be found on OHR's Public Service Recognition Week page (<https://hr.nih.gov/about/events/psrw>).
- Post your photo on Facebook, Twitter or Instagram using the following: #NIH, #PSRW and #Proud2ServeUSA. #NIH allows NIH to find our employees.

If you have any questions about PSRW at NIH, contact NIHPSRW@nih.gov. You can also send your photo to be posted on NIH social media outlets.



NIH director Dr. Francis Collins displays his PSRW pledge in May 2019.

Remote Success Story: A Record-Breaking Town Hall

BY SISLEY CHUNG

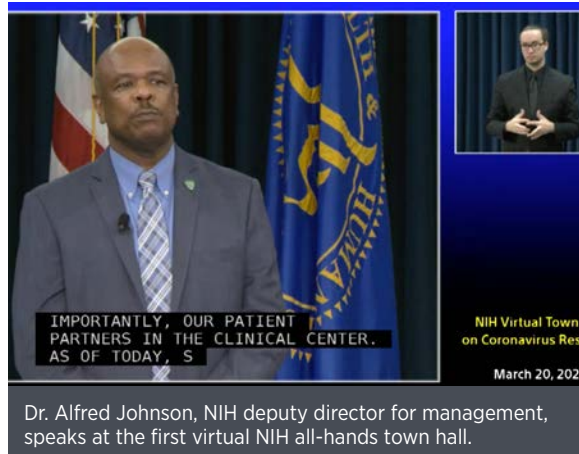
For many NIH employees, the novel coronavirus disease—COVID-19—has affected the ways we work: events have shifted to a virtual space or been postponed, many employees are teleworking and all of us are adapting to a new, remote environment.

This can be especially complex at NIH, where operations are mostly conducted in person. However, the Center for Information Technology is equipped to handle many remote collaboration needs. CIT provides remote expertise and virtual meeting solutions, allowing staff the resources to continue to focus on their core missions without interruption.

That's why NIH director Dr. Francis Collins and his team reached out for assistance in holding an NIH-wide virtual town hall on Mar. 20 to address the coronavirus pandemic. Holding such a large-scale, virtual meeting while on a tight timeline (just a week) was a massive operation, one that required the dedication and swift work of many staff around the clock.

Over the course of a week, CIT gathered requirements and tested a new, modernized video-streaming service that leverages the power of secure cloud infrastructure. This service was able to support attendance from more than 40,000 NIH staff members and still provided a seamless experience for all.

The virtual town hall was a success. It was the largest virtual event ever held at NIH—more than 23,000 staff tuned in and



Dr. Alfred Johnson, NIH deputy director for management, speaks at the first virtual NIH all-hands town hall.

more than 1,900 questions were submitted. In fact, more than 10,000 staff successfully connected into the town hall 10 minutes prior to the start time.

What made the efforts work so smoothly was the collaboration of different NIH teams and colleagues including (but not limited to) the National Cancer Institute, the NIH Events Management team and NIH's Office of Communications and Public Liaison.

COVID-19 is changing the model of where and how our meetings take place. To compare, during the week of Mar. 9, which was before most staff began teleworking, there were about 11,500 meetings with a virtual meeting option included. In the first 2 weeks since Collins issued guidance encouraging those who are telework-eligible to begin working remotely, the NIH community had held a total of 60,212 virtual meetings with almost 278,000 participants.

On Mar. 18, NIH staff held more Webex meetings in a single day (3,888) than in the entire month of March 2019 (3,855).

In addition, there are now more than 30,000 VPN accounts resulting in a 279 percent increase in VPN usage; NIH Skype for Business meetings have increased by 196 percent; Webex meetings have increased by 135 percent; and NIH IT Service Desk support has increased by 65 percent.

There have also been improvements to allow NIH staff to work more effectively while remote. All NIH staff can now use Office 365 tools (including Outlook,

SharePoint Online, Teams and OneDrive) without needing to connect to VPN. In addition, CIT is hosting training sessions on virtual meeting tools to help NIH staff work and collaborate more effectively with their teams. In the first 7 trainings alone, there were approximately 4,300 participants.

To learn more about virtual meeting options available to NIH staff, visit the virtual meetings section of the NIH Guidance for Staff on Coronavirus intranet page.

On this page, you will also find information on tools, tips, and best practices for remote work, including NIH email, VPN, file storage and collaboration tools, mobile devices and more. **R**



ON THE COVER: Radiology Imaging. CT scans are an important tool in diagnosis and treatment. Since 2014, this CT scanner in the Clinical Center has provided better quality scans, faster run times and lower radiation doses.

IMAGE: NIH

The NIH Record

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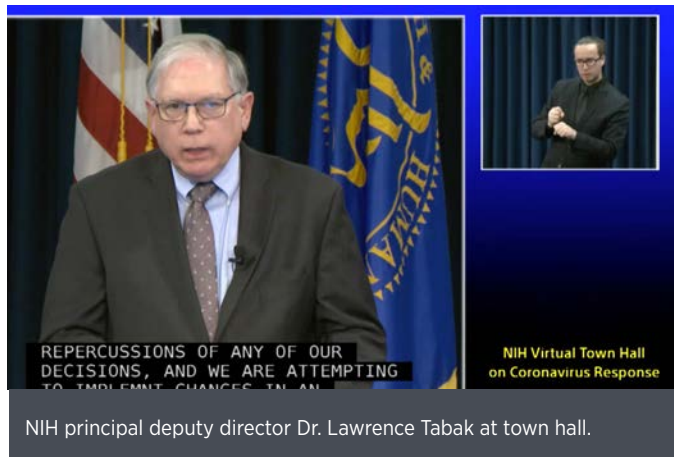
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NIH principal deputy director Dr. Lawrence Tabak at town hall.

NIH National Institutes of Health
Turning Discovery Into Health

Mehler

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Mehler, who is also Glassman professor of medicine at the University of Colorado, Denver, began by describing the most familiar eating disorders, which are classified as both mental and physical diseases. ACUTE, a hospital-based inpatient center, treats the medical complications in the most severe eating disorder cases.

Anorexia nervosa (AN), he said, is the restriction of energy intake, leading to significantly low body weight. Patients have a distorted body image and intense fear of weight gain.

“So despite having a BMI [body mass index] of 8, for example,” Mehler explained, “these patients believe they are not too thin.”

AN has two subtypes—restricting calories (non-eating) and binge-eating and purging, which is more common. Purging can involve use of laxatives and diuretics, excessive exercise and self-induced vomiting. Diagnosed cases can be mild, moderate, severe or extreme.

Bulimia nervosa (BN) involves normal-weight individuals who overeat, consume unusually large amounts of food, feel out of control and then engage in purging behaviors—vomiting, laxative abuse, excessive exercise, fasting—to compensate. These patients have an extreme focus on their shape or weight.

“Bulimia is about twice as common as anorexia,” Mehler reported.

Recently, doctors also began diagnosing a relatively new eating problem, ARFID or avoidant/restrictive food intake disorder.

“The basic difference,” Mehler said, “is these patients know they’re thin, hate being thin, but just can’t eat because of an event that happened, such as severe choking. From my perspective, medically speaking, these patients are the same as people with anorexia.”

The eating disorder population is about 90 percent female. In the United States, up to 20 million girls or women suffer from these diseases.

“Generally, it’s a disease of industrialized countries,” Mehler pointed out. “Where food is at a premium, you don’t see anorexia nervosa...Eating disorders are familial diseases. We know that your risk of getting anorexia is much greater if your mother,

sister, aunt or grandmother had it.”

Mehler referred to research his group published more than a year ago, documenting the wide range of medical complications that people with anorexia and bulimia experience. The study was the largest ever conducted on eating disorders, following more than 1,000 AN and BN inpatients.

From auditory, cardiovascular and dermatologic to neurologic, ophthalmic and pulmonary, nearly every cell and component of the body suffers from overly restricting energy, Mehler said. Loss of heart muscle, teeth, hair and bone are commonly experienced by people with eating disorders.

“There is no body system that is immune from the ravages of anorexia,” he said. “In bulimia, the complications have to do with the mode and frequency of purging, so if you purge through self-induced vomiting, then you see upper [gastrointestinal] issues, you see teeth issues. If you purge through laxatives, you see rectal prolapse...but at the end of the day, the reason bulimics die prematurely is due to the electrolyte complications that occur as a direct result of purging.”

Experts agree that when weight for eating disorder patients “is less than 70 percent of ideal body weight, which equates to a BMI of about 14, these people need to be medically stabilized first and that’s what we do on our unit in Denver,” Mehler said.

ACUTE is the country’s only formal

Center of Excellence in the eating disorder industry because of the extreme forms of the illness it treats and its acclaimed outcomes over the past two decades.

In terms of prognosis, Mehler said about half of patients recover completely, 30 percent partially recover and 20 percent remain severely ill. AN mortality rate is 5 percent, the highest for any psychiatric disorder. Most frequent causes of death are suicide and medical complications.

Mehler also described several factors that can impede recovery from an eating disorder. Irritable bowel syndrome and superior mesenteric artery (SMA) syndrome, for example, are common in both AN and ARFID populations.

SMA, a digestive condition in which the small intestine becomes partially or completely blocked, can occur during attempts to refeed people to restore them to a healthy weight.

“When food is your enemy and you’re being forced to eat, you suddenly develop a lot of abdominal pain and it really takes skill to ferret out whether it’s SMA or something else,” Mehler said.

Dr. Kenneth Olivier, senior clinician in NHLBI’s Laboratory of Chronic Airway Infection and chief of the Pulmonary Branch, who introduced the guest speaker, had presented Grand Rounds at ACUTE last November. He invited Mehler here to return



With Mehler at a CC Grand Rounds earlier this year are Dr. Kenneth Olivier, senior clinician in NHLBI’s Laboratory of Chronic Airway Infection and chief of the Pulmonary Branch, and Jeana Cost, executive director of ACUTE Center for Eating Disorders.

PHOTOS: LISA HELFERT



“These are curable illnesses,” Mehler emphasized. “It’s a young population worth investing the time...There is hope for this disorder.”

the favor as a result of their burgeoning collaboration on nontuberculous mycobacteria (NTM), a serious lung infection that also appears to be a medical complication of eating disorders.

When patients’ BMIs fall below 14 in both eating disorder and NTM populations, mortality rates escalate. “So the goal would be to try to define the prevalence of covert eating disorders” among people with NTM, said Mehler, explaining the emergent ACUTE-NHLBI alliance.

Throughout the lecture, he continued to circle back to a positive take-home message: Despite the broad range and severity of medical problems that people with eating disorders face, proper care can save their lives in most cases and significantly restore much of their health.

“The good news is that with good treatment and weight restoration and cessation of purging behaviors, these disorders and the complications that we take care of in general are reversible—totally reversible, aside from two notable exceptions”—cerebral atrophy (loss of brain matter that can lead to permanent deficits in cognition, taste and smell) and osteoporosis.

He pointed to results from a 2017 Massachusetts General Hospital longitudinal study that followed people diagnosed with either AN or BN for periods of 16, 20 and 25 years. It found that more than 60 percent of anorexia patients and close to 70 percent of bulimia patients recovered.

“I don’t want to leave with a pessimistic feel,” Mehler concluded. “These are curable illnesses. It’s a young population worth investing the time...There is hope for this disorder. By identifying these patients, getting them into the proper levels of care, we can make a dent in this illness.” **R**

Botanical Safety Taken on by New Consortium

Looking to address concerns about the safety of botanicals, NIEHS joined forces with FDA and the nonprofit Health and Environmental Sciences Institute (HESI) to form the Botanical Safety Consortium, through a recent memorandum of understanding. The group serves as a collaborative forum on botanical safety research, drawing global scientists from government, academia, consumer health groups, industry and nonprofit organizations.



Dr. Cynthia Rider leads several NTP studies that evaluate the safety of botanicals such as echinacea, black cohosh and valerian root.

PHOTO: STEVE MCCAWE

Information on opportunities to contribute to and participate in the consortium are available at <http://botanicalsafetyconsortium.org/>. This page includes an application form that stakeholders can submit to note their interest.

“There are legitimate concerns about the lack of safety data and variable quality of products in the marketplace,” said Dr. Cynthia Rider, a toxicologist at NIEHS’s Division of the National Toxicology Program (NTP). “The Botanical Safety Consortium is dedicated to providing a sound scientific basis for using cutting-edge toxicological tools to evaluate the safety of botanical ingredients.”

NIH and the National Center for Health Statistics conducted a study from 2002 to 2012 and reported that approximately 18 percent of Americans use botanical supplements. According to the NIH Dietary Supplement Label Database, there are an estimated 27,000 such supplements on the market. These products are intentionally marketed for their health effects yet have few of the usual standards of quality, effectiveness and safety that are applied to pharmaceuticals, said NTP associate director Dr. Brian Berridge. “The consortium will enable this field to collaboratively identify the most pressing challenges in botanical safety,” he said. “The community can then develop approaches to address those challenges.”

The Botanical Safety Consortium has the following objectives:

- Engage with a broad group of stakeholders to apply the best scientific approaches.
- Establish levels of various chemicals to characterize complex biological products.
- Identify cell- and computer-based toxicity assays to evaluate botanical safety.
- Evaluate these tools through comparison to available safety information.
- Integrate these tools and approaches into a framework for effective evaluation of botanical substances.



“NTP, working with scientific partners and stakeholders, is uniquely positioned to build a better understanding of the possible harms from botanicals,” said Berridge. “A better understanding of harms will allow the industry to design safer products and the public to make better informed choices.”

As convener and facilitator of the consortium, HESI drafted specific guidelines for membership and participation in the effort. “We are in the process of identifying interested parties who would like to engage with us, particularly as members of the Stakeholder Council or as experts for the technical working groups,” said HESI associate director Dr. Michelle Embry.

The consortium is one pillar of a recent FDA statement about new steps to modernize dietary supplement regulation. The group plans to hold an informational meeting in Washington, D.C., on May 29 to recruit new members and solicit input into current scientific challenges and opportunities related to botanical dietary supplement safety. The meeting will be webcast.—**Marla Broadfoot**

DATA NEEDED



NICHD postdoctoral fellow Vidal-Ribas on an outing to pick up groceries for four neighbors

Volunteer

CONTINUED FROM PAGE 1

and a team of volunteers have been picking up essentials for neighbors who are elderly, have immunosuppressive conditions or are currently sick and living alone.

When Vidal-Ribas, a clinical psychologist, first came to the United States 4 years ago, he arrived at NIH as an NIMH predoctoral fellow and settled into Parkside

their neighbors' groceries and prescriptions. The community already had a group that helped neighbors with shopping, but most of these volunteers are high-risk individuals who now need help themselves.

Volunteers have gotten the word out by circulating flyers and coordinating outreach with the Parkside management office. Residents in need can email or call in their requests. To stay as safe as possible on these errands, volunteers shop for multiple

• • •
“This is one of the things keeping me grounded right now, just having the sense that I can help.”

—DR. PABLO VIDAL-RIBAS BELIL

Condominium, a community with more than 800 units in North Bethesda. When the COVID-19 outbreak began, Vidal-Ribas left notes on a few neighbors' doorsteps, offering his help.

Soon after, he and another concerned resident launched a neighborhood coronavirus task force. They hold virtual meetings with a growing group of volunteers and created a system to track and fill requests for

residents at a time to minimize outings and follow CDC safety, sanitizing and distancing guidelines.

“We noticed that most of the people requesting grocery items really want to talk,” said Vidal-Ribas. “Some have cried on calls too,” which made him realize many could also use emotional or social support.

“People of all ages are feeling anxious, though seniors may feel particularly isolated

and disconnected amid the current physical distancing,” said Vidal-Ribas, who decided to expand the group's offerings to include virtual chats and other activities.

Helping his neighbors has been rewarding. “This is one of the things keeping me grounded right now, just having the sense that I can help,” he said. “We have volunteers of all ages. I got especially emotional after a man in his 70s, who is himself a high-risk individual, joined the group as a volunteer. He can't go shopping but he offered to manage the data entry. We also have a talented teenager who offered to give music concerts remotely.”

It's heartwarming that more and more Parkside residents are inquiring about how they can help, said Vidal-Ribas. “It really brings back your faith in humanity.” **R**



Rare sight—available parking on a weekday (Mar. 27). As NIH observes social-distancing and telework guidelines, NLM, like some other facilities, is temporarily shut down. As a result, less energy is being used for heating and cooling buildings.

PHOTO: BRANDON HARTZ

Energy Savings Offset by New Demands

With so few people on campus nowadays due to NIH's response to the novel coronavirus pandemic, much less energy is being used to cool and heat campus buildings. Savings in that arena, however, have been offset by new demands.

As of press time, the Office of Research Facilities had not yet received NIH's electric bill for March 2020. “However, regarding natural gas and fuel oil, March 2020 was 35 percent lower—on average—when compared to the months of March of 2015 through 2019,” said Brad Moss, ORF/ORS communication director.

However, he explained, offsetting these savings have been unprogrammed costs such as additional disinfection; air rebalancing in the Clinical Center to prepare for potential COVID-19 patients; construction of plexiglass safety guards; procurement of HEPA filters for potential COVID-19 patients; and engineering analyses to configure the Clinical Center for potential COVID-19 patients.

Jones Helps Patients Make Tough Decisions

When Dr. Randy Jones described his program of research during the first NINR Director's Lecture of 2020, he emphasized the importance of considering the many different factors such as family involvement, faith and cultural beliefs that contribute to how cancer patients make treatment decisions. It is no wonder that Jones's background in mental health helped shape his approach to designing research and interventions. His clinical experience is in psychology and mental health, which led him to study the psycho-social behaviors of those with chronic illnesses.



Dr. Randy Jones speaks at the first NINR Director's Lecture of 2020.

PHOTO: CHIA-CHI CHARLIE CHANG

"Thinking about how we, as researchers, can be able to provide the best care for patients, you have to look at different aspects of a patient's life," he said.

Jones, a professor at the University of Virginia School of Nursing, concentrates primarily on health disparities and prostate cancer. He looks to improve quality of life for those with cancer. He is currently a principal investigator on an NINR-funded study focusing on treatment decision-making among patients with advanced prostate cancer.

Throughout his career, Jones has linked his research to the implications for health care providers, the need to make sure patients feel part of the process and the crucial role that the patient's support system plays in the care of cancer patients. He has found that decision aids help patients understand treatment decisions; they facilitate an interactive patient-health care provider relationship. Jones's work highlights the benefits of utilizing a culturally sensitive decision aid for advanced prostate cancer.

His lecture is available at <https://www.youtube.com/NINRnews>.—**Adrienne Burroughs**



"Sleep deficiencies are associated with a wide range of suboptimal health outcomes, high-risk health behaviors and poorer overall functioning and well-being," the report states.

Sleep Health Disparities Research Can Be Improved, Experts Say

Recommendations from a 2018 workshop on the role of sleep in health disparities (SHDs) were published recently in the journal *Sleep*. Dr. Chandra Jackson, who holds a joint appointment at NIMHD and NIEHS, co-chaired the meeting and is the report's first author.

The 2-day event was organized by NIMHD, NHLBI and the Office of Behavioral and Social Sciences Research. Experts in health disparities and sleep shared insights from their respective fields and identified research gaps. Their recommendations addressed future studies and interventions.

"Inopportune exposure to light, noise, poor air quality and psychological stress can affect sleep health," Jackson said. "Certain populations have been shown to be disproportionately exposed due to residential and labor market segregation."

Those populations include racial and ethnic minorities and socioeconomically disadvantaged groups. Jackson noted that the report's recommendations could foster research that helps reduce disparities in sleep health. They include:

- Integrate health disparities and sleep research approaches. This suggestion was a key take-home message from the workshop, Jackson said. "Most sleep research has focused on biological


pathways and mechanisms while largely ignoring [research participants'] sociocultural and physical environments," the report states.

- Investigate the influence of SHDs on daily function, quality of life and social consequences. "Sleep deficiencies are related to increases in risk of serious accidents and injury at work and while driving; poorer cognition, social interactions and emotional functioning; [and] risk-taking behaviors," wrote the authors.

- Train a diverse workforce to conduct transdisciplinary research on SHDs. According to the report, "Training workshops, educational courses and mentoring from experts in both sleep and health disparities

can be used for future workforce development and may prevent unnecessary attrition of diverse researchers."

The researchers also suggested addressing SHDs through such educational and social interventions as flexible work schedules and school start times that allow young students adequate sleep. The authors emphasized that interventions should be culturally appropriate.

"Our hope is that recommendations from this report are implemented by research and clinical communities. That could lead to major progress toward understanding and addressing sleep health disparities across the life course," Jackson said.—**Ernie Hood** 



Dr. Chandra Jackson co-chaired the meeting and is the report's first author.

PHOTO: STEVE MCCAW

NIH Career Symposium Goes Virtual

May 8

The Office of Intramural Training & Education invites all NIH graduate students and postdoctoral trainees, both basic scientists and clinicians, to participate in the 13th annual Virtual Career Symposium on Friday, May 8, from 8 a.m. to 4 p.m.

The symposium provides an opportunity every year for fellows and graduate students to learn about scientific career options and to explore factors that lead to career success.

The virtual program will include pre-recorded interviews, panels and live sessions highlighting career opportunities available to biomedical scientists.

Panel sessions cover academic, government, policy, industry and non-profit career paths. Speakers will provide insights into their careers: what their current job entails, its pluses and minuses and how they got there.

For details, visit www.training.nih.gov/events/view/_2/2823/13th_Annual_NIH_Career_Symposium.

Viboud

CONTINUED FROM PAGE 1

work from these very early datasets and we haven't stopped since."

On a typical day, she and colleagues compile data from various sources, enter the information into computer applications and analyze the results to provide evidence for decisionmakers.

"There are different flavors of models—some are retrospective, trying to reconstruct what happened," she explains. "Others are simulation models that try to project what could happen using different scenarios and interventions."

Describing the prospective side, Viboud says, "Once we have transmission parameters that we've estimated from data, initially from China, we can put them in simulation models and use those to predict the outbreak trajectory in new locations. For instance, what if we stopped all interventions, if social distancing was relaxed now, what would happen? Would incidence rates increase? Maybe not right away—it takes time for cases to build up. If rates did rise again, what would happen if schools closed again, etc.? So you can explore the dynamics of the outbreak over long time periods."

At NIH for 18 years, Viboud specializes in respiratory ailments. She calls COVID-19 her second pandemic, as she worked on swine flu too. Currently, the epidemiology division at Fogarty has a team of 16, with 7 assigned to work full-time on COVID-19.

"We've done a lot of our work on the retrospective [aspects], in particular working with Chinese and Korean data," she points out. "Now the data from the U.S. and South Africa are just starting to become available. We get datasets weekly. We analyze epidemic curves—that's our bread and butter. We look at case counts by onset date and study changes in transmission intensity over time and by geography. Typically, with this epidemic, you start with a high transmission rate, when the population is not aware of the outbreak and hasn't applied an intervention."

These days, work starts with an eye trained to media, Viboud says. "So I look at the news when I wake up, particularly case and death counts. I look closely at the decrease in case counts that we're starting to see in Europe and also the U.S. and try to make sense of why deaths keep rising

in some places. We know that deaths are substantially delayed from infection."

Her group is, of course, intensely focused on informing next strategies in the global crisis.

"Right now, we're looking at the impact of social distancing in reducing contacts and also stopping transmission," she says. "We're also looking at the impact of contact-tracing. If we did contact-tracing very intensively, would that be enough to stop transmission? That's a key question now in the U.S., as we try to relax social-distancing measures. What do we do next, so that it doesn't come back?"

Balanced with her research, however, Viboud—like everyone else—grapples with living in an era filled with unusual conditions and circumstances, and their effects.

"What's really great is that mathematical modeling and the type of analytic work we're doing can be done anywhere," Viboud concludes. "We work with partners all over the world and remote collaboration is something we do all the time, so teleworking

is not much of an issue...It is exciting but also sobering knowing that what you do matters, and that it could also change policy and potentially have an economic impact. Usually we work in situations where our outputs are much more theoretical, and we now have this added pressure."

Nevertheless, she says, what remains gratifying is that her field by its very nature routinely leads to a great deal of cooperation; COVID-19 has amplified the importance and value of international sharing.

"Right now, there's a lot of effort to compare outputs from different models and geographies," she explains. "Because there's so much uncertainty with this virus—because it's new—we really need to hear from different models and different approaches to make sure what we decide is based on the best evidence that we have. So that's really exciting, but I can also see the toll that it's taking on everyone in the modeling community." **R**

HHS Deputy Secretary Donates Blood, Films Video

Eric Hargan, HHS deputy secretary, visited the NIH Blood Bank on the morning of Mar. 24. He came to donate blood and to participate in a video about the importance of blood and plasma donation, especially during a pandemic that is keeping donors from visiting blood banks, thus creating shortages.

He had several takeaway messages emphasized in the video: Donating blood is safe and it saves lives, but you must check your eligibility to donate. Centers for blood and plasma donation remain open, but it's best to call ahead and make an appointment. Lastly, such centers are easy to find by searching online.

"COVID-19 is not blood-borne and donation centers are taking extra precautions based on CDC guidelines, including social distancing, to ensure the good health of those who donate," Hargan said.

He added, "Every two seconds a patient needs a blood transfusion. Coronavirus patients don't typically need blood, but patients at hospitals who've experienced events such as car accidents or who need lifesaving cancer treatments still do. The donation you make can potentially save up to three lives."



HHS Deputy Secretary Eric Hargan gives blood at NIH, an occasion that was videotaped for use in a public service announcement.



At left, Hal Wilkins, donor recruitment supervisor, and Dr. Kamille West, chief, blood services section, Clinical Center department of transfusion medicine, show that the NIH Blood Bank is open for business. At right, Hargan and his wife Emily, who also donated blood, give the thumbs up afterwards.

PHOTOS: CHIA-CHI CHARLIE CHANG



Dr. Robert A. Colbert and Dr. Gayle Lester have recently been named to new roles at NIAMS.

NIAMS Names Colbert, Lester to Leadership Positions

The National Institute of Arthritis and Musculoskeletal and Skin Diseases has appointed Dr. Robert A. Colbert as director of the institute's Clinical Research Program. Colbert, who joined NIAMS in 2008, had served as deputy clinical director since 2012 and as acting clinical director since June 2018.

Prior to coming to NIH, he was a professor of pediatrics at Cincinnati Children's Hospital Medical Center and the University of Cincinnati and director of the division of rheumatology at the children's hospital. He was also associate director of the University of Cincinnati's Physician-Scientist (M.D./Ph.D.) Training Program from 1998 to 2008.

He trained in clinical and postdoctoral research in rheumatology at the University of North Carolina at Chapel Hill and Duke University. Colbert earned his M.D. and Ph.D. in biophysics from the University of Rochester School of Medicine and trained in pediatrics at Strong Memorial Hospital, Rochester, N.Y.

NIAMS also appointed Dr. Gayle Lester as director of the Division of Extramural Research. She had held the position in an acting role since the reorganization of the institute's extramural program in April 2018. She assumed the director position in March and will continue to oversee both DER and the Office of Extramural Operations.

Lester joined NIAMS in January 2001. Prior to her arrival at NIH, she was a professor in the department of orthopaedics at

the University of North Carolina at Chapel Hill. Her research interests included ligament healing, hormonal control of bone metabolism, measurement and regulation of bone mineral density, biochemical markers of bone turnover and articular cartilage biochemistry.

In addition to her management of grants at NIAMS, she continues to serve as project officer for the Osteoarthritis

Initiative, a group of contracts with the institute that support a longitudinal cohort study focused on knee osteoarthritis and the discovery of biomarkers funded through a public-private partnership.

Lester received a doctorate in endocrine pharmacology from the Medical College of Virginia. Following a postdoctoral fellowship at UNC, she joined the faculty.

Hayes Named OD Executive Officer

Darla Hayes has been named associate director for management for the Office of the Director, NIH. She has more than 25 years of experience providing biomedical mission support at NIH.

Hayes has experience overseeing human capital and HR information technology, managing organizational change at NIH and HHS and managing corporate initiatives.

Over the past year, she has been involved in many initiatives for OD, including the strategic engagement agenda, the anti-harassment campaign and implementation of the NIH Property Management Portal.

Hayes had served as acting associate director for management, or executive officer, since May 2019.



Darla Hayes

NICHD Alumnus Campbell Mourned

Dr. Arthur A. Campbell, 96, of Ocean Pines, Md., passed away peacefully Mar. 10 at his home. He served as deputy director of NICHD's Center for Population Research from the time of its creation in 1968 to his retirement in 1994.

Campbell was a veteran of World War II and served in the U.S. Navy. He received a B.A. in political science from Antioch College



Eminent NICHD demographer Dr. Arthur A. Campbell passed away Mar. 10.

in 1948 and did postgraduate work at Columbia University. He was an eminent demographer and was well-known for his contributions to the study of fertility.

His work incorporated the rigorous application of mathematical methods that allow demographers to interpret and project population data and a commitment

to understanding the role of social and economic factors influencing childbearing and other demographic events.

Campbell served as president of the Population Association in 1973 and wrote numerous publications regarding fertility trends.

After his retirement, he followed his lifelong interest in art, travel, music and lectures at the Smithsonian Institution.

Survivors include his daughter Julie Phillips and her husband Dr. Richard Phillips, grandchildren Hunter Aanenson and Lindsay Aanenson, as well as a great-grandchild, Carter. **R**



Adherence to the Mediterranean diet—high in vegetables, whole grains, fish and olive oil—correlates with higher cognitive function, eye disease studies show.

Diet May Help Preserve Cognitive Function

According to a recent analysis of data from two major eye disease studies, adherence to the Mediterranean diet—high in vegetables, whole grains, fish and olive oil—correlates with higher cognitive function. Dietary factors also seem to play a role in slowing cognitive decline.

Researchers at NEI led the analysis of data from the Age-Related Eye Disease Study (AREDS) and AREDS2. They published their results Apr. 14 in *Alzheimer's and Dementia: The Journal of the Alzheimer's Association*.

“We do not always pay attention to our diets. We need to explore how nutrition affects the brain and the eye,” said Dr. Emily Chew, director of NEI’s Division of Epidemiology and Clinical Applications and lead author of the studies.

The researchers examined the effects of nine components of the Mediterranean diet on cognition. The diet emphasizes consumption of whole fruits, vegetables, whole grains, nuts, legumes, fish and olive oil, as well as reduced consumption of red meat and alcohol.

AREDS and AREDS2 assessed over a number of years the effect of vitamins on age-related macular degeneration (AMD), which damages the light-sensitive retina. AREDS included about 4,000 participants with and without AMD,

and AREDS2 included about 4,000 participants with AMD.

The researchers assessed AREDS and AREDS2 participants for diet at the start of the studies. The AREDS study tested participants’ cognitive function at 5 years, while AREDS2 tested cognitive function in participants at baseline and again 2, 4 and 10 years later.

The researchers used standardized tests to evaluate cognitive function as well as other tests. They assessed diet with a questionnaire that asked participants their average consumption of each Mediterranean diet component over the previous year.

Participants with the greatest adherence to the Mediterranean diet had the lowest risk of cognitive impairment. High fish and vegetable consumption appeared to have the greatest protective effect. At 10 years, AREDS2 participants with the highest fish consumption had the slowest rate of cognitive decline.

The numerical differences in cognitive function scores between participants with the highest versus lowest adherence to a Mediterranean diet were relatively small, meaning that individuals likely won’t see a difference in daily function. But at a population level, the effects clearly show that cognition and neural health depend on diet.

The researchers also found that participants with the *ApoE* gene, which puts them at high risk for Alzheimer’s disease, on average had lower cognitive function scores and greater decline than those without the gene.

The benefits of close adherence to a Mediterranean diet were similar for people with and without the *ApoE* gene, meaning that the effects of diet on cognition are independent of genetic risk for Alzheimer’s disease.

Higher Daily Step Count Linked with Lower All-Cause Mortality

In a new study, higher daily step counts were associated with lower mortality risk from all causes. The research team, which included investigators from NCI and NIA as well as

from the Centers for Disease Control and Prevention, also found that the number of steps a person takes each day, but not the intensity of stepping, had a strong association with mortality.

The findings were published Mar. 24 in the *Journal of the American Medical Association*.

“While we knew physical activity is good for you, we didn’t know how many steps per day you need to take to lower your mortality risk or whether stepping at a higher intensity makes a difference,” said Dr. Pedro Saint-Maurice of NCI’s Division of Cancer Epidemiology and Genetics, first author of the study.



A new study found higher daily step counts were associated with lower mortality risk from all causes.

“We wanted to investigate this question to provide new insights that could help people better understand the health implications of the step counts they get from fitness trackers and phone apps.”

Previous studies have been done on step counts and mortality. However, they were conducted primarily with older adults or among people with debilitating chronic conditions.

This study tracked a representative sample of U.S. adults age 40 and over; approximately 4,800 participants wore accelerometers for up to 7 days between 2003 and 2006. The participants were then

followed for mortality through 2015 via the National Death Index.

The researchers calculated associations between mortality and step number and intensity after adjustment for demographic and behavioral risk factors, body mass index and health status at the start of the study.

They found that, compared with taking 4,000 steps per day, a number considered to be low for adults, taking 8,000 steps per day was associated with a 51 percent lower risk for all-cause mortality (or death from all causes).

Taking 12,000 steps per day was associated with a 65 percent lower risk compared with taking 4,000 steps.

In contrast, the authors saw no association between step intensity and risk of death after accounting for the total number of steps taken per day.

Studies Show Stents, Surgery No Better Than Medication, Lifestyle Changes at Reducing Cardiac Events

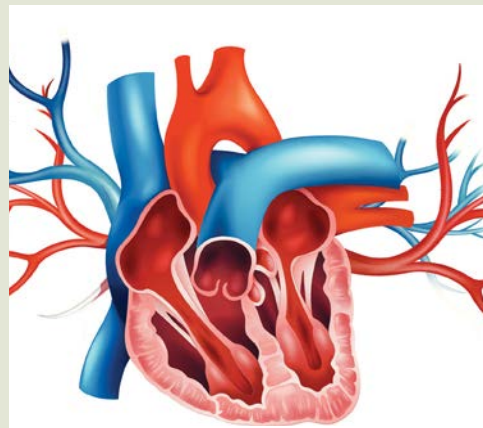
Invasive procedures such as bypass surgery and stenting—commonly used to treat blocked arteries—are no better at reducing the risk for heart attack and death in patients with stable ischemic heart disease than medication and lifestyle changes alone. However, such procedures offer better symptom relief and quality of life for some patients with chest pain, according to two new milestone studies.

The studies, designed to settle a decades-old controversy in cardiology, appeared online Mar. 30 in the *New England Journal of Medicine*. While researchers released preliminary findings last November at the American Heart Association annual meeting, the papers published Mar. 30 report the official outcomes of the International Study of Comparative Health Effectiveness with Medical and Invasive Approaches (ISCHEMIA), the largest and one of the most consequential studies of its kind.

Funded by NHLBI, the trial followed more than 5,000 patients with stable heart disease and moderate-to-severe heart disease for a median of 3.2 years. It compared an initial conservative treatment strategy to an invasive treatment strategy.

The conservative treatment strategy involved medications to control blood pressure, cholesterol and angina (chest discomfort caused by inadequate blood to the heart), along with counseling about diet and exercise.

The invasive treatment strategy involved medications and counseling, as well as coronary procedures performed soon after patients recorded an abnormal stress test. The trial allowed tests that assess coronary blood flow restriction, called ischemia, to determine who could participate in the study.



Bypass surgery and stenting—commonly used to treat blocked arteries—are no better at reducing the risk for heart attack and death in patients with heart disease than medication and lifestyle changes alone.

“Previous studies have reached similar conclusions as ISCHEMIA, but they were criticized for not including patients who had severe enough disease to benefit from the procedures. ISCHEMIA studied only patients with the most abnormal stress tests,” said Dr. Yves Rosenberg, study co-author and chief of NHLBI’s Atherothrombosis and Coronary Artery Disease Branch.

“These findings should be applied in the context of careful attention to lifestyle behaviors and guideline-based adherence to medical therapy and will likely change clinical guidelines and influence clinical practice.”

Youngsters with Diabetes Sought

Metformin-related gastrointestinal side effects (bloating, diarrhea, cramping, nausea and vomiting) are common barriers to treatment in youths with type 2 diabetes (T2D), in whom there are no other oral FDA-approved alternatives. NIDDK researchers need your help to test whether taking a daily fiber supplement could improve tolerance of metformin. Compensation is provided. If you know a 10- to 25-year-old diagnosed with T2D and needing metformin treatment, call the Office of Patient Recruitment, 866-444-2214 (TTY 800-877-8339) or email prpl@cc.nih.gov. Refer to study 20-DK-0018. Read more at <https://go.usa.gov/xDJ6k>.

Healthy Volunteers Needed

Healthy volunteers are needed for a research study on traumatic brain injury at the Clinical Center. Compensation is provided. To learn how to participate, call the Office of Patient Recruitment at 866-444-2214 (TTY 800-877-8339) or email prpl@cc.nih.gov. Refer to study 15-CC-0164. Read more at <https://go.usa.gov/xpPQV>.

People with SAA Sought

NHLBI researchers are studying a new therapy for patients diagnosed with severe aplastic anemia (SAA). Researchers are evaluating if sirolimus can help prevent the relapse of SAA once cyclosporine treatment has stopped. All study-related medications, tests or procedures are at no cost to you. For more information, call the Office of Patient Recruitment, 1-800-411-1222 (TTY 1-800-877-8339). Read more at <https://go.usa.gov/xnuz3>. Refer to study 17-H-0019.

Healthy Volunteers Needed

NIDDK researchers seek healthy volunteers (18-45 years old) to participate in a study investigating how dopamine affects body weight and eating behavior. Participants must be able to visit the Clinical Center for 5 consecutive days to pick up food and then have a 5-day inpatient stay. For more information, call the Office of Patient Recruitment, 1-866-444-2214 (TTY for the deaf or hard of hearing: 1-866-411-1010) or email prpl@cc.nih.gov. Read more at <https://go.usa.gov/xPTBn>. Refer to study 18-DK-0132.

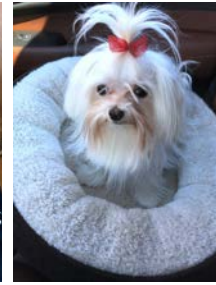
Adults Wanted for Study of Gum Disease

NIDCR seeks adults with and without gum disease (periodontal disease) to join a research study. Researchers want to learn how a person’s immune system affects the health of the mouth. You will have two outpatient visits; oral exam; dental X-rays and photos; blood, urine and saliva collection; and gum biopsy. Study-related tests and procedures are provided at no cost. Compensation will be provided. For more information, call the Office of Patient Recruitment at 1-866-444-2214 (TTY 1-866-411-1010) and refer to study 12-D-0100. Read more at <https://go.usa.gov/xpuTQ>.

Pets Come to the Rescue of NIH Teleworkers

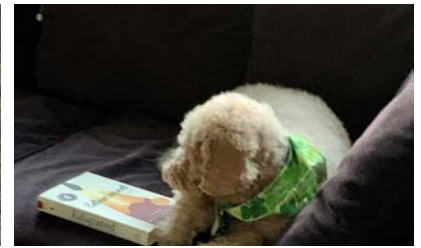
It took a global pandemic to out the throngs of NIH'ers who—given the photos on this page—obviously can't bear to work alone.

There is a popular bumper sticker showing the image of a paw, with the caption "Who rescued who?" As you can see, many employees forced to telework by the threat of COVID-19 find solace and companionship in their pets.

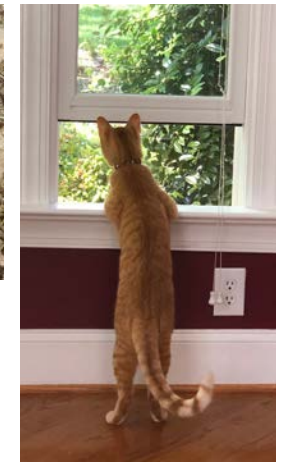


Above, "Cabot seems happy that I'm working at home, if only to gloat about napping all day," said Daniel Silber of the Clinical Center's Office of Communications. At right, Talk about supervision! Fern parks her chin on the elbow of Joseph Schumaker, eRA communication specialist in NIH's Office of Extramural Research.

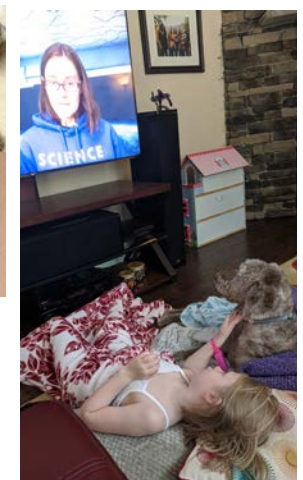
From left: "How NOT to social distance," notes Jennifer Collins, a health specialist in NIEHS's Division of Extramural Research and Training • "This is my 3-pound smile-maker, Daisy," said Christine Bruske Flowers, director, NIEHS Office of Communications and Public Liaison • "I like having lunch with Mom!" says Ali Macaw, enjoying a cracker during Bonnie Earnhardt of NIEHS's lunch break.



"Finn [] was rescued on Apr. 16, 2016, as a very sick puppy and has maintained good health and Good Boy status since then," said Dr. Bevin Blake, NIEHS. "He has enjoyed all of the bonus walks over the past few weeks, but his absolute favorite thing in the world is running around with a tennis ball and never giving it back." At right, "Our supervisor and smart dog Bliss chills on the couch getting 'educated' while practicing social distancing," said Meredith Daly, NICHD senior media relations officer.



From left: "Here's a pic of my handsome boy, Charlie," said Jennika Wells of the Office of Patient Recruitment at the Clinical Center. • "My telework colleague Arthur insists on sleeping on my desk, and he snores!" said Dr. Stephanie Smith-Roe, a genetic toxicologist in NIEHS's Biomolecular Screening Branch. • "Misty had developed non-Hodgkin's lymphoma and gone through 5 rounds of CHOP therapy as well as 5 rounds of Tanovia but had to be euthanized a month or so after this photo because her lymphoma kept becoming resistant to the drugs," said Dr. Jack Bishop, a research geneticist with NIEHS's National Toxicology Program. "She was a wonderful companion that we adopted as a rescue 5 years earlier from the SPCA. She loved everyone, but not other dogs that much. We miss her and have now gotten a new puppy but will never be able to replace her." • Lexi and Porsche (Maine Coon sisters) keep their human (NIEHS scientific director Dr. Darryl Zeldin) safe during the COVID pandemic. • Providing a metaphor for many teleworkers these days, Basil asks, "Can we go outside yet?" He belongs to Dr. Serena Dudek of NIEHS's Neurobiology Laboratory.



Clockwise from above: "Help, I am being held hostage by a giant cat," says Peter Lyster, NIGMS. • Cider helps take meeting notes for Sarah Fichter, senior writer/editor at CIT. • "Anyone ready for a play time break?" asks Chief, who belongs to Bryan Duran, a manager in NIEHS's Office of Information Technology.



Clockwise, from I: My coworker Seryy (Russian for grey) is fuzzy and ran away when I tried to get her to wear a mask," said Cheryl Thompson of NIEHS. • "Well he's not exactly a 'pup,' but Skipper has been keeping on top of my 16-year-old daughter Jessica while she settles into the new remote schooling routine (after all, somebody has to...)" notes Brian Steyskal, a contractor at NIGMS. • Day 1...I love you; don't ever leave me! Day 30...I don't understand why you never leave! reports Corey Stevanovic, a biologist in NIEHS's Neurobiology Laboratory.

"Science class" support dog Tuck does his job for Whitney Murphy, operations coordinator at NIEHS.