

COVID POST-MORTEM

What We've Learned About Coronavirus Pathophysiology

BY CARLA GARNETT

To tell the evolving story of what havoc the novel coronavirus wreaks in people who die from it, NIH's Covid-19 scientific interest group lecture series recently tapped a tag team. Dr. David Kleiner and Dr. Stefania Pittaluga, both senior research physicians in NCI's Laboratory of Pathology, presented "Covid-19 Autopsy Findings: A Joint Effort Between NYU-Winthrop Hospital and NCI—What Have We Learned So Far."

Chief scientific officer at the Clinical Center Dr. John Gallin introduced the



Dr. David Kleiner and Dr. Stefania Pittaluga teamed up to discuss covid post-mortem at a recent lecture on the novel coronavirus.

lecture by summarizing NIH's covid case census.

"I wanted to make sure you're all aware not only of the outstanding care we're giving

to patients with Covid-19—about 11 people have been treated at the Clinical Center—but also you may not be aware that currently there are 40 clinical protocols in the Intramural Research Program and 29 of them are housed in the Clinical Center, often in partnership with other institutions," he said.

Kleiner, who heads histopathology and autopsy pathology in the Laboratory of Pathology, led off by describing several challenges unique to performing autopsies on covid patients.

First, he said, it's hard to obtain the proper personal protective equipment and necessary negative-pressure suite where the

SEE **AUTOPSY**, PAGE 4



Bearing up amid nature's wonders. See p. 12.

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AN INTERNATIONAL PROBLEM NIH Pioneers Detection of Patients' Risk of Suicide

BY RICH MCMANUS



Dr. Lisa Horowitz

NIH's pioneering role in detecting suicide risk within the medical setting—in both children and adults—was the focus of a Clinical Center Grand Rounds webcast on Sept. 16, held in observance of Suicide Prevention Month.

The presentation "Suicide Prevention: From Research to Practice at NIH and Beyond" featured three speakers who addressed an international

SEE **SUICIDE**, PAGE 6

SECRETS TO SUCCESS Businesswoman Shares Strategies for Getting Ahead

BY DANA TALESNIK

We've all heard the mantra: hard work pays off. In many ways, it does. But no matter how exemplary your output, merit alone won't get you promoted, says a Wall Street executive.

Carla Harris—vice chair, global wealth management and senior client adviser at Morgan Stanley, where she has worked for 33 years—began her career



Carla Harris

SEE **HARRIS**, PAGE 8

Nov. 9

Salzman Symposium To Be Held Virtually

The 22nd annual Norman P. Salzman Memorial Symposium in Basic and Clinical Virology will be held virtually on Monday, Nov. 9. The event, hosted by the Foundation for the National Institutes



Dr. Rino Rappuoli

PHOTO: DUNCAN HULL

of Health, the NIH virology interest group and the Salzman organizing committee, honors the 40-year career in virology research of Dr. Norman P. Salzman and his accomplishments in mentoring young scientists.

Four prominent presenters in the virology field will be featured: Keynote speaker Dr. Rino

Rappuoli, chief scientist and head of external R&D at GlaxoSmithKline; Dr. Jesse Bloom, associate professor, basic sciences division and public health sciences division, Fred Hutchinson Cancer Research Center; Dr. David Wang, professor of pathology and immunology, Washington University School of

Medicine, St. Louis; and Dr. Richard Kuhn, Trent and Judith Anderson distinguished professor in science, department of biological sciences and Krenicki family director, Purdue Institute of Inflammation, Immunology and Infectious Disease, Purdue University.

In addition, this year's tribute

speaker will be Dr. Marshall Bloom, associate director for science management and chief, biology of vector-borne viruses section, Rocky Mountain Laboratories, NIAID.

For details, contact Salzman committee organizing chair Dr. Nihal Altan-Bonnet (nihal.altan-bonnet@nih.gov) or Janelle Lewis of FNIH (jlewis@fnihi.org).

Individuals with disabilities who need sign language interpreters and/or reasonable accommodation to participate in this virtual event should contact Lewis, jlewis@fnihi.org, (301) 594-3919 and/or the Federal Relay (1-800-877-8339).



Large Trial Will Test Immune Modulators for Covid-19

On Oct. 15, NIH held a media telebriefing to announce the launch of an adaptive phase 3 clinical trial to evaluate the safety and efficacy of three immune modulator drugs in hospitalized adults with Covid-19. The trial, part of the Accelerating Covid-19 Therapeutic Interventions and Vaccines (ACTIV) initiative, aims to determine if modulating that immune response can reduce the need for ventilators and shorten hospital stays. Speakers included NCATS director Dr. Christopher Austin (above, l) and NIH director Dr. Francis Collins, shown above and at right, as well as Operation Warp Speed therapeutics lead Dr. Janet Woodcock, Johnson & Johnson chief scientific officer Dr. Paul Stoffels and Bristol Myers Squibb chief medical officer Dr. Samit Hirawat.

PHOTO: CHIA-CHI CHARLIE CHANG



Virtual Workshop on Physical Activity Interventions for Wheelchair Users, Dec. 1-3

The NIH Pathways to Prevention Workshop: Can Physical Activity Improve the Health of Wheelchair Users?—originally planned for March 2020—has been rescheduled for Dec. 1-3. The workshop will take place online only, with opportunities to submit questions and comments during open discussion periods.

This virtual event is organized by the Office of Disease Prevention, the National Institute of Child Health and Human Development's National Center for Medical Rehabilitation Research and the National Institute of Neurological Disorders and Stroke. It will assess the scientific evidence on the potential benefits of physical activity interventions for people at risk of using, or currently using, wheeled mobility devices such as a manual wheelchair, motorized wheelchair or scooter. Speakers will identify and address research gaps related to the safe and effective types and amount of exercise for people using wheeled mobility devices.



The workshop is designed for researchers, health care professionals and non-scientists. Individuals who use wheeled mobility devices and caregivers are particularly encouraged to attend.

Learn more and register at prevention.nih.gov/P2P-PAforWheelchairUsers.

'OSCARS' OF GOVERNMENT Sammies Go to NIH's Fauci, Pastan

Two NIH'ers have received 2020 Samuel J. Heyman Service to America Medals (Sammies).

NIAID director Dr. Anthony Fauci was named Federal Employee of the Year. NCI distinguished investigator Dr. Ira Pastan received the Paul A. Volcker Career Achievement Award, which recognizes significant and sustained contributions during 20 or more years of federal service.

Known as the "Oscars" of government, the honors are given annually by the nonpartisan, nonprofit Partnership for Public Service to honor outstanding achievement by public sector employees.

The partnership honored Fauci for serving "as the government's premier expert and spokesperson on infectious diseases during six presidencies, including taking a prominent role in seeking to protect the public from the highly contagious and deadly new coronavirus that swept through the country and the world in 2020."

In a humorous video, Fauci, also well-known as a staunch fan of local sports,



NCI's Dr. Ira Pastan received the Paul A. Volcker Career Achievement Award. He has been an NCI investigator for over 60 years.

accepted his Sammie from four of the Washington Nationals Racing Presidents. The mascots were filmed wearing face masks at the stadium, where they received the Employee of the Year trophy—and sealed winner's envelope, Oscars-style—from a tuxedo-wearing Sammies official. After opening the envelope and realizing the winner's identity, the mascots take off running through D.C. until they reach



NIAID director Dr. Anthony Fauci accepts his Federal Employee of the Year Award from a quartet of visiting mascots from the Washington Nationals baseball team.

Fauci's front door, where the honoree—also wearing a Nationals face mask—thanks them for the award.

In remarks following formal presentation of the Sammie by actor and producer Kristen Bell, Fauci describes his worklife before and during Covid-19.

View both videos at <https://servicetoamericamedals.org/honorees/anthony-s-fauci-m-d/>.

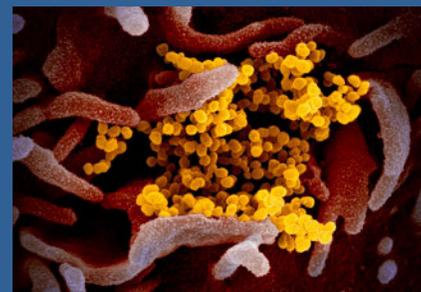
Pastan, a scientific luminary at NCI for more than 60 years, was lauded for developing a non-chemotherapeutic drug for a bone marrow cancer—hairy cell leukemia. In the virtual Sammies ceremony, longtime colleagues such as NIH director Dr. Francis Collins and former NIH director Dr. Harold Varmus spoke of Pastan's career of research excellence and innovation as well as his many decades of mentoring generations of scientists.

In videotaped remarks, Pastan thanked his wife and children for their sacrifices for his career, and his research group, the "Immunotoxin Team," for their collaboration over the years. He also discussed the mechanism of hairy cell disease, how the drug he devised works and how he hopes to develop similar iterations of it for other cancers, including mesothelioma.

NIH'ers were also among 2020 Sammie finalists: Dr. Nancy Sullivan, chief, bio-defense research section in the Vaccine

Research Center, was cited for her development of an effective Ebola treatment; and Dr. John Tisdale, chief of the Cellular and Molecular Therapeutics Branch at the National Heart, Lung and Blood Institute, and Dr. Griffin Rodgers, director of the National Institute of Diabetes and Digestive and Kidney Diseases, were noted for their pioneering research on a cure for sickle cell disease.

Watch the hour-long virtual ceremony, which salutes all public servants and Sammie honorees, and features appearances by former presidents George W. Bush and Barack Obama along with celebrities such as Bono, Samantha Bee and Stephen Colbert at <https://www.youtube.com/watch?v=D-1qrMBEfp6M>. [R](#)



ON THE COVER: *Novel Coronavirus SARS-CoV-2.* This scanning electron microscope image shows SARS-CoV-2 (yellow)—also known as 2019-nCoV, the virus that causes Covid-19—isolated from a patient in the U.S., emerging from the surface of cells (pink) cultured in the lab.

IMAGE: NIAID ROCKY MOUNTAIN LABORATORIES

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Autopsy

CONTINUED FROM PAGE 1

remains of extremely contagious patients can be safely handled. Then there is overcoming the understandable reluctance of personnel to participate in covid-related autopsies as well as difficulty securing appropriate disinfection procedures afterward.

“These challenges are sufficient to prevent most hospitals from even performing these autopsies at all and no medical examiner that I know of is performing autopsies on patients with covid infection,” Kleiner said.

Additional problems include arranging transportation for patients with SARS-CoV-2 to autopsy and obtaining permission from next of kin.

“Families are not present at the bedside when the patient dies and this leads to issues trying to reach family members to give consent for autopsies.”

Finally, Kleiner noted difficulties getting quality tissue—covid patient remains are often hypoxic or obese. And there are challenges interpreting the findings—distinguishing pathology caused by the virus from pathology due to complications after infection or underlying disease.

The lecture covered 18 cases—11 men and 7 women, ranging in age from 44 to 85, with an average age of 65. Thirteen had hypertension, 8 had diabetes and 10 were obese. Other comorbidities in the group included COPD, coronary artery disease, cirrhosis, kidney transplantation and cancer. Morbid obesity evidenced by dense fatty tissue in the lower abdomen was identified at autopsy in 17 of the cases. Two of the patients in the study group technically had never been hospitalized; they died in the emergency room before actual admission.

Kleiner pointed out that the main post-mortem finding—a medical observation that has been widely reported throughout pandemic media coverage—was severely impaired lungs or diffuse alveolar damage (DAD) that is commonly associated with acute respiratory distress syndrome.

“[DAD] results in lungs that are completely solid,” he explained. “When you hold them, they are heavy...You don’t feel the air crackling underneath your fingertips as it

moves through the alveoli. They’re full of fluid and cells.”

Most of the patients also showed peribronchial inflammation. Kleiner noted that once people exhibit the extent of fibrosis resulting from DAD, their condition rarely improves. Typically, he said, the patient’s lungs further deteriorate and they develop pneumonia in addition to DAD.



Pittaluga and Kleiner split screen time during a recent talk on Covid-19.

Investigators also observed micro-thrombi, or platelet clumps, which obstruct blood flow within the lungs, in a number of the patient samples.

The pathology team, seeing that thrombosis may be indicated in early Covid-19 disease progression, quickly published those findings in the *Lancet’s EClinicalMedicine* July edition.

In her half of the lecture, Pittaluga focused on several special studies on tissue localization of viral particles and gave an overview of some initial cytokine/chemokine evidence identified in the autopsy samples. She and her team pursued clinical residue of possible responses to SARS-CoV-2 by the immune system and other major organ systems.

Research partners at NYU performed the dissection and electron microscopy of the tissues. Samples were collected from patients’ lungs, heart, kidney, bone marrow, liver and skeletal muscle. SARS-CoV-2 particles were identified in the kidney and bone marrow, Pittaluga reported.

In addition to immunohistochemical

staining, NIH scientists used another method to examine the tissues.

“*In situ* hybridization is a powerful technique that may allow us to characterize the spatial and temporal nature of host-viral interactions in Covid-19,” said Pittaluga, a member of NIH distinguished investigator Dr. Elaine Jaffe’s hematopathology section in NCI and an expert on *in situ* hybridization.

Researchers at NIH were able to detect the virus only in lung tissue samples and in just 5 out of 16 cases, with greater viral loads found in untreated patients early in the course of their infection.

NIH investigators went looking for and found evidence of IL-6 production in the patient samples, Pittaluga said. Since the pandemic’s start, scientists have wondered

whether the presence of large quantities of IL-6, which the body often produces in response to inflammation, could indicate which Covid-19 patients are in the poorest condition. High levels of IL-6 in the serum has been linked with poor outcome in several large studies, she pointed out.

Pittaluga said her group found IL-6 in 13 of the 16 samples, but could not definitively correlate the amounts of IL-6 to the amounts of coronavirus detected.

“We did not [see] a correlation between the level of expression of IL-6 in the serum and the amount present in the tissues,” she explained. “Of course this is a very small study and not a prospective one, so we have the serum level at the time of hospitalization and not at the time of death.

“We will continue to investigate pro-inflammatory mediators in lung and other tissues of SARS-CoV-2 patients,” she concluded.

Watch the lecture at <https://videocast.nih.gov/watch=38104>. Also, NCI is hosting a digital repository for covid-related pathology at <https://covid19pathology.nih.gov/>. 

★★★
“No medical examiner that I know of is performing autopsies on patients with covid infection.”

-DR. DAVID KLEINER

★★★

Stetten Lecture on 'Rethinking General Anesthesia,' Nov. 18

The 2020 DeWitt Stetten Jr. Lecture on "Rethinking General Anesthesia" will be given by Dr. Emery N. Brown on Wednesday, Nov. 18 from 3 to 4 p.m. via <https://videocast.nih.gov/> and Webex.

Doctors have employed general anesthesia for more than 165 years in the United States, and more than 100,000 Americans receive this medical treatment each day for surgery. Still, how anesthetic drugs work has long remained a mystery. New insights on general anesthesia will be the focus of Brown's talk.

He is the Warren M. Zapol professor of anaesthesia at Harvard Medical School and Massachusetts General Hospital (MGH), the Edward Hood Taplin professor of medical engineering and of computational neuroscience at Massachusetts Institute of

Technology and a practicing MGH anesthesiologist whose research has helped explain how anesthetic drugs act in the brain. These discoveries have led to new ways of monitoring patients' brain states during general anesthesia, as well as strategies for drug dosing and precisely controlling the anesthetic state.



Dr. Emery N. Brown

PHOTO: PICOWER INSTITUTE

Brown has also developed signal-processing algorithms and statistical methods that characterize the dynamic properties of neuroscience data. Long-term goals of his research include establishing a neurophysiological definition of anesthesia and developing safer, site-specific anesthetic drugs and better methods for measuring depth of anesthesia.

NIGMS began supporting Brown's work in 1996. He has also received funding from the National Institute of Biomedical Imaging and Bioengineering, the National Institute on Drug Abuse, the National Institute of Mental Health, the National Institute on Aging and the Office of the Director.

The annual Stetten Lecture was established in 1982 in honor of NIGMS's third director. It is open to all who are interested. Those who require sign language interpretation or other reasonable accommodation to participate should contact WALSoffice@od.nih.gov (or the Federal Relay, 1-800-877-8339) 5 days before the lecture.

For more information, visit <https://www.nigms.nih.gov/News/meetings/Pages/2020-stetten-lecture-rethinking-general-anesthesia.aspx>.

Astute Clinician Lecture To Address Gaucher Disease

NOV. 4

Dr. Ellen Sidransky will give the Astute Clinician Lecture as part of the NIH Director's Wednesday Afternoon Lecture Series on Nov. 4, remotely, from 3 to 4 p.m. via <https://videocast.nih.gov>. She will present "Gaucher Disease: How a Rare Disease Provides a Window into Common Neurodegenerative Disorders."



Sidransky is a pediatrician and geneticist at NHGRI whose career has focused on Gaucher disease and Parkinson disease and studies of genotype/phenotype correlation and genetic modifiers, insights from mouse models and novel treatment strategies. Her research played a lead role in establishing the association between glucocerebrosidase and parkinsonism.

She earned her medical degree from Tulane University and completed her pediatric residency at Children's Memorial Hospital and the McGraw Medical Center of Northwestern University in Chicago. She is currently chief of NHGRI's Medical Genetics Branch.

The annual Astute Clinician Lecture was established in 1998 through a gift from the late Dr. Robert W. Miller and his wife, Haruko. It honors U.S. scientists who have observed unusual clinical occurrences and, by investigating them, have opened an important new avenue of research. Learn more at www.cc.nih.gov/researchers/lectures/astuteclin.html.

Sign language interpreters can be provided for WALS lectures. Individuals who need reasonable accommodation to participate should contact WALSoffice@od.nih.gov or the Federal Relay (1-800-877-8339).

NIAAA Webinar Targets Alcohol, Suicide Prevention in Indigenous Youth

The National Institute on Alcohol Abuse and Alcoholism recently hosted a webinar, "Substance abuse prevention for youth in indigenous communities." Institute leaders, grantees and Alaska Native community members shared their unique perspectives on research, including the Qungasvik (Tools for Life) Project that was collaboratively designed and culturally tailored to prevent suicide and alcohol use in youth in their communities. This decades-long work addresses an established health disparity, as suicide and alcohol misuse disproportionately affect indigenous populations across the United States.



Two members of the Yup'ik community in Alaska, which is collaborating with an NIAAA grantee on an alcohol-use prevention program

PHOTO: GEORGIANNA, SCAMMON BAY, ALASKA

During the webinar, NIAAA director Dr. George Koob described his reaction to a recent trip to the Alaska project sites. He said he "felt heartened and encouraged by the innovative approaches of the researchers, the dedicated service of the community health care professionals and the indomitable spirit of the proud people who continue to live meaningful lives under often difficult circumstances."

The interventions created and assessed in the Qungasvik project aim to prevent suicide and alcohol use by engaging youth in cultural activities that bolster community connectivity. The webinar used these projects as a case study for creating similarly tailored interventions for American Indian and Alaska Native communities across the United States.

Dr. Judith Arroyo, coordinator for activities related to minority health and health disparities at NIAAA, summarized the ongoing research efforts: "This project uses culture as a resiliency factor against suicide and alcohol use. It shows us that engaging young people in cultural activities makes them feel happy as reflected in increased reasons for living. This, in turn, leads them to live a healthier lifestyle and not drink alcohol."

The webinar can be viewed at <https://videocast.nih.gov/watch=38651>.

Suicide

CONTINUED FROM PAGE 1

public health problem. According to 2018 global data, suicide is the 10th leading cause of death for people of all ages, but the second leading cause for youth.

A highly stigmatizing act to contemplate or attempt, suicide claimed more than 48,000 lives in 2018. That's 132 deaths each day, with 18 a day occurring in youth. In the period 1999 to 2017, the rate in youth jumped "a staggering 225 percent," said Dr. Lisa Horowitz, staff scientist/clinical psychologist and director of patient safety & quality in NIMH's Intramural Research Program. Rates are highest in minority and native populations, she added.

The most potent risk factor for suicide is a previous attempt, she said. Mental illness is also a risk factor; most who die by suicide have a diagnosed mental health concern but many do not, which is why it is important to screen universally.

Along with increased use of alcohol and drugs, and irregularities with respect to sleep—either too much or too little—it is talking about wanting to die that is the clearest warning of suicide, she explained.

It was a 2005 suicide in the then newly opened Clinical Research Center that galvanized the NIH effort to screen for suicide in the medical setting, said Horowitz. Such events are "rare and devastating in a hospital setting," she said. And not all suicides in hospitals involve patients with behavioral issues; about 14 percent occur in non-behavioral health settings.

"Under-detection is a terrible problem," Horowitz said. "Most [health care] settings don't screen for [suicide]."

What clinical researchers sought to create was a brief and accurate tool that staff—mainly nurses—could employ upon patient intake. They developed the ASQ (Ask Suicide-Screening Questions) tool, which within about 20 seconds poses 4-5 questions whose answers have proven to be reliable indicators of suicide risk.

ASQ is now in the public domain and has been translated in 16 languages, reported Horowitz. There is an ASQ toolkit (www.nimh.nih.gov/ASQ) that includes videos and scripts for staff. If a patient screens positive, there is a defined pathway for further care.

The plan to screen CC patients began around 2011, starting with a pilot feasibility study in adults, which led to a multisite research study for adult medical patients that began at the CC in 2014, said Horowitz. In 2016, the CC began an effort to screen all patients, as evidence accumulated that the ASQ protocol was effective for both youth and adults.

"I feel that screening at the Clinical Center is important," said second presenter Barbara Jordan, service chief for nursing operations in the NIH nursing department and acting service chief

for neuroscience, behavioral health and pediatrics at the CC. "I was a critical care nurse for most of my career, and I saw patients who had made unsuccessful [suicide] attempts. There is sometimes a cynicism on the part of health care providers. The stigma associated with suicide is still very real."

She continued: "Our patients often have devastating diagnoses, and therefore may be more at-risk for suicide attempts."

In her experience, patients with behavioral diagnoses often were screened for suicide, but not medical/surgical patients. In 2016, she led a multidisciplinary team that included NIMH to develop implementation policies and procedures on screening all



Barbara Jordan (l) and Deborah Snyder explained their roles in development of suicide screening in CC patients.

inpatients at the Clinical Center.

"The electronic health record [EHR] is vital to the process," she said. Using the CC's Clinical Research Information System (CRIS), the team taught nurses to screen patients by following a script that provided pop-up guidance on what to do next, given a patient's answers to questions.

If a patient had acute thoughts of suicide, that was considered an emergency requiring one-to-one monitoring followed by a psychiatric evaluation to ensure safety; she noted that acute positive screens are very rare among medical patients.

A non-acute positive screen requires further evaluation from Clinical Center social workers, with notification to the primary care team, Jordan explained.

When it was clear that the pilot screening program in adults was effective, the NIH team knew they had to focus next on patients ages 10-24, using the ASQ.

Some subtleties developed over time in the two age groups. Whereas refusal to answer a question in youth is considered a positive response, that's not necessarily true in adults, Jordan said. And privacy emerged as an important

condition—a patient of any age is less forthcoming if there are other people, especially parents, in the room.

There is also the problem of patients who are not cognitively able to be screened, Jordan said.



Purpose for Implementation

- The Joint Commission National Patient Safety Goal 15 – *The hospital identifies safety risks inherent in its patient population.*
 - *Screening is only required in hospital psychiatric units or*

Jordan saw firsthand the effects of suicide attempts, in an earlier career as a critical care nurse.

• • •
"Under-detection is a terrible problem. Most [health care] settings don't screen for [suicide]."

-DR. LISA HOROWITZ

• • •



Public Health Problems

2018 deaths among all ages

- Influenza & pneumonia: ~55,000 deaths a year = 150 per day
- Among 10-24-year-olds: ~241 deaths a year = 4 per week

In the period 1999 to 2017, suicide in youth jumped “a staggering 225 percent,” said Horowitz.

Her team developed online training modules and in-person sessions were created so that nurses feel comfortable and supported during screening. They also developed educational materials for patients, parents and social workers.

On Sept. 29, the CC adopted one tool—ASQ—for both youth and adults. Plans are underway to screen outpatients in 2021.

The session’s final speaker was social worker Deborah Snyder, senior adviser to NIMH’s clinical director and deputy director of patient safety & quality for the institute.

As screening guidelines developed, she explained, the NIMH team wondered if patients would find it acceptable to be asked such questions. And would staff mind inquiring?

In a pilot quality improvement project involving 331 adult patients, 13 screened positive for suicide risk, which is about the typical prevalence in a health care setting, said Snyder—about 3-4 percent. But 87 percent said they were comfortable being asked, versus 60 percent of nurses who were less comfortable asking; 100 percent of social workers were on board with it.

Starting in April 2017, universal screening in the Clinical Center began in adult patients, with youth being added 6 months

later. Out of 4,284 patients screened (3,760 adults, 524 youth), 97.7 percent screened negative for suicide risk over a year; 2.3 percent were positive, including a single acute-positive case.

“That is 97 people [81 adults, 16 youth] who might not have been detected otherwise,” said Snyder. Most follow-up involved CC social workers, who were trained to conduct a brief suicide safety assessment, which guides next steps.

In May, the NIH team published a journal article on universal suicide screening and its value in health care settings. Whereas in 2008, such screening was conducted at only a handful of sites in the U.S., it has now spread not only nationwide, but also globally, said Snyder.

She emphasized the importance of stakeholder endorsement: “Clinician champions are critical,” she said, “and training and re-training are crucial...Screening is feasible and easy, and valid.”

The presentations left time for a single question from

the audience: What if a patient doesn’t tell the truth?

“We are capturing a lot of people at risk,” said Horowitz. “Most people [considering suicide] want to speak about it. You should always ask directly. Remember to ask!” **R**



Results - Demographics

Demographic	Full Sample	Adults (25+)	Youth (10-24)
Total – N	4284	3760	524
Gender – N (%)			
Male	2107 (49.2%)	1827 (48.6%)	280 (53.4)
Female	2177 (50.8%)	1933 (51.4%)	244 (46.6)

“Screening is feasible and easy, and valid,” said Snyder, senior advisor to NIMH’s clinical director.

Voloshin To Lead NIH Ombuds Office

Victor Voloshin will serve as the third permanent director of NIH’s Center for Cooperative Resolution/Office of the Ombudsman (CCR), after a nationwide search. He will start later this fall.



An expert in workplace conflict management, Voloshin has served since 2009 as chief mediation officer at the U.S. Equal Employment Opportunity Commission (EEOC), helping federal agencies design and improve internal workplace programs using alternative dispute resolution (ADR). He also has directed RESOLVE, EEOC’s internal ADR program that addresses workplace problems through mediation, informal dispute resolution, group facilitations and conflict-resolution training.

Voloshin’s selection was announced on Oct. 8, which is recognized as “Ombuds Day,” an annual global celebration of the history and value of the ombuds role.

CCR functions as a confidential, informal, independent and impartial resource that facilitates collaborative processes and the creative resolution of conflict for the entire NIH community. The ombuds team addresses work-related concerns through a range of strategies and services for individuals and groups.

VOLUNTEERS

Diagnosed with Covid-19 Recently?

Have you been diagnosed with Covid-19 in the past 5 days? Then you may be able to participate in a National Institute of Allergy and Infectious Diseases study. It will help researchers determine the safety and effectiveness of the experimental drug IL-7 in helping the immune system prevent serious complications from Covid-19. Treatments and research procedures are provided at no cost. Contact the Clinical Center Office of Patient Recruitment at 866-444-2214 (TTY 800-877-8339) or prpl@cc.nih.gov. Refer to study 20-I-0140. Read more at <https://go.usa.gov/xGfaS>.

Covid-19-Positive Patients Sought

NHLBI researchers, in collaboration with Inova Health System, have opened enrollment of a new clinical study in hospitalized Covid-19 patients. The study will evaluate the drug fostamatinib for treatment of Covid-19. If you are Covid-19-positive and between ages 18-90, you may be eligible. To learn more, contact the Clinical Center Office of Patient Recruitment at 866-444-2214 (TTY 800-877-8339) or prpl@cc.nih.gov. Refer to study 000110. Read more at <https://bit.ly/2FbxkCO>.

Harris

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assuming hard work would propel her to the top.

“That is a very incomplete equation for one’s success,” said Harris, speaking at a recent virtual Deputy Director for Management Seminar Series lecture. “You will need other people’s intellect, other people’s experience and other people’s relationships to maximize your success in the seat you’re sitting in, or aspire to sit in.”

Throughout our careers, there are three types of critical relationships, she said. An adviser will counsel you and answer discreet questions. A mentor is that confidant to whom you tell the good, the bad and the ugly—your triumphs but also your fears, mistakes and concerns.

“A mentor’s job is to give you advice tailored specifically to you and your career aspirations,” said Harris. That person need not work within your organization, but to be effective, a mentor should know you well and be trustworthy.

“If you’re not sure the person you’re calling your mentor has your absolute best interest at heart, or even that you can trust them with the confidentiality of that conversation,” she said, “with all due respect, I would not call that person a mentor; I’d call that person an adviser.”

The third critical relationship, which Harris considers the most important, is the sponsor, to whom you tell only the good. “You can survive a very long time in your career without a mentor,” she said, “but you will not ascend in any organization without a sponsor.”

Harris learned this lesson when she was up for her first big promotion. Standing in front of the decision-makers, she realized her advancement was vulnerable, “not because I haven’t earned it, not because I’m not senior enough, and not because there isn’t great client feedback about me, but because I can’t say without a shadow of a doubt who is going to pound the table on my behalf.”

Behind closed doors, says Harris, all important decisions about your career will be made, and it’s your sponsor’s job to use his or her clout to argue passionately that you’re the best person for that promotion. Ask yourself: Who will go to bat for me? “If you can’t answer that question,” she said, “divert



“You can survive a very long time in your career without a mentor,” Harris said, “but you will not ascend in any organization without a sponsor.”

some of your hard-working energies into investing in a sponsor relationship.”

How do you find a sponsor? Sometimes, one magically appears at your service. But most people need to be proactive and ask someone to take on the role. When considering who to ask, Harris said, a sponsor must be someone within your organization with a seat at the decision-making table, or who has influence over those with seats, and has insight into your work. Get to know your potential sponsor before you ask.

“Building a relationship with anybody is a function of the touch that you have,” said Harris. “In professional environments, it takes very light touches to build those relationships.”

A touch can be swinging by a senior person’s office for a quick hello or friendly chat, asking this individual’s work opinion, or joining his or her meeting. Find ways to connect and be intentional about those interactions, she advised. And don’t be discouraged in our current virtual environment, she added. If nobody is in the office, everybody is on a level playing field, having to communicate in the same way. And now, everybody is reading everything, so there’s an equal opportunity to be seen and heard.

If someone declines to become your sponsor or you don’t get chosen for a

promotion, rather than stew about it, take control over your career success. “You got that opportunity,” Harris said. “Not everybody gets a role at NIH. You got one, which says you are worthy. When you start swallowing your voice and failing to exercise your voice, you’re abdicating your power.”

A sometimes-missed opportunity is soliciting feedback, even the negative kind, from advisers, mentors, sponsors, colleagues. “Data is your friend,” said Harris. “You cannot fix it if you don’t know it’s broken. Always create a safe space where somebody can give you the real-deal data.”

If you disagree with the assessment, “do not debate, because you will shut them down,” she said. “Then they will never give you that kind of feedback again and you want the spigots open at all times.”

Take stock in your career. When you work hard—delivering what’s asked of you and a little extra—you generate what Harris calls performance currency. It will get you noticed, raise your visibility and perhaps even attract a sponsor. But it’s most valuable early in your career.

“The longer you’re in an organization, that performance currency starts experiencing diminishing marginal returns,” said Harris. “Now, you’ve established a new standard of excellence and everyone expects you’ll deliver, so there’s no longer a premium associated with your deliverables.”

You’ve earned it; now invest in the people around you. Relationship currency, she said, never experiences diminishing returns.

People often think they’re going to let their work speak for them, “but at the end of the day, the work does not speak,” said Harris. “Your performance creates an opportunity, but the relationships enable the mobility.” **R**



Dr. Alfred Johnson, NIH deputy director for management, moderated the lecture.



Each Covid-19 education session runs about 30 minutes and is taught live by a trained instructor. Student worksheets and other class materials are provided in advance of the session.

Virtual Covid Learning Reaches U.S., International Students

BY CAROL KELLY

Through a new virtual learning program, Johns Hopkins University students and staff are sharing information about the novel coronavirus with schoolkids.

Dr. Panagis Galiatsatos, a pulmonary and critical care physician at Johns Hopkins Medicine, started the program to teach K-12 students about the science of Covid-19, the disease caused by the coronavirus, and how to protect themselves and others. The



Dr. Panagis Galiatsatos works with Medicine for the Greater Good, a hospital initiative that promotes good health practices and wellness in disadvantaged communities.

PHOTO: JOHNS HOPKINS MEDICINE

project grew university-wide with input from the schools of education and public health.

“This innovative teaching series is an outgrowth of the community engagement that Panagis directs as part of the NIEHS-supported Centers of Excellence on Environmental Health Disparities Research,” said Liam O’Fallon, a health specialist at the institute. “Given the research that their center conducts related

air pollution. He took on the challenge of developing a clear way to explain Covid-19 to young people.

“The students want to know more about the disease and they want to help others,” said Galiatsatos. “We want to help students, who may be feeling vulnerable and frightened, find hope and a sense of control.”

The curriculum covers many facets of covid, such as its biology, mathematical models of a pandemic, physics behind how a face mask works and the chemistry of handwashing and using sanitizer. There are 12 different lectures. With humor and attention-getting detail, youth are also told how they can make a difference through physical distancing, mask-wearing and handwashing.

“I’m a lung doctor who has been treating Covid-19 patients, and I think calling health care workers the front line is a misnomer,” said Galiatsatos. “I tell the students, who want to help protect others from the virus, that they are the front line of defense. Physicians like me are actually the last line of defense.”

Volunteer instructors range from undergraduate students to resident physicians at JHU. So far this year, about 90 people are trained to teach the curriculum.

After signing up for the program, schools schedule a lecture through a special portal. Then a match is made with an instructor who is available.



“I tell the students, who want to help protect others from the virus, that they are the front line of defense.”

-DR. PANAGIS GALIATSATOS



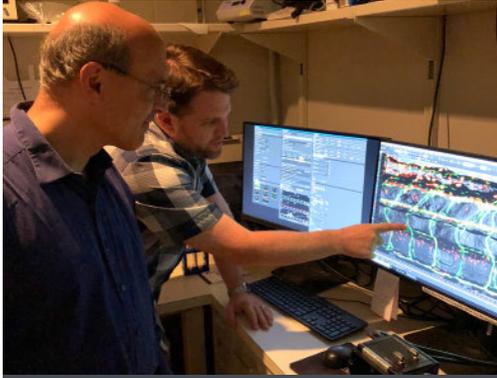
to respiratory disease and the environment and their strong community engagement efforts, they were able to respond quickly to the pandemic.”

Under the auspices of Johns Hopkins HEAT (Health Education and Training) Corps and with the aid of trained, volunteer instructors, the covid teaching series is expanding across the U.S. and internationally.

Baltimore teachers, struggling with the coronavirus topic, reached out to Galiatsatos because he had previously taught their students about lung health and

The covid teaching series has been requested in 24 states, from Hawaii to New York, and in 5 countries including Cyprus, Guatemala, Ghana, Panama and Tanzania.

Feedback received by the HEAT Corps indicates that although the pandemic disrupts education in the U.S. and other countries, a program like this one is unifying. One teacher said her fifth-grade students felt much better after listening to the instructor and being given the opportunity to ask questions. She added that offering the teaching series is a true demonstration of caring for a community. **R**



Daniel Castranova points out an image as Dr. Brant Weinstein looks on. At right, the winning image: Dorsal view of bones, scales and lymphatic vessels in a juvenile zebrafish

IMAGE: DANIEL CASTRANOVA/NICHD

NICHD Researchers Win Top Prize in Nikon Photo Competition

Daniel Castranova, an aquatic research specialist in NICHD's section on vertebrate organogenesis, recently took first place in the 46th annual Nikon Small World Photomicrography Competition for his image of a juvenile zebrafish. Also named on the prize are lab chief Dr. Brant Weinstein and postbaccalaureate fellow Bakary Samasa.

The photo merges 350 individual images to reveal the top, dorsal view of a zebrafish

with a fluorescently "tagged" skeleton, scales and lymphatic system.

"When I finally processed the picture, I knew immediately that it was worth submitting to the competition," said Castranova. "But I was hoping we would get an 'honorable mention.' I never expected that we would actually win."

The NICHD lab is well-known for its live fluorescent microscopy methods, which they use to study how blood and lymphatic vessels develop. Their discoveries in zebrafish provide foundational research for clinical studies of treatments for diseases and disorders that occur in the human brain,

including Alzheimer's and cancer.

Castranova joined the lab in 2003 to help maintain zebrafish lines. He eventually learned how to use confocal microscopy equipment when he was tasked with characterizing a zebrafish mutant, and he found the work fascinating. Now, Castranova is the lab's confocal imaging expert and helps train new members.

"I'm mainly self-taught. I learned a lot from asking the service and salespeople questions about the equipment. And I took a weeklong crash course in imaging. But most of what I know came from reading and doing experiments over time," he said. **R**

NIHFCU Receives Good Neighbor Green Champion Award

The National Institutes of Health Federal Credit Union (NIHFCU), which marked 80 years of continued service this year, received the 2019 NIH Good Neighbor Green Champion Award for its involvement in community planning and sustainability initiatives in support of NIH's energy, water, pollution and waste reduction targets.

The credit union's 2019 NIH shred events, which safely shredded and prepared 3.66 tons of paper for recycling, was recognized.

"Our support of the NIH community is in our actions," said Cassandra Hairston, NIHFCU vice president of community engagement. "The shred event provided an opportunity for the NIHFCU and NIH-Office of Research Services staff to work as a team, which further strengthens our long-term partnership in promoting initiatives of the NIH."

The HHS Green Champions Awards were established in response to an Executive Order issued by then-President Obama in October 2009, challenging federal agencies to dramatically



2019 NIH/NIHFCU shred event

reduce greenhouse gas emissions, energy use, water consumption and pollution.

"My division was looking for new and creative ways to service the NIH community," said Susan Cook, director, Division of Amenities and Transportation

Services, Office of Research Services. "We came up with the NIH community shred event and asked our NIHFCU partners for support. We were pleased to see the event was successful and to receive the HHS Green Champion Award. A big thank you to NIHFCU!" **R**

Study Aims to Identify Promising Covid-19 Treatments for Larger Clinical Trials

NIAID recently launched a study designed to determine whether certain approved therapies or investigational drugs in late-stage clinical development show promise against Covid-19 and merit advancement into larger clinical trials. The ACTIV-5 Big Effect Trial, which will enroll adult volunteers hospitalized with Covid-19 at as many as 40 U.S. sites, is being conducted in collaboration with the NIH's public-private partnership Accelerating Covid-19 Therapeutic Innovations and Vaccines (ACTIV) program.

"The ACTIV-5/BET study aims to streamline the pathway to finding urgently needed Covid-19 treatments by repurposing either licensed or late-stage-development medicines and testing them in a way that identifies the most promising agents for larger clinical studies in the most expedient way possible," said NIH director Dr. Francis Collins.

The phase 2 adaptive, randomized, double-blind, placebo-controlled trial will compare different investigational therapies to a common control arm to determine which experimental treatments have relatively large effects.

Approximately 100 hospitalized volunteers will be assigned to each study arm with each of the study sites testing no more than 3 investigational treatments at once.



A study in mice suggests that parents have an innate capacity to respond to an infant's cries for help.

Mouse Study Suggests Parental Response to Infant Distress Is Innate but Adapts to Change

An NIH study in mice suggests that parents have an innate capacity to respond to an infant's cries for help; this capacity may serve as a foundation from which a parent learns to adjust to an infant's changing needs. The study, conducted by Dr. Robert C. Froemke of New York University School of Medicine and colleagues, was funded in part by NICHD, NINDS and NIDCD.

It appears in *Nature*.

When housed with mice who have given birth, unmated female mice will assist with the care of the newborn pups. Researchers evaluated the ability of such babysitter mice to respond to a variety of recorded newborn distress cries. These included typical distress cries as well as a range of cries that had been digitally altered—sped up or slowed down to include more or fewer syllables than typical distress vocalizations.

Experienced babysitters responded to typical distress cries 80 percent of the time, compared to the 33 percent initial response rate of the novice babysitters. Both experienced and novice babysitters at

first responded at only low rates to the altered cries, but both learned to recognize these cries with time.

Eventually, even the novices responded to some types of altered calls as much as 75 percent of the time. Similarly, auditory centers in the babysitters' brains activated when the animals heard the calls, at levels corresponding to their initial responses, and increased as they became more responsive to the cries. The researchers also found that administering oxytocin improved the rate at which the mice responded to the cries, while blocking natural oxytocin in the brain reduced their response rate. Oxytocin has been implicated in maternal bonding and other behaviors.

These results provide evidence that new parents may be hard-wired to respond to certain kinds of cries from their infants, but also have the capacity to expand their repertoire to include other kinds of vocalizations as well.

Adolescent Brain Differences Linked to Increased Waist Circumference

Differences in the microstructure of the nucleus accumbens (NAcc), a region in the brain that plays an important role in processing food and other reward stimuli, predict increases in indicators of obesity in children, according to a study funded by NIDA and nine other institutes. The paper, published in the journal *Proceedings of the National Academy of Sciences*, is based on data from the Adolescent Brain Cognitive Development (ABCD) Study. The ABCD Study will follow nearly 12,000 children through early adulthood to assess factors that influence individual brain development and other health outcomes.

Findings from this study provide the first evidence of microstructural brain differences that are linked to waist circumference and body mass index (BMI) in children. These microstructural differences in cell density could be indicative of inflammatory processes triggered by a diet rich in high-fat foods.

"We know that childhood obesity is a key predictor of adult obesity and other poor health outcomes later in life," said Dr. Nora Volkow, director of NIDA. "These results extend previous animal studies to reveal what may prove to be a vicious cycle in which diet-related inflammation in brain striatal regions promotes further unhealthy eating behaviors and weight gain."

Evidence from past human imaging studies has demonstrated the relationship between the NAcc and unhealthy eating behavior in adults. In this study, the researchers leveraged new diffusion MRI imaging techniques to examine the cellular structure of areas that comprise the striatal reward pathway in the brain to investigate disproportionate weight gain in youth.



Differences in the microstructure of the nucleus accumbens, a region in the brain, predict increases in indicators of obesity in children, according to a study.

CAPTURED, CAPTIONED Noticed in Nature—A Pictorial

For many of us, a great portion of the past year has been spent physically distancing ourselves from all but our closest family and friends. Outdoors may have been one of few respites from the trappings of lockdown or quarantine.

Acknowledging this year's unusual circumstances, the *Record* asked its readers to share images of nature's beauty, and they haven't disappointed. Here are several we've received in the last few weeks.

What have you witnessed and captured via camera? Send your images to rm26q@nih.gov or cg9s@nih.gov and you could see them in future editions.

At right, Dr. Brynn Hollingsworth, a program officer in NIAID's Radiation and Nuclear Countermeasures Program, shared a photo taken at Seneca Creek, which proved to be a popular "swimming hole" in summer 2020.



Sabrina Springer of the National Library of Medicine's reference and web services section provided five images of nature, taken this summer: (Counter clockwise, from below) Black bear, Wintergreen, Va., in August 2020; Sunflower, McKee-Beshers Wildlife Management Area, Poolesville, Md., in July 2020; Tart cherries, Rock Hill Orchard, Mt. Airy, Md., in June 2020; and two photos of colorful moths, Mechanicsville, Va., in June 2020

