Alumni Giving

If you would like to donate to any of our charitable causes, such as our successful international outreach program in Tanzania, please click here.

We greatly appreciate your support!
Thank you for your interest in our Yale Radiology alumni magazine. We hope this will be the first of many publications that will help provide a regular and long-lasting connection amongst all our alums from the department.

In evolutionary terms, it is not the strongest or fastest that survive, but those with the greatest capacity to adapt. I believe that Yale Radiology has become the consummate expert in professional imaging adaptation. Originally part of the department of surgery, the radiology department forged ahead to become an independent entity, and is now one of the largest, most prolific and successful departments within Yale School of Medicine. This is due, in part, to the department’s phenomenal staff, trainees, and faculty, many of whom you will read about within the pages of this magazine.

Each and every facet of the department has shown itself to be capable of adapting, from our education team spearheading international outreach opportunities; our IT support staff moving from paper appointments and promotions processes to electronic alternatives; our radiologists, who continue to pursue an incremental subspecialist interpretation agenda across the enterprise, as well as our novel approaches to research in imaging fields. This degree of adaptability is admirable and secures our future success as a progressive, strong, and formidable academic radiology department.

Our traditional base, Yale New Haven Hospital, is now only one component of the ever-expanding Yale New Haven Health System. Yale New Haven Health comprises five hospitals (Greenwich, Bridgeport, YNHH, Lawrence + Memorial, and Westerly). Each hospital enjoys local nuances but all are moving towards a centrally led and locally delivered radiology practice ethos. With a unified PACS system, harmonized IT tools, and the overarching mission to provide the best imaging possible for our patients, the influence radiology has throughout the region is palpable. Radiology enhancements can make huge differences to each and every clinical service line. We are actively delivering these benefits as we grow and develop throughout Connecticut and beyond.

We look forward to learning more about our alums and are keen to hear of your individual successes (professional and personal), as well as career paths. The Yale connection runs deep. Many peers and colleagues are eager to connect with fondly remembered teachers, acquaintances, and friends. Please feel free to drop me a line at the email below so that we can collect news and events to share in future issues. If you would like to donate to any of our charitable causes, such as our successful international outreach program in Tanzania, [please follow this link](#).

If you are passing through New Haven and are curious to see how things have changed, please do not hesitate to let us know so that we can arrange a tour that will amaze and delight you. Every future success we make is built on the strong foundation of work built by our previous colleagues, and you will always be welcomed back at any time.

Yale radiologists, past, current and future, are a special group of individuals. You have each played an important role in the fabric of our department. Many thanks for being a part of something so special!

Rob Goodman, MB BChir, MBA
Professor of Radiology and Biomedical Imaging; Chair, Radiology and Biomedical Imaging; Radiologist-in-Chief, Yale New Haven Health

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Residency Director Honored

Residency Program Director Syed A. Jamal Bokhari, MBBS, received the second annual Rosemarie L. Fisher, MD, Graduate Medical Education (GME) Leadership Award. The award is for graduate medical education leaders from Yale New Haven Hospital and Yale School of Medicine in recognition of substantial contributions to advancing the training of residents. Walter E. Longo, MD, received the inaugural award for his efforts to further the Yale training mission.

ER Celebrates 20 Years

Twenty years ago, Yale School of Medicine became the first medical school in the U.S. to offer patients 24/7 emergency radiology coverage with a board-certified radiologist present in-house. Syed A. Jamal Bokhari, MBBS, who began his residency at Yale in 1993, joined the department with the intention of providing that coverage.

“He became one of radiology’s best chief residents and then an outstanding neuroradiology fellow before he decided that he would commit his time to helping us build a 24/7 radiology section,” said Howard Forman, MD, a faculty member in the section who, as vice chair, was principally involved in hiring Bokhari.

Since 1999, Bokhari has worked about 182 shifts every year, meticulously mapping his schedule to be on site for as many as three weeks without a break. Now, Bokhari recognizes that the section he built and helped sustain no longer needs him to be working quite as many overnight hours.

“When we hired Dr. Bokhari, we believed we would be fortunate to have him do this for a few years. But he never wavered in his commitment to our department and the emerging section,” Forman said.

New Center to Study Opioid Use Disorder

Researchers from Yale School of Medicine (YSM) and Penn Medicine, which comprises the Perelman School of Medicine at the University of Pennsylvania, have created a new center that focuses on neuroimaging to better understand opioid use disorders.

The Penn PET Addiction Center of Excellence is the first facility of its kind to use positron emission tomography (PET) imaging to investigate the neurobiological changes associated with opioid use disorder. The center is funded by a 5-year $8.9 million grant from the National Institute on Drug Abuse.

“This partnership takes advantage of the complementary expertise at both universities to develop new imaging technologies, including new PET radiopharmaceuticals, and to address important questions in an area of high clinical need,” said Richard Carson, PhD, professor of radiology & biomedical imaging and of biomedical engineering, and director of the Yale PET Center.

Co-investigators are Henry Huang, PhD, professor of radiology & biomedical imaging and co-director of the Yale PET Center, Robert Malison, MD, professor of psychiatry and director of the Clinical Neuroscience Research Unit at YSM, and their colleagues at UPenn.
Three ‘Firsts’ For IR

Yale’s interventional radiologists were the first in Connecticut, and among the first in the Northeast, to perform a pulmonary thrombectomy using a new mechanical device. Through a tiny incision in the skin, Jeffrey Pollak, MD, guided a catheter into a patient’s pulmonary artery. As Pollak retracted the catheter, he used a suction device to pull the clots out of the artery and then out of the patient through the incision.

Because the procedure does not require the use of thrombolytic agents, it “expands our ability to treat older patients, or patients with other medical issues who are at a higher risk for bleeding,” Pollak said.

Hamid Mojibian, MD, who performed the procedure with Pollak, became the first physician, along with Yale cardiologists, to use a new personalized cardiac test in Connecticut that can predict the need for cardiac catheterizations. Patients at Yale New Haven Hospital were the first in the region to benefit from this new technology for analyzing blood flow to the heart.

In June, interventional radiologists Juan Carlos Perez Lozada, MD, and Angelo G. Marino, DO, became the first physicians in Connecticut to create an AV fistula through a small skin puncture. This minimally invasive procedure is designed to offer patients better medical results and quality of life while they undergo dialysis.

Yale Radiologists Advance Prostate Cancer Imaging

Prostate cancer is the second leading cause of cancer death among men in the U.S., yet clinicians have had to rely on statistical models for treatment.

Recently, two metabolic PET agents, 18F-Fluciclovine (Axumin) and 11C-Choline, were FDA approved and incorporated in the National Comprehensive Cancer Network guidelines for early detection of prostate cancer post-treatment relapse. Axumin is routinely used at Yale.

But new agents targeting the prostate-specific membrane antigen (PSMA) might surpass Axumin in early detection. The department recently participated in two international trials with PSMA agents in patients with biochemical relapse of prostate cancer. Lawrence Saperstein, MD, chief of nuclear medicine, was Yale’s principal investigator for both trials.

CONDOR is a phase 3, multi-center open-label study to assess the diagnostic performance and clinical impact of 18F-DCFPyL PET/CT imaging results in men with suspected recurrence of prostate cancer. PROfind is a phase 1/2 open-label, multi-center safety and tolerability study of a single dose of 68Ga-PSMA-R2 in patients with biochemical relapse and metastatic prostate cancer.

The CONDOR trial screened over 80 patients and enrolled 27 (planned 20). The PROFind trial enrolled six patients (planned four). Although results are pending, sub-centimeter tumors were detected with 18F-DCFPyL in structurally normal nodes and bones on CT.

“We can now envision how the use of these new molecular agents can be expanded to radiation treatment,” Saperstein said.
When Associate Professor Frank Minja traveled to Tanzania, East Africa in 2014 to help set up a modern radiology department on the Muhimbili National Hospital (MNH) campus, he knew the task would be complex and demanding. That same year, Minja established the Yale Radiology Global Outreach Program to help address the shortage of well-trained diagnostic and interventional radiologists in Tanzania.

Minja, who was born and raised in the former Tanzanian capital of Dar es Salaam where the campus is located, traveled to the United States for college and medical school at Harvard University. He came to Yale School of Medicine (YSM) in 2004 for a diagnostic radiology residency followed by a neuroradiology fellowship. He joined the faculty in 2009.

But even before completing his fellowship, Minja had begun collaborating with radiology colleagues in Tanzania who were establishing the first diagnostic radiology residency training program on the MNH campus.

Melissa Durand, an assistant professor and breast imager at YSM, became interested in a medical service mission a few years ago after she attended a grand rounds lecture. During the talk, Durand heard about volunteer opportunities with RAD-AID.org, the nonprofit group that works to improve medical imaging and radiology in developing and emerging countries.

Durand, who joined the department as an attending physician in 2012 after a breast and body fellowship at Yale, signed on as a volunteer for a 2019 mission to Ghana, West Africa.

For six days in early June, Durand volunteered at Ghana’s second-largest teaching hospital, the 1,200-bed Komfo Anokye Teaching Hospital (KATH) in Kumasi, the regional capital of the Ashanti Region that serves a population of about 5 million people. Now RAD-AID’s breast imaging lead for Ghana, Durand plans to return to KATH in 2020.

Cicero Silva, chief of pediatric imaging at YSM, led an outreach team from 2015 to 2019 on behalf of the World Federation of Pediatric Imaging (WFPI). In those parts of the world that are short of qualified medical staff, radiologists, and especially pediatric radiologists, are rare. Most countries in Africa have fewer than 30 radiologists, and 14 have none, according to a 2016 article in *Pediatric Radiology*. To address this shortage, the WFPI established the Tanzania Interventional Radiology Initiative program.

In addition to supporting the diagnostic radiology residency training program at Muhimbili University of Health and Allied Sciences (MUHAS), Minja led the successful effort to establish a Picture Archiving and Imaging System (PACS) at the Muhimbili Orthopaedic Institute (MOI), also on the Dar es Salaam campus. In 2018, with assistance from Fabian Laage Gaupp, who is now a fourth-year resident, Minja established the Tanzania Interventional Radiology Initiative program.

In a country with limited resources such as Tanzania, patients have little or no access to the benefits of interventional radiology because not a single radiologist in Tanzania had been formally trained to use it, said Minja. The Tanzania Interventional Radiology Initiative provides within-country training for the first generation of interventional radiologists in Tanzania, graduating the first class by 2021.

“If we are able to do that, we will produce locally trained IR physicians who understand the necessary workarounds in a resource-limited setting, as opposed to training them at Yale or elsewhere abroad where more resources are readily available,” Minja said.

Goodwill and funding are both essential for the continued recruitment and support of the best teams for the Tanzania Interventional Radiology Initiative, Minja said. “Many countries around the globe face an acute shortage of...
diagnostic and interventional radiologists, especially in Africa, and could benefit from efforts similar to the Yale Radiology Global Outreach Program,” he said. “The problem is not very complex, but the scale and urgency of the need is quite enormous,” Minja said. “That is also the opportunity.”

Improving Breast Cancer Outcomes
Breast cancer is the most common cause of female cancer deaths in Ghana, where the five-year survival rate is estimated to be 25%. In the United States, the survival rate is 90%. Many of the breast cancer patients treated at KATH are young women in their 30s and 40s.

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“The survival rate is low; people were presenting in late stage,” Durand said. “At Yale we have a weekly tumor board with surgeons, radiologists, and oncologists to talk about cases that are 1 centimeter in size. There, we saw tumors that were 10 centimeters, and in younger women.”

Often, a woman will not come to the hospital until she feels a lump, she said. Transportation and long travel distances are barriers to receiving care.

Still, the hospital is busy, with up to 50 patients visiting its Breast Care Centre each day. But the process can be time-consuming. If an examination shows the need for an ultrasound, the patient must return to the center for a follow-up appointment a week later. And if the ultrasound reveals a tumor that requires a biopsy, the patient must return for a third appointment.

Less than half of the patients who need an ultrasound or a biopsy return for these procedures, Durand said. Cost is one reason. While the national insurance program covers breast cancer treatment, the work-up to get a diagnosis of breast cancer is not. “As such, the cost of the tests can be prohibitive,” she said.

As RAD-AID’s breast imaging lead for Ghana, she plans to return to KATH in 2020 to, among other things, teach its radiologists and surgeons to perform ultrasound-guided biopsies, and to establish a system for biopsy record-keeping.

“What’s so attractive about the experience is that you feel you are changing something for the better,” Durand said.

Global Pediatric Radiology Service
Rather than setting up programs from scratch, WFPI adopts what it calls a “bolt on” approach. For example, in 2015, partnering with RAD-AID, the WFPI sent a pediatric radiologist from the U.K. to the Lao Friends Hospital for Children, in Laos, to educate pediatricians on the basics of X-ray interpretation, and radiology technologists on radiation safety. From 2014 to 2018, the hospital was responsible for 82% of WFPI’s teleradiology cases, said Silva, an associate professor who joined Yale Radiology in 2008.

During Silva’s tenure with the WFPI, the majority of cases that were reviewed were from Asia (Laos), and Africa (Mozambique and South Africa) as well as from India, Peru and Jamaica. In that period, WFPI volunteer pediatric radiologists read 668 cases; the median age of patients was 1 year, 4 months.

Silva also traveled to his native country of Brazil in 2018 to help conduct pediatric radiology training classes in Belém.

“A city with 1.5 million inhabitants, Belém has a few radiology residency programs but no dedicated pediatric radiology expertise,” Silva said. “Radiology residents and pediatricians from Belém’s major hospitals, as well as community radiologists from throughout the state, traveled as far as 600 kilometers to attend,” he said.

Silva also assisted in creating WFPI pediatric radiology three-month mini-fellowships in Africa, Asia and South America, in partnership with the Shiels Foundation.
Jamal Bokhari, MBBS, has been elected an ASER fellow. An ASER fellow has national and international achievements in emergency radiology with a history of service to the American Society of Emergency Radiology.

Yale radiologists Morton Burrell, Andy Haims, Gary Israel, Michele Johnson, Lee Katz, Liane Philpotts, Jeffrey Pollak, Leslie Scoutt, and Gordon Sze were among those named Connecticut magazine’s “Best Doctors 2019.”

Todd Constable, PhD, received the 2019 Distinguished Alumni Award from The University of Winnipeg. Since 2001, Constable has been director of MRI research and co-director of the Magnetic Resonance Research Center. His research focuses on developing and validating new approaches to functional magnetic resonance imaging (fMRI), and using those methods to improve the understanding of brain function.

For the first time in 20 years, a radiologist from Yale School of Medicine received the Leah Lowenstein Award. Howard Forman, MD, MBA, was honored with the award during the 2019 commencement. “Each year, the school of medicine takes pleasure in presenting this award to a member of the faculty who is the model of a medical educator whose humane teaching reaches and influences all students regardless of gender, race or socioeconomic background,” Dean Robert J. Alpern said.

D.S. Fahmmed Hyder, PhD, professor of radiology & biomedical imaging and of biomedical engineering, was inducted in March into the American Institute for Medical and Biological Engineering’s (AIMBE) College of Fellows.

Michele Johnson, MD, received the Valerie P. Jackson Education Fellowship. Johnson plans to use the fellowship to create a road map for mentoring the next generation of radiologists.

Dustin Scheinost, PhD, is among a group of Yale investigators who were awarded grants through the National Institutes of Health Helping to End Addiction Long-term Initiative (NIH HEAL). This effort provides $945 million in total funding to support research projects that tackle the opioid addiction and overdose crisis. Scheinost will focus on sleep dysfunction as a core feature of opioid use disorder and recovery.

Vice Chair for Education Leslie Scoutt, MD, received the Distinguished Educator and Mentor Award from the Society of Radiologists in Ultrasound.

Jeffrey Weinreb, MD, is a 2019 Gold Medal winner from the Society of Computed Body Tomography & Magnetic Resonance (SCBT-MR). In 2017, Weinreb received the ACR Gold Medal Award for distinguished service to the American College of Radiology, its highest honor. Weinreb is director of MRI Service at Yale New Haven Hospital.
Evan Morris learned a lesson from a student several years ago that continues to drive his thinking and research today. Morris, co-director of imaging at the Yale PET Center, teaches the Responsible Conduct of Research (RCR) class, which is a requirement for students who receive funding from the National Institutes of Health or the National Science Foundation.

A few years ago, Adele Ricciardi, an MD, PhD student specializing in gene editing in utero, spoke to Morris’ class about the ethical dilemmas of her work. As she began to untangle some ethical knots during her discussion with the other students, Morris began to wonder if there were similar issues of the impact of his own specialty, brain imaging, on patients and volunteers.

Morris will tell you “my bag is PET” (positron emission tomography). He uses PET imaging to study neuropsychiatric diseases.

“It’s a good thing when we identify biomarkers and predictors of disease,” Morris said. “When we go further than that, things could be ethically dicey.”

PET “is commonly used, clinically, to identify sites of altered metabolism (e.g., tumors). In research, it can be used to identify molecular targets for treatment,” he said. “In my work at Yale, in collaboration with Professor Suchitra Krishnan-Sarin of psychiatry, we have used PET imaging of an opioid receptor to predict which problem drinkers would reduce their drinking while on the medication, naltrexone,” he said.

“Driven by AI and ever-faster computers, the predictive ability of the scans will improve.”

What will happen when technological advances make a quantum leap in accuracy? And how soon might that happen?

In search of answers, Morris sought out Michelle Hampson, director of real-time functional magnetic resonance imaging (fMRI) in the department of radiology & biomedical imaging. This summer, Hampson was the senior author of a study that used real-time fMRI neurofeedback, a relatively new technique, to train adolescents with Tourette Syndrome to control their tics.

Morris and Hampson discussed the long-term consequences of predictive brain imaging. “Maybe it’s time for a broader conversation,” they agreed.

This summer, Morris worked through his questions, and how to best transmit his ideas to the wider, non-academic public, during a two-week sabbatical at The Hastings Center, an independent bioethics research institute in Garrison, New York.

“I presented my ideas to the resident scholars at the center and showed them the first draft of an opinion piece I wrote. I was criticized, disbelieved and rejected, albeit politely,” he said.

“A number of the resident scholars at Hastings took time to meet with me and discuss my ideas. They knew how to formulate an op-ed. ‘Don’t waste the reader’s time. Give them one main idea,’ they emphasized. It was tough, but I accepted their criticisms and suggestions, and used them.’

The result was the piece, “Why We Need Guidelines for Brain Scan Data,” which was published Sept. 17 in Wired.

“Brain scans, aided by artificial intelligence, reveal as much about us as our DNA,” Morris wrote. “Grappling with their ethical implications is vital to scientific integrity.”

Morris hopes to organize a study group at Yale or a track at a conference to further discuss the privacy concerns around AI-enhanced predictive brain scans and to propose guidelines. He also plans to challenge the students in his next RCR class, or at least to alert them to the weighty issues that brain imagers and other researchers will need to be ready to confront.

You can read Evan Morris’ opinion piece here.
Promoted

Congratulations to Regina Hooley, MD, who has been promoted to professor, and to Jonathan Kirsch, MD, Mahan Mathur, MD, and Frank Minja, MD, who have been promoted to associate professor.

Retired

Lee Katz, MD, retired in June after one last Grand Rounds, a look back at his 40 years with Yale radiology and orthopedics.

The department also recently bid farewell to Jim Abrahams, MD, who retired from the neuroradiology section after 33 years at Yale. His skills in teaching, head and neck imaging, and boating are legendary!

In 2018, John Aruny, MD, retired after 18 years of intricate interventional work. Aruny was planning to move to the Carolinas for some well-earned R&R.

Appointed

David C. Madoff, MD, was appointed professor of radiology & biomedical imaging and vice chair for clinical research in July 2019. His clinical and research expertise is in Interventional Oncology (IO) including various transarterial embolotherapy treatments, percutaneous ablative/biopsy techniques and other specialized IO therapies. He is world-renowned for his work on preoperative portal vein embolization, which is used to improve the safety of major hepatic resection. It is based on the liver’s ability to regenerate and has been used in patients with primary and metastatic hepatobiliary cancer to increase the size of the anticipated liver remnant before surgery. Without this procedure, many patients with potentially resectable disease would not be eligible for curative resection. Findings from his research in this area have led him to develop a predictable model for cirrhosis, which has in turn been used to assess transcatheter treatment with various cellular therapies. In addition to this research, Madoff plans to bring numerous clinical trials to Yale School of Medicine and to help in the development of strategies for the transarterial and intratumoral delivery of novel therapeutics for cancer treatment and immunotherapy.

Madoff earned a BA from Emory University and his MD from the University of Pittsburgh. He completed his internship in internal medicine and his residency in radiology at SUNY at Stony Brook. His fellowship training in vascular and interventional radiology was at The University of Texas MD Anderson Cancer Center, where he was a faculty member in the IR section for a decade before joining New York-Presbyterian Hospital/Weill Cornell Medical Center in 2011. At Weill Cornell, he served as division chief of IR from 2011 to 2015, and vice chair for academic affairs from 2015 to 2019.

And after 43 years, Anne Curtis, MD, also retired in 2018. Curtis, who was one of the first female attendings at Yale and the acting chair in 1988, joined the department in 1975.

Welcomed

Mariam Aboian, MD, assistant professor, neuroradiology; Rahmat Ali, MD, assistant professor, interventional radiology; Daniella Asch, MD, assistant professor, body; Sophie Chheang, MD, assistant professor, interventional radiology; Anthony Abou Karam, MD, assistant professor, neuroradiology; David C. Madoff, MD, professor and vice chair for clinical research; Fatima Memon, MD, assistant professor, emergency radiology; Simon Onderi, MD, assistant professor, emergency radiology; Amandeep Singh, MD, assistant professor, body; Jason Teitelbaum, MD, MBA, assistant professor, emergency radiology; Darryl Zuckerman, MD, assistant professor, interventional radiology; John Onofrey, PhD, assistant professor of radiology & biomedical imaging and of urology; Evelyn Lake, PhD, assistant professor, biomedical sciences; and Jennifer Dwyer, MD, PhD, assistant professor, biomedical sciences (joint appointment with Child Study Center)
PhD Candidate Wins First Inter-Ivy 3-Minute Thesis Competition

Mehraveh Salehi, a PhD candidate in the labs of Todd Constable, PhD, professor of radiology & biomedical imaging and of neurosurgery, and Amin Karbasi, PhD, assistant professor of electrical engineering and computer science, took first place in the first Ivy 3-Minute Thesis (3MT) competition at the United Nations in New York City in April.

“For my PhD thesis, for the first time, I challenged my field’s long-standing assumption that there is a single brain map that works for everyone across time,” Salehi said during her presentation. “I looked at brain images acquired by functional Magnetic Resonance Imaging or fMRI, and tried to understand what brain regions talk to each other and how this conversation changes as we engage in different tasks, such as playing a game or watching a movie.”

Yale’s 3MT competition is sponsored by the Office of Career Strategy and supported by the Graduate School Alumni Association and the McDougal Graduate Student Center. It is modeled on a competition founded by the University of Queensland.

Welcome First Year Residents

- Yaser Al-Jobory, Ross University School of Medicine
- Abedalrazaq Alkukhun, Alfaisal University College of Medicine
- Grace DeWitt, Drexel University College of Medicine
- Benjamin Jang, University of Kansas School of Medicine
- Tony Lin, Penn State College of Medicine
- Jacob Mandel, St. George's University School of Medicine
- Ali Mozayan, University of Central Florida College of Medicine
- Aditya Rao, George Washington University School of Medicine
- Clifford Shin, University of Utah School of Medicine
- Jannatun Sikder, New York Medical College
- Harry Subramanian, Yale School of Medicine
- Farnaz Najmi Varzaneh, Tehran University of Medical Sciences
- Gaurav Anand (Interventional Radiology), University of Missouri-Kansas City School of Medicine
- Edi Kapetanovic (Interventional Radiology), Yale School of Medicine
- Raj Patel (Interventional Radiology), USF Health Morsani College of Medicine

On the back cover (left to right): Senior Chief Residents: Long Tu, Yale School of Medicine, neuroradiology (fellowship); Reid Kraniski, Yale School of Medicine, neuroradiology (fellowship); Erin Taylor, Yale School of Medicine, body imaging (fellowship); Kimberly Seifert, Stanford Medicine, neuroradiology (fellowship).