

OUT & ABOUT

This issue's events took place before the COVID-19 pandemic upended our lives. We wish good health to all until we can gather closely together again.

November 7, 2019 The Yale Child Study Center Associates Annual Meeting

convened in the Yale Child Study Center (YCSC) and was followed by a reception in Harkness Ballroom. The focus of the 2019 meeting was development across the lifespan. **1.** From left, **Cary A. Koplin** YC '66; **Linda C. Mayes**, MD, director of YCSC, Arnold Gesell Professor of Child Psychiatry and deputy dean for professionalism and leadership, Office of the Dean; and **Thomas C. Israel** YC '66, chairman and CEO, Ingleside Capital Co., Inc. **2.** From left, **Andrew Klingenstein** YC '80, president of Klingenstein Philanthropies; **Caroline Simmons**, senior specialist for policy innovation and impact at Elevate; **Megan Smith**, DrPh, MPH, associate professor of psychiatry and in the Child Study Center; and **Eliot Brenner**, PhD '95, executive director of Klingenstein Philanthropies.



ANTHONY DECARLO (2)

November 20, 2019 At an Innovations and Discoveries on the Horizon Dinner

held at the Boyer Center, faculty and researchers from the medical school, including Hugh S. Taylor, MD, Elena Ratner, MD, and Alessandro Santin, MD gave presentations on the theme of "Medical Advances for Women" to prospective donors. From left, **Caroline C. Herrick**; **Hugh S. Taylor**, MD, chair and Anita O'Keefe Young Professor of Obstetrics, Gynecology, and Reproductive Sciences; and **Theodore D. Sands** YC '67.



JUDY SIROTA ROSENTHAL



TONY SMERIGLIO

November 21, 2019 A **Celebrity Fundraiser Breakfast** at the Italian Club of Stamford featured Brian Cashman, general manager for the New York Yankees, as keynote speaker for Yale Eye Center's annual fundraiser, where \$93,000 was raised. From left, **Bobby Valentine**, legendary baseball player and manager; **Brian Cashman**, general manager of the New York Yankees; **Lucian V. Del Priore**, MD, PhD, chair and Robert R. Young Professor of Ophthalmology and Visual Science; and **Gene Rubino**, chair, Yale Eye Center Advisory Board.



JULIE PARR

January 12, 2020 At a Yale Reception held at the **38th Annual JP Morgan Healthcare Conference** in San Francisco, **Roy S. Herbst**, MD, PhD, Ensign Professor of Medicine (Medical Oncology) and chief of medical oncology at Yale Cancer Center, and **Stephanie Double**, director of shared interest groups with the Yale Alumni Association, greet attendees at the start of the event.



JULIE PARR

February 19, 2020 More than 40 medical school alumni and friends gathered for a **Yale Medicine Discovers Symposium** in Palm Beach, Fla., to hear presentations by **Matthew Ellman**, MD, professor of medicine and director of Yale Internal Medicine Associates; **David A. Hafler**, MD, chair and William S. and Lois Stiles Edgerly Professor of Neurology; **Roy S. Herbst**, MD, PhD, Ensign Professor of Medicine (Medical Oncology); **David J. Leffell**, MD, David P. Smith Professor of Dermatology; **Elena Ratner**, MD, associate professor of obstetrics, gynecology, and reproductive sciences; and **Peter G. Schulam**, MD, PhD, then chair of the Department of Urology.

// **Brain tumor** (page 1) driven Beris throughout her life: her work and her commitment to fitness. Every day she works out in her home gym, riding her exercise bicycle. But her career as a pediatrician abruptly ended in August 2018, when she was diagnosed with glioblastoma, an aggressive and almost universally fatal tumor.

"At work that morning, a nurse asked me a question and I answered in gibberish," she says. "I felt my head shake. I thought I was having a stroke, but it was a seizure."

Beris was transported to a nearby hospital, where scans showed a brain tumor perilously near the motor strip. Lacking the expertise to remove it, the medical team offered the option of a biopsy. "Call me a snob—but I didn't want a general neurosurgeon," she says. "I wanted the most specialized neurosurgeon with the best technical skills."

She was given the name of Jennifer Moliterno, MD, associate professor of neurosurgery at Yale School of Medicine and chief of neurosurgical oncology, who specializes in surgeries

for complex tumors located in highly functioning brain (speech and motor areas). "The moment I met Jen I knew she was perfect for me," says Beris. "I loved the fact that she only does brain tumor surgery. She is very smart and also trained at Yale. We were both chief residents, 20 years apart."

Moliterno presented a treatment plan that called for total resection, or complete removal, of the tumor. Studies show a significant improvement in survival in glioblastoma patients who have total resection, as opposed to just a biopsy or even subtotal removal. "Given the location, I planned for an awake craniotomy, so we could test her strength with her awake while I removed the tumor," says Moliterno. "We have excellent results with this type of surgery in our hands, using a well-designed protocol that includes a highly specialized team of neurophysiologists and neuroanesthesiologists, as well as intraoperative imaging. We can be as aggressive surgically as is safely possible, which is important in this disease."

While the notion of awake brain surgery strikes fear in the hearts of many, Beris was all in when she learned that it offered the best chance of removing the tumor while preserving motor function. The procedure was successful, with all of the tumor removed and Beris maintaining her strength. She experienced no pain or anxiety and she made a quick recovery. She went home two days after surgery and just one month later, she completed a 10K run, a fundraiser for the Connecticut Brain Tumor Association.

Few patients with glioblastoma survive for two years beyond surgery and Beris is happy to be one of them. Her health intact, she is focused on philanthropy. "Thinking about all I've been given, I wanted to support this program," she explains. "Other brain tumor patients should have access to the same excellent care I had."

"I am so happy with how well Susie has done and beyond grateful for her incredibly generous gift," says Moliterno. "We'll use these funds

to support a series of educational programs for patients and the medical community, informing them about the exceptional care Yale has to offer." One such event is the Susan Beris, MD, Brain Tumor Symposium, tentatively scheduled for spring 2021 if COVID-19 restrictions permit, with smaller continuing medical education seminars in the interim.

The Department of Pediatrics plans to use its gift to support residency training. "It will enable us to provide enhanced educational experiences designed to enhance critical thinking skills for our residents," says Clifford W. Bogue, MD, chair and Waldemar Von Zedtwitz Professor of Pediatrics. "The fund may also support our resident education tracks where residents receive focused educational experiences in areas such as advocacy, quality improvement, medical education, child health research, and global health." Bogue adds, "Susie Beris is an incredibly positive force for good, and Yale Pediatrics is very proud to call her one of our own."

Senior leadership appointments made at School of Medicine in 2020



Jessica Illuzzi



Anthony Koleske



Samuel Ball



Jonathan Grauer



Rochelle Smith



Sarwat Chaudhry



Erica Herzog



Marcella Nunez-Smith

Jessica Illuzzi, MD, MS '06, has been appointed deputy dean for education at Yale School of Medicine, effective January 1, 2021. A graduate of Harvard Medical School, Illuzzi has been at Yale since starting her residency in 1998. She is professor and chief of the obstetric specialties and midwifery division of the Department of Obstetrics, Gynecology & Reproductive Sciences and has served as medical director of the Vidone Birthing Center at Yale New Haven Hospital's Saint Raphael Campus since 2014. She served as clerkship director in obstetrics and gynecology until 2013 and thereafter as director of electives and sub-internships for the School of Medicine.

Anthony J. Koleske, PhD, assumed the role of deputy dean for scientific affairs (basic science departments) in April. Koleske is Ensign Professor of Molecular Biophysics and Biochemistry and professor of neuroscience. A graduate of the University of Wisconsin and Massachusetts Institute of Technology, Koleske is internationally recognized for his work defining the Abl family kinases as regulators of the cytoskeleton and elucidating mechanisms that control neuronal development and connectivity. Koleske succeeded Michael Crair, PhD, William Ziegler III Professor of Neuroscience and professor of ophthalmology and visual science, who has stepped into the role of Yale University's vice provost for research.

Samuel Ball, PhD, professor of psychiatry, and **Jonathan N. Grauer, MD**, professor and vice chair of orthopaedics and rehabilitation, became associate deans for faculty affairs, representing non-surgical and surgical departments respectively, effective at the start of 2020. Ball and Grauer oversee faculty development and mentoring initiatives across the school, using best practices for faculty development along differing career paths and working with departments to develop and streamline their mentoring programs. They serve as liaisons between the Office for Faculty Affairs, the Teaching and Learning Center, Yale Medicine, and the Yale Center for Clinical Investigation, and as resources for faculty, departments, and deputy deans across the school.

Rochelle D. Smith, MS, assumed the role of associate dean of diversity and inclusion and associate chief diversity officer. She came to Yale from Washington University in St. Louis, where she had been assistant provost for diversity initiatives. Smith founded the Washington University Diversity Pipeline Consortium for STEM, and her experience also included co-designing two faculty-of-color retention programs at Washington University that resulted in a record number of these faculty receiving tenure. In addition, she led the MD/PhD diversity effort and founded three student affinity groups at the university.

Sarwat Chaudhry, MD, associate professor of medicine (general medicine), and **Erica Herzog, MD, PhD**, professor of medicine (pulmonary), now lead the Office of Student Research (OSR) as associate deans. Both are physician investigators with deep ties to the New Haven community, the Graduate School of Arts and Sciences, and professional schools on the main campus. They succeeded John N. Forrest Jr, MD, now professor emeritus of medicine, who had led OSR since it was established in 1986.

Marcella Nunez-Smith, MD, MHS, was appointed the inaugural associate dean for health equity research at Yale School of Medicine in August. Nunez-Smith is associate professor of medicine (general medicine) and of epidemiology (chronic diseases) and associate professor at the School of Management. She is founding director of the Equity Research and Innovation Center (ERIC), deputy director for health equity research and workforce development at the Yale Center for Clinical Investigation (YCCI), and director of the Pozen-Commonwealth Fund Fellowship in Health Equity Leadership. She also has taken a position in the new Biden Administration, leading the White House effort to improve health equity.

// **Pandemic** (page 6) a roughly 90% reduction in respirator burn on a per patient basis compared to baseline. Based on the successful efforts of YNHHS Supply Chain, Kenney was asked during the crisis to provide information and advice to Vizient membership, the U.S. Defense Logistics Agency, the World Bank, and FEMA.

EDUCATION FROM HOME

On March 11, the university asked students not to return to campus after spring break, announcing that classes would resume online. Within a week, faculty and the Office of Education had created remote-learning experiences for medical and physician associate students—a “heroic” effort requiring intensive faculty training in the online tools, said Michael Schwartz, PhD, associate professor of neuroscience; director of medical studies in neuroscience; and associate dean for curriculum in the School of Medicine's Office of Education. Fortunately, many lectures were already available by video or podcast.

More disappointing and disruptive news came on March 16. Postponed procedures and the need to conserve PPE and limit the number of people at patients' bedsides led Dean Brown and Richard Belitsky, MD, the Harold W. Jockers Associate Professor of Medical Education, associate professor of psychiatry, and deputy dean for education, to cancel clinical clerkships and electives, followed by nearly all subinternships on March 28. “Our ability to provide you with meaningful educational experiences during your clerkships has been eroded,” Brown wrote the students in an open letter.

“You can imagine the angst that the students are going through that need these [clerkships and subinternships] for graduate residency matching,” Schwartz said. Though the problem is nationwide, which led the Association of American Medical Colleges to discourage away rotations and recommend virtual interviews, that was small consolation, he said: “While the environment has changed for almost everybody, competing in it doesn't make the student feel good.”

Under Schwartz's leadership, faculty, students, and the Medical Education staff quickly created six new electives, particularly aimed at students whose rotations and subinternships were on hold. In one, students practiced management of acute disease processes through virtual case scenario simulation; another covered research methods, focusing on critically appraising literature about COVID-19, which often has not been peer reviewed. Two explored the pandemic through interdisciplinary lenses and two allowed students to rejoin clinical teams through telehealth.

While sheltering at home, students found additional ways beyond electives to help with the pandemic effort. Some helped in COVID-related clinical studies. Others assisted clinical teams by performing literature searches or calling patients for follow-up. In addition, many took it upon themselves to be as useful as possible to members of the New Haven community in need.

Second Look Weekend, Match Day celebrations, Medical Education Day, and Commencement were successfully moved online.

REOPENING

On April 21, COVID-19 admissions peaked, with a census of 791 inpatients across the health system. On April 29, at last, more patients were being discharged than admitted. It was time to discuss reopening laboratories and childcare, resuming clinical trials and elective procedures, and bringing students back to the wards. Some clinical electives and subinternships resumed in late May, and clerkship clinical rotations resumed on July 6. Preclinical students made up for lost time with accelerated courses.

Some COVID-19-related changes are likely to become the new normal, such as telehealth.

“I don't think the patients or the doctors want to go back” to mostly in-person visits, said outgoing urology chair Peter Schulam, MD, PhD, who spent much of the pandemic working on COVID-19 testing protocols in his role as chief innovation and transformation officer at YNHHS (Schulam has since left Yale for a senior position at Johnson & Johnson). “This is the silver lining,” he said. “This may be the one good thing. The rapid adoption of telemedicine may improve the efficiency of our health care delivery.”

In the meantime, weary frontline providers were thinking about the next wave. “Phase two, scaling down to some unknown COVID plateau, on top of our usual hospital volume, is the current challenge. Preparing for the likelihood of recurrent surges in the future is the next challenge,” Tanoue said. “There's this huge uncertainty. Where will the bottom [of the pandemic curve] be? Where will

it settle out? Will there be recurrent surges? If so, how big will they be? We can try to plan ahead, but it is challenging with so much unknown.”

Desir said teams needed to be ready to “flex up” for that reason. He was part of discussions about how many people needed to be on infectious-disease or intensive-care teams. “We don't quite know yet how big [these teams] should be, but I think we should be ready to serve as the referral center for Connecticut if we have another peak,” Desir said.

Meeting the COVID-19 challenge has brought out remarkable energy in doctors and nurses, Tanoue said. “It's just amazing, how much people are willing to give, how committed they are to the mission.”

Zampano, who spent 16 years caring only for gynecologic oncology patients, staffed an end-of-life care unit for the first time during the pandemic, as well as a COVID-19 rapid evaluation clinic. The pandemic was awful, she said. “I've had my share of tears. I hope I never see another pandemic in my lifetime.”

But, she added, her glass is half full. “I've worked with some unbelievable people. The camaraderie that has come out of this and the ability to be flexible have been amazing!” Zampano said. “I wouldn't consider myself a flexible person. I'm a nest-builder. And I have flown out of my nest beyond anything I thought I would ever do.”

“I am pleased that we were able to do what we did—it was really extraordinary,” Desir said. “The entire system came together really quickly to make major, major changes. The idea of one team really came together.”

YSM faculty elected to National Academy of Medicine and AAAS

Experts in psychiatry, cell biology, environmental health, and dyslexia

Daniel A. Colón-Ramos, PhD, and Michelle L. Bell, PhD, have been elected to the National Academy of Medicine (NAM), the academy announced in October.



Daniel Colón-Ramos

Colón-Ramos is Dorys McConnell Duberg Professor of Neuroscience and Cell Biology at Yale School of Medicine. He joined the Yale faculty in 2008, and has worked with the nematode *Caenorhabditis elegans* to uncover fundamental principles of the cell biology of the synapse and how it underpins animal behaviors. A particular interest has been how neurons self-organize to form brains, and how they convert sensory information into behavioral responses. His discoveries have informed fundamental and conserved principles of neuropil formation, synaptic cell biology, and circuit function that underpin behaviors.

Colón-Ramos also has been very active in helping his native Puerto Rico obtain both scientific and material

support, particularly after Hurricane Maria in 2017 and during the current COVID-19 pandemic. A nonprofit he co-founded in 2006, Ciencia Puerto Rico, and its affiliated Yale Ciencia Academy, also provide professional development and leadership training to PhD candidates from minoritized backgrounds, particularly from



Michelle Bell

Puerto Rico. Bell is the Mary E. Pinchot Professor of Environmental Health at Yale School of the Environment with a secondary appointment as professor of environmental health at Yale School of Public Health. She joined the Yale faculty in 2004. Her research investigates how human health is affected by atmospheric systems, including air pollution and weather. Other research interests include the health impacts of climate change and environmental justice. The research is designed to be policy-relevant and contribute to well-informed decision making to better protect human health and benefit society.

These distinguished faculty members are among 100 new members who were selected for their

outstanding contributions to the field of medicine. They join 52 other faculty members from Yale who have been elected to the NAM, one of the highest honors in medicine.

The American Association for the Advancement of Science (AAAS) has named two Yale School of Medicine researchers as AAAS Fellows for their



John Krystal

distinguished efforts to advance science. John H. Krystal, MD, Robert L. McNeil, Jr. Professor of Translational Research, chair and professor of psychiatry, professor of neuroscience and of psychology, and co-director of the Yale Center for Clinical Investigation; and Sally Shaywitz, MD, Audrey G. Ratner Professor of Pediatrics (Neurology), are among 489 association members awarded the honor in 2020 by AAAS.

Krystal is being honored for his transformative contributions to human neuroscience, particularly research on glutamate signaling and the resultant development of ketamine as a novel rapid antidepressant. In the early 1990s, Krystal and fellow psychiatrists at Yale discovered that chronically depressed patients experienced almost

immediate relief from symptoms after taking the anesthetic ketamine. In 2019, the Food and Drug Administration approved a new antidepressant, esketamine, that is now available by prescription. Esketamine is a nasal spray derived from ketamine. “Yale has been and continues to be an incredible home for translational neuroscience,”



Sally Shaywitz

Krystal said. “There were very few other places in the world where we could have conducted our research.”

Shaywitz, co-director of the Yale Center for Dyslexia & Creativity, is being honored for distinguished contributions to the public’s understanding of the biological basis and natural history of dyslexia and communicating these discoveries to the public. In addition to her more than 350 scientific publications with Bennett Shaywitz, MD, Charles and Helen Schwab Professor of Pediatrics (Neurology), she is author of the best-selling book, *Overcoming Dyslexia*, which has transformed people’s understanding of dyslexia and provided practical approaches and specific interventions for parents and educators.

// **Donors** (page 5) A. Hafler, MD, chair and William S. and Lois Styles Edgerly Professor of Neurology, and professor of immunobiology, worked to develop immunotherapies to treat COVID-19 with funds from the Ludwig Family Foundation.

The G. Harold & Leila Y. Mathers Foundation generously awarded funds for COVID-19 research to Bucala, as well as Ring’s investigation of methods to take advantage of adaptive immunity to treat and prevent COVID-19. The foundation granted these awards in direct response to the need for research posed by the pandemic and built upon the foundation’s long-standing history of supporting biomedical research at Yale.

Yale researchers also received Fast Grants, which accelerate typically lengthy research grant mechanisms. Expedited within 14 days, Fast Grants were funded by Emergent Ventures, a program at George Mason University. Yale researchers who were funded include Naftali Kaminski, MD, Boehringer Ingelheim Pharmaceuticals, Inc., Endowed Professor of Medicine (Pulmonary); Akiko Iwasaki, PhD, Waldemar Von Zedtwitz Professor of Immunobiology and professor of molecular, cellular, and developmental biology; Craig B. Wilen, MD, PhD, assistant professor of laboratory medicine and of immunobiology; Nathan D. Grubaugh, PhD, assistant professor of epidemiology (microbial diseases); Ellen F. Foxman, MD, PhD, assistant professor of laboratory medicine and of immunobiology; and Stephanie Eisenbarth, MD, PhD, associate professor of laboratory medicine, of immunobiology, and of immunology.

Personal protective equipment, or PPE, was one of the first and most

immediate necessities in addressing the pandemic, and the Yale community responded to this urgent need in the form of PPE donations. Lisa L. Lattanza, MD, professor and chair of orthopaedics and rehabilitation, worked tirelessly to lead the effort to collect donations of PPE to Yale. “We need to protect our frontline health care workers first and foremost,” she said. “If they get sick, there is no one to take care of the community.”

PPE donors showed creativity and perseverance in bringing vital supplies to frontline workers in New Haven.

Jiankan Guo, PhD, a research scientist in Yale School of Medicine’s Section of Nephrology, partnered with Zhenzhen Wu, Steve Xu, Shanshan Zeng, and Jason Zhao to lead a KN95/N95 drive with more than 170 local Chinese-American volunteers to solicit PPE donations in both Connecticut and China. “I realized it was the time to stand up and do something,” said Guo. “I grew up in China and have a lot of connections there, so I reached out to see how I can help.”

Hyung Chun, MD, associate professor of medicine and director of translational research of the Yale Pulmonary Vascular Disease Program, also acted immediately, and the response was similarly quick. After reaching out to colleagues, Chun was able to deliver a donation of about 6,000 gloves, along with disposable gowns and shoe covers, to Yale the following day.

The New Haven-based Yale-China Association assisted an effort by a coalition of nongovernmental organizations (NGOs) in China and the United States to send 23,000 N95 masks. The Yale Chinese Parents Club donated 108 hazmat suits. In addition, 2,000 surgical masks were donated by

employees and families at Boehringer Ingelheim, Danbury Chinese Alliance Church, and the Western Connecticut Chinese Association. Also in April, more than 21,000 KN95 face masks were donated by AMT Consulting in Shanghai, China.

Yale’s long-standing partnerships in China also proved crucial. Shanghai Jiaotong University (SJTU), one of Yale’s partner institutions, sent a donation of 5,000 N95 masks in April, a time of high demand for PPE.

Lattanza herself, who had just joined the Yale faculty in 2019 from the University of California, San Francisco, resourcefully obtained emergency PPE from her own contacts when Connecticut’s pandemic was at its height. “I worked there for 20 years and reached out to colleagues for help when their COVID burden was so small and ours very large.”

Students and faculty also worked together to found and contribute to grassroots efforts to aid the local community. Meals4Healers, spearheaded by Claudia-Santi F. Fernandes, EdD, LPC, an associate research scientist in General Internal Medicine, mobilized to provide a different kind of aid, as well as gratitude, to Yale frontline workers, while simultaneously supporting local restaurants. Working with New Haven restaurants Tavern on State and Roia, Meals4Healers delivered meals to hospital house staff who were home in isolation, as well as those who were displaced due to COVID-19.

Other school- and community-based groups made masks, raised funds for hospital maintenance and custodial workers, delivered snacks to physicians and nurses caring for COVID-19 patients, delivered essential medications to psychiatric patients

who could not reach a pharmacy, and raised essential funds for local households in urgent need.

Yet another aspect of hardship created by the pandemic has been its financial impact on Yale medical students and their families. The YSM class that matriculated in August 2019 was the most economically diverse in the school’s history. Fifteen of its 104 members were the first in their family to attend college. Twenty-nine come from groups underrepresented in medicine.

Within the student body there are exceptionally resilient young people who not only study medicine, but also work to support their extended families, children, or spouses who may have lost their jobs. For many, COVID-19 has exacerbated these challenges, as they try to focus on their medical educations.

The School of Medicine Student Assistance Fund covered urgent, unexpected needs for more than a dozen students, including costs of traveling home as well as such essentials as food and medication, taking the boards in a new location, unexpected babysitting costs, and broadband connections to be able to attend classes online. A special gift to the fund came at the height of the COVID-19 emergency from medical school alumni Stephen C. Knight, MD ’90, MBA ’90, and Elizabeth Q. Knight, MD ’94, PhD ’94, who already had been generously supporting student scholarships prior to the pandemic.

The need for members of the Yale community to harness their ingenuity, resourcefulness, and compassion will continue as long as the pandemic does, and Yale School of Medicine is grateful to all donors who have made it possible for the school to construct an effective and sustained response.