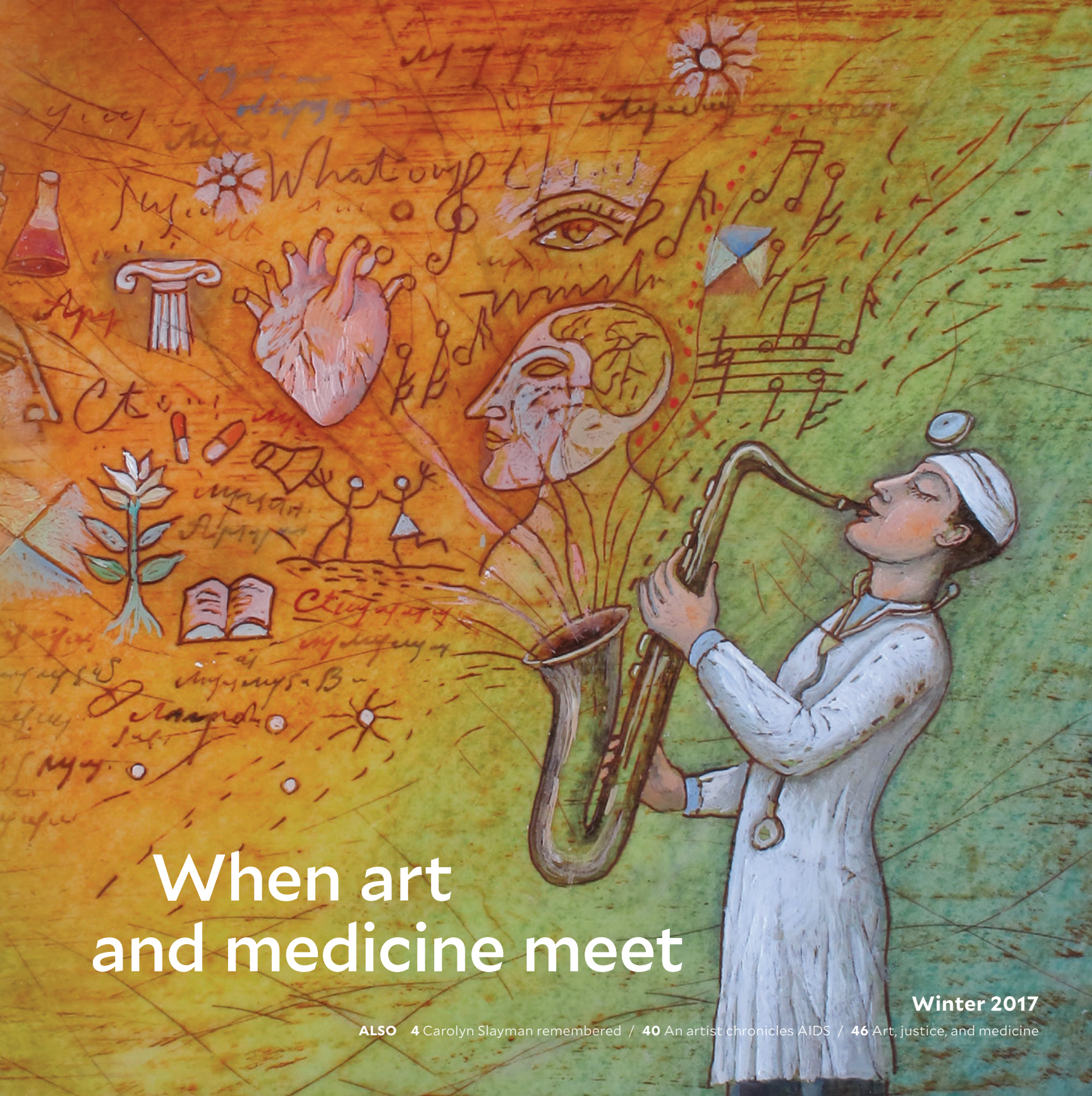


yale medicine

The magazine of Yale School of Medicine / yalemedicine.yale.edu



When art and medicine meet

Winter 2017

ALSO 4 Carolyn Slayman remembered / 40 An artist chronicles AIDS / 46 Art, justice, and medicine



Supernatural
My eyes are
looking at you

Time
My eyes are
looking at you
My eyes are
looking at you

Chopin

Brno

Went to

My eyes
are looking
at you



Features

- 12/ **Closing the circle—medicine re-engages with the humanities**
Going back to ancient times and the Renaissance, physicians have brought the arts into the practice of medicine. *By Sarah Faulkner*
- 18/ **Thirty years of the humanities at the School of Medicine**
Since the early 1980s, physicians have sought to integrate an appreciation of the arts into training medical students. *By Sarah Faulkner*
- 26/ **Students share their “sharp and poignant moments” in literary journal**
A student journal gives medical students opportunities to explore moments in their lives that have had a deep effect. *By Sarah Faulkner*
- 30/ **On the other side: listening to patients**
Alita Anderson plumbs the stories of patients, finding details and histories that reveal much more than a patient’s chart. *By Kathleen Raven*
- 32/ **Writing toward better care**
An exercise for a clinical clerkship turned into an ongoing program as students brought reflective writing into the mix. *By Kathleen Raven*
- 35/ **How art sharpens students’ clinical skills**
Painters since childhood, two medical students teach others to paint—and learn to see. *By Jeanna Canapari*
- 36/ **“In Our Own Words”: Cancer patients tell their stories**
At Smilow Cancer Hospital at Yale New Haven Health, a writing workshop helps survivors come to terms with their own stories. *By Christopher Hoffman*
- 39/ **Art therapy: helping families cope with cancer**
Art helps families heal from the wounds of cancer. *By Colleen Moriarty*

winter 2017 departments

2 From the editor / 3 Dialogue / 4 Chronicle / 9 Round Up / 40 Capsule / 42 Faces / 46 Q&A / 48 Books / 49 End Note

Is there a standard for evaluation?

Since I am, among other things, a medical educator (Yale School of Medicine, 1960-1965; Stanford School of Medicine, 1965-1997; emeritus since then), I read the Autumn 2016 edition of *Yale Medicine* with great interest. The Yale system of medical education was the first real change from the standard curriculum that I had seen or heard of when I came to New Haven as an intern in 1953. The Yale system has stood the test of time. It is not suitable for all medical schools, but it has certainly worked out well for Yale. Many medical schools have tweaked their curricula with early clinical experience, a chance to revisit basic science experiences in the later years of medical school, longitudinal clinical experiences, and other changes. New technology has probably influenced medical—and other—education more than any other single factor in my lifetime.

My question is this: How do we know that any of these

curricular changes make for better-educated medical students and healthier patients? There are so many variables in the equation that it is impossible to point to any one factor that has influenced medical education for the better. For one obvious thing, students today are both brighter and better educated when they enter medical school than we were in 1949. I have often said that I probably could not have gotten into or out of medical school in today's world. The last study with real and meaningful impact on medical education was that of Abraham Flexner, a college preparatory school teacher in Louisville, Ky, in 1910.

We evaluate research in many ways. The randomized clinical trial is the gold standard for clinical research these days. Is there a similar standard for evaluating curricular changes in medical education? If so, are the changes at Yale being put to this test?

*James B.D. Mark, M.D., HS '60
Professor of Cardiothoracic Surgery Emeritus, Stanford University School of Medicine, Stanford, Calif.*

Medical student wellness

As a beneficiary of the old curriculum, I'm intrigued to read about the new curriculum [*Yale Medicine*, Autumn 2016]. I particularly applaud a unique clerkship innovation that pairs psychiatry with primary care, given the trend to integrate psychiatrists into primary care settings.

However, there is one new challenge that was not mentioned—burnout among medical students. Burnout in medical students by the third and fourth year reaches the epidemic rate of 50 percent or higher, according to studies, and 50 percent or higher in residents and physicians in practice.

Perhaps Yale and other medical schools changing their curricula assume that a new curriculum will reduce medical student burnout. Perhaps it will. But even so, medical students will not know what they may do to reduce their burnout in residency and thereafter. Addressing that has been my major advocacy focus in retirement. That would include formal wellness programs as well as helping medical students to take the time to do what they love, with whom they love, outside of work. Since burnout correlates with more medical mistakes and poorer outcomes, the well-being of both physicians and our patients depends on these programs. Besides that, our leaders in medicine must advocate for our systems to change to ones that will give physicians enough empowerment and time to do what we know we can to help patients.

*H. Steven Moffic, M.D. '71
Milwaukee, Wis.*

SECOND OPINION
BY SIDNEY HARRIS



"HE NEVER EVEN HEARD OF SNAKE-HANDLING. WE'VE MADE GREAT STRIDES SINCE FREUD."

Send letters and news items to

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Abbreviations used in *Yale Medicine* include HS to denote the final year of residency for house staff, FW for the final year of a fellowship, and YNH for Yale New Haven Hospital.

Yale SCHOOL OF MEDICINE

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What the humanities mean to medicine

WHEN THE GASTROENTEROLOGIST Howard M. Spiro, M.D., launched the Program for Humanities in Medicine in 1983, his goal was not to turn physicians into artists. Rather, he wanted to provide opportunities for students and physicians to explore realms beyond science and medicine. The program he founded now has its third director, and the School of Medicine has seen the creation of a symphony orchestra, a student theater group, reflective writing programs, and art classes. These artistic endeavors offer not just creative outlets but also relief from the stresses and challenges of medicine.

Yale Medicine spoke with Dean Robert J. Alpern, M.D., Ensign Professor of Medicine, about the connections between medicine and the humanities, and why they matter.

What is the value of incorporating the humanities into medicine? As somebody who has spent most of his career focused on science and medicine, I find that the arts and humanities add a welcome diversion. For anyone, no matter what you do, life is more interesting when you bring the humanities into it. Having said that, I do worry that there is some confusion between the adjective *humane* and the noun *humanities*, with the implication that someone who is interested in the *humanities* is more humane than somebody whose focus is on the natural sciences. Some people are more humane than others, but I don't think there is any correlation with a devotion to the humanities.

How do the humanities affect the culture of the School of Medicine? I suspect that we attract students with an interest in the humanities because we're Yale, the most humanities-focused of the Ivy League schools. It's wonderful that we have an orchestra, a program in humanities, and a history of medicine department. Those are programs that are not essential for a medical school, but they make Yale a more interesting medical school.

Are art and the humanities ways to deal with the challenges of becoming a doctor? Students and practicing physicians alike need an escape from their jobs. Medicine and medical research can be stressful, and there needs to be more to life than our work. My favorite parts of college were the arts and humanities, because I took so much science. I still have memories of my art history course and studying Chicago architecture. Does involvement in the humanities make you a better doctor? I think it makes you a better person, a healthier person.

What pursuits in the arts or humanities do you enjoy? Opera is my major diversion. When the curtain goes up at Lincoln Center, I forget the medical school for a time. It's a nice escape.

chronicle



Deputy dean deeply mourned at the School of Medicine

Carolyn Slayman died on December 27 after a bout with cancer.

In the freezer of Carolyn Walch Slayman's lab, her chief lab technician Ken Allen stored vials of cultures from her graduate school days studying biochemical genetics at Rockefeller University. They were set aside by her mentor, Nobel laureate E.L. Tatum, Ph.D., as a memento of what she had accomplished. Allen, who worked with Slayman for 42 years, planned to present them to her upon her retirement. Sadly, that day never came.

Slayman passed away on December 27, 2016, during treatment for recurrent breast cancer, leaving a legacy that will have a lasting impact on the School of Medicine. She was 79.

"It is difficult to overstate Carolyn's influence on the School of Medicine and the many individuals that have passed through our doors," said Robert J. Alpern, M.D., dean and Ensign Professor of Medicine. "We depended on her judgment and wisdom to help guide every major decision. She will be greatly missed."

Slayman, the medical school's first deputy dean for scientific affairs, Sterling Professor of Genetics, and professor of cellular and molecular physiology known for her own groundbreaking research, came to Yale as an assistant professor in 1967. She had graduated from Swarthmore College in 1958 with highest honors in biology and chemistry, becoming the first scientist in her family. She earned her Ph.D. at Rockefeller,

where only one woman was admitted to each entering class of 15. At a dinner at the home of the president, a classmate asked why this was so. Five decades later, Slayman still incredulously recalled the response: "Because that's the right number."

After postdoctoral work in membrane biochemistry at Cambridge University as a National Science Foundation Fellow and a stint as assistant professor of biology at Western Reserve University (now Case Western Reserve), she joined Yale as assistant professor in the departments of microbiology and physiology. She helped to establish the graduate program in the nascent Department of Human Genetics in 1972, serving as director for 12 years. She was nonplussed about being the first woman to head a department at the School of Medicine when she became chair of the department (now genetics) in 1984. "It still surprises me that there weren't more women chairs back then," she said in a 2010 interview.

In 1995, Slayman became the school's first deputy dean for academic and scientific affairs—the first woman to hold a deputy deanship. She was a behind-the-scenes leader renowned for her strategic vision on matters ranging from faculty recruitment to interdisciplinary collaborations. "Both the department of genetics and in a larger sense the School of Medicine were shaped in major ways by Carolyn," said Arthur L. Horwich, M.D.,

Sterling Professor of Genetics and professor of pediatrics.

On a yellow legal pad, Slayman would diagram her thoughts, creating a strategy for solving the problem at hand. As deputy dean, she helped to create and advance research programs and core facilities—including the Yale Center for Genome Analysis at the West Campus. "At Yale, we believe that if we want to pursue something, we must understand the underlying mechanisms," she told Andrew Xiao, Ph.D., assistant professor of genetics, by way of explaining why she was keen to recruit a basic scientist to the Yale Stem Cell Center. She was instrumental in securing funding for and helping to oversee many institutional grants, including the more than \$53 million National Institutes of Health Clinical and Translational Science Award. Her efforts also included spearheading the renovation and modernization of the medical school's laboratory space to create a collaborative environment that fosters the sharing of ideas.

"One of Carolyn's great strengths was that she never had any personal ego stake in an outcome, other than what was going to be the very best for Yale," says Richard P. Lifton, M.D., Ph.D., president of Rockefeller University and former chair of the Department of Genetics.

Another of her passions was recruiting and nurturing faculty members. "She was always interested in knowing what the

Carolyn Slayman's wisdom and judgment guided every major decision at the School of Medicine, said Dean Robert Alpern.



ONLINE EXCLUSIVES

The Department of Internal Medicine celebrated 10 years of collaboration with the medical school at Makerere University in Kampala, Uganda. In that time 18 faculty from Makerere have come to Yale for between six and 12 months of subspecialty training. More than 150 Yale residents have gone to Uganda for rotations, along with 119 medical students.

yalemedicine.yale.edu/uganda

bottlenecks for junior faculty were and what support they needed to thrive at Yale, but she was also interested in me as a human being,” said Valentina Greco, Ph.D., associate professor and Howard Hughes Medical Institute Faculty Scholar.

“What I remember most fondly about Carolyn were the stories about her family,” said Daniel Colón-Ramos, Ph.D., associate professor of cell biology and neuroscience. She never failed to ask about his wife and triplet daughters, he said. “As impactful as Carolyn was in my career, now, looking back, what I remember most and will miss most were those stories, which made me feel so much a part of her family, including the Yale community.”

While she was famous for knowing everything that went on at the medical school, Slayman was also known for her attention to detail. She once spent an hour helping Horvath find the best spot to place an incubator, and advised Xiao that he’d put his audience at ease at an upcoming presentation if he wore a sweater instead of a suit.

A renowned scientist, Slayman was recognized for her work on the biochemistry of membrane transport. Using pink bread mold and yeasts that make beer, wine, and bread, she discovered the mechanism by which the enzyme yeast plasma membrane ATPase transports nutrients from the outside to the inside of cells. She utilized classical biochemistry, modern

microchemistry, and new genetic techniques to show that H⁺-ATPase functions in much the same way as other cellular systems that pump sodium, potassium, and calcium ions.

Her research was funded by the National Institutes of Health (NIH) for over 35 years, but she eventually relinquished NIH support to devote more time to her administrative role. Although her laboratory was scaled back, she continued to run it, discussing each day’s experiments over a morning cup of Earl Grey tea with Allen, her lab technician, who knew not only how she liked to conduct her experiments, but also how she liked her tea—light, with the tea bag dunked three times. That ritual highlights the sense that many had of Slayman: She was above all a colleague who took the time to listen.

—Jill Max



Crossing disciplines, Yale scientists unravel Zika’s secrets

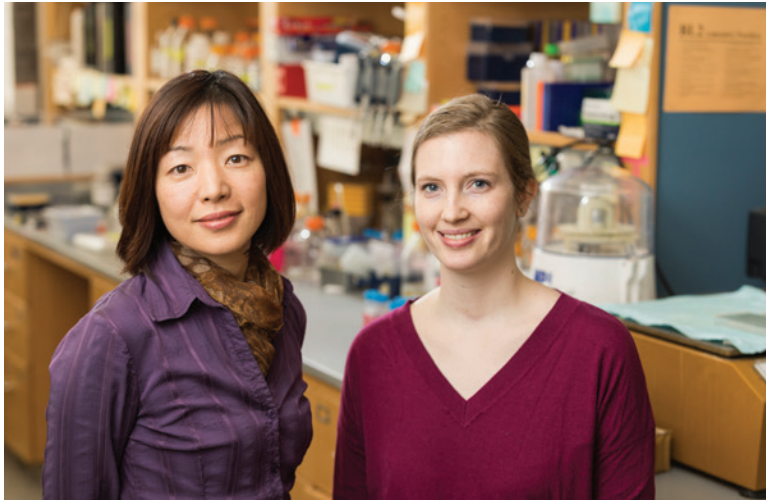
Two black chalkboards, covered with squiggles and ovals in blue, arrows in yellow, and words like “mitophagy” and “necrosis” in all caps, occupy half of the wall space in Tamas Horvath’s office. Horvath, D.V.M., Ph.D., the Jean and David W. Wallace Professor of Comparative Medicine and professor of neuroscience and of obstetrics, gynecology, and reproductive sciences, put these walls up 11 years ago; he does his

best thinking in chalk. Earlier this spring, after thinking about a patient with cerebellar ataxia, Horvath filled his chalkboard with squiggles, ovals, and arrows that laid out a hypothesis about the Zika virus that would eventually bring together seven departments at Yale and result in three published papers within nine months.

Cerebellar ataxia is a balance disorder—patients walk with a shuffle as if they are about to fall forward. A mutation causes certain brain cells to overproduce TBK1, a protein that defends the cells against viruses and flushes out damaged mitochondria. Too much of this protein, however, can cause the cells to die. As the mysterious mosquito-borne virus called Zika started spreading in Brazil in early 2015, Horvath wondered: What if it was also causing the cells to overproduce TBK1? What if that was the mechanism behind microcephaly—the underdeveloped brains of children born to mothers with Zika? “When I came to this, I got so excited. I’ve been doing research for 26 years; I thought I couldn’t be so excited any more,” Horvath said.

Unfortunately, federal funding for Zika research is scarce. The World Health Organization deemed Zika a health emergency in February, but Congress has appropriated just half the funding that federal agencies said they’d need.

About the same time that Horvath was drawing diagrams on his chalkboards, colleagues



were conducting independent research that would help in the fight against Zika. Brett D. Lindenbach, Ph.D., associate professor of microbial pathogenesis, was stockpiling the virus to study its replication. Akiko Iwasaki, Ph.D., the Waldemar Von Zedtwitz Professor of Immunobiology, was studying vaccines for the sexually transmitted herpes simplex virus. Nenad Sestan, M.D., Ph.D. '99, professor of neuroscience, was growing human fetal stem cells that unbeknownst to him were the same cells targeted by the virus. Gil E. Mor, M.D., Ph.D., M.Sc., professor of obstetrics, gynecology, and reproductive sciences, was working on the immunology of implantation and how viruses affect pregnancy. Some of these projects were funded through nonspecific research grants. Lindenbach also worked on his own time. "It was like I was back in grad school again," he said.

By pooling their resources, Yale researchers could launch studies on the Zika virus without federal funding. For months, the researchers, who had previously discussed working together, met in Horvath's office to figure out where to focus their research. They chose to look at how the virus was affecting babies in utero. "It was the perfect storm," said Lindenbach. "We had all these researchers with complementary skills."

Iwasaki asked Laura J. Yockey, an M.D./Ph.D. student in her lab, to address one of their most pertinent questions—would Zika virus in the vaginas of pregnant mice lead to brain infection in their fetuses? Within three months, a draft had reached *Cell*, and was published in August 2016. Zika virus

in the vaginas of pregnant mice, the researchers reported, did in fact lead to brain infection in the fetuses. They also found that the vaginal tract is a welcoming environment for the Zika virus, supporting studies in humans that reported sexual transmission of the virus. "Not everyone understands the dangers of sexual transmission of the Zika virus," Iwasaki said. "This study emphasizes that."

The collaborations continue: Two other multi-department studies were published in *Cell Reports* and the *American Journal of Reproductive Immunology*. Iwasaki is working with Horvath and Erol Fikrig, M.D., FW '91, the Waldemar Von Zedtwitz Professor of Medicine (infectious diseases), who is leading the study on Zika's effects on the testicles. Lindenbach and Yockey are trying to figure out why the Zika virus affects some cells and not others. "There are a lot of institutions where there is a lot of internal competition," Lindenbach said. "But it's really rare at Yale, in my experience, and that's a good thing, because the way we do science nowadays really requires people with different expertise."

—Jenny J. Chen



An opioid crisis in the city and a bad night in the emergency room

On the night of June 23, it was all hands on deck in the emergency department of Yale New Haven Hospital. Staff members were running out of resuscitation rooms and breathing tubes. Patients were put in overflow rooms, and doctors and nurses

Immunobiologist Akiko Iwasaki, part of an interdisciplinary team studying the Zika virus, asked M.D./Ph.D. student Laura Yockey to find out whether the virus in the vaginas of pregnant mice leads to brain infection in the fetuses.



ONLINE EXCLUSIVES

In a press conference at the School of Medicine in October, Governor Dannel P. Malloy hailed efforts by faculty to help address the problem of opioid addiction in the state. The Connecticut Opioid REsponse (CORE) Initiative, composed of four Yale faculty members, co-authored a report commissioned by the governor. Malloy said it would become the foundation of his legislative agenda concerning opioids.

medicine.yale.edu/core

came from other departments to keep up with the flood of patients. The pace was unrelenting—beginning at 4 p.m. and lasting for several hours.

More than a dozen patients who had overdosed on what was believed to be heroin were in the emergency room. Narcan, a drug that reverses the effects of an overdose, wasn't working as usual and multiple doses were needed.

Rachel Solnick, M.D., a resident in emergency medicine, remembers feeling that something unusual was going on. She was caring for four patients at a time, constantly checking their vital signs, and placing tubes down their throats to help them breathe. Many patients had to be maintained on a continuous Narcan drip, an unusual step to counteract an opioid overdose. "I've never been busier or more concerned about the people that were coming in," Solnick said.

One of the first patients, a man in his 70s, believed that he was using cocaine when he overdosed. The average opioid user is young, white, and male, but many patients that night were in their 60s and 70s, and reported being regular cocaine users. What they thought was cocaine was actually fentanyl—a synthetic opioid 50 times more powerful than heroin. Days later police would charge three men with selling fentanyl advertised as cocaine.

"One bag of white powder looks like the next bag of powder," said Patrick G. O'Connor,

M.D., M.P.H. '88, the Dan Adams and Amanda Adams Professor of General Medicine, chief of general internal medicine, and an addiction expert.

By 11 p.m. the emergency department took a collective breath. Seventeen people had overdosed and three of them had died. According to the state's chief medical examiner's office, the number of overall drug overdoses are leveling off in Connecticut, but deaths from fentanyl are increasing. In 2012, fentanyl was involved in 14 fatal overdoses. In the first three months of 2016, fentanyl was involved in 83 out of 119 fatal overdoses, with New Haven leading the state with 24 deaths.

In collaboration with community, state, and federal agencies, Gail D'Onofrio, M.S., M.D., chair and professor of emergency medicine, got the word out—drugs on the street may not be as advertised and may kill you—and recommended testing a small amount of any white powder before taking more.

Although on the night of June 23 many of the victims were users of cocaine, O'Connor sees an ongoing epidemic in opioid addiction driven by prescription pills. Doctors write more than 260 million opioid prescriptions each year. "A lot of this is sloppy prescribing on the part of the physicians who are not being thoughtful about when and how to use opioids," said O'Connor.

In the late 90s, the slogan "pain as the fifth vital sign,"

added pain to body temperature, blood pressure, heart rate, and breathing rate. Physicians, encouraged by pain societies, pharmaceutical companies, and even The Joint Commission, doled out unnecessary prescriptions of opioids.

D'Onofrio, David A. Fiellin, M.D., HS '94, FW '96, professor of medicine, and others have been working to bring medication-assisted treatment—primarily buprenorphine, which helps stave off cravings for opioids and can be prescribed in a primary care setting—to new settings like the emergency department.

A study by D'Onofrio, O'Connor, and colleagues published last April in *JAMA: The Journal of the American Medical Association*, showed the power of administering buprenorphine in the emergency department and referring patients to buprenorphine treatment in primary care. Buprenorphine eased patients' withdrawal symptoms, and was a critical first step to ongoing treatment.

By offering support every time someone returns to the emergency department, D'Onofrio hopes to provide people with a path to recovery. "When we save a life from an overdose, that's just the beginning," said D'Onofrio. "If we directly link them to treatment, we have a chance of keeping them alive."

—Sarah Faulkner

round up

a collection of recent scientific findings

IMMUNE SYSTEM ALSO CONTROLS WEIGHT

Recent studies have revealed that in addition to warding off bacteria and viruses, the immune system takes on functions including controlling body weight. In a study published in August in *Immunity*, Yosuke Kumamoto, Ph.D., associate research scientist, and Akiko Iwasaki, Ph.D., professor of immunobiology and a Howard Hughes Medical Institute investigator, identified macrophages, or white blood cells, that reside within fat tissue to maintain body weight. When macrophages are depleted from mice in experiments, the mice stop eating and lose weight. These results indicate the importance of fat macrophages in maintaining our energy balance and suggest a possible intervention for obesity.



ANCESTRAL ROLE FOR FEMALE ORGASM

Scientists have long tried to explain the origins of the female orgasm, which appears to play no role in human reproduction. In a study published in August in the journal *JEZ-Molecular and Developmental Evolution*, Günter P. Wagner, Ph.D., the Alison Richard Professor of Ecology and Evolutionary Biology, and colleagues in Cincinnati propose an ancestral function in inducing ovulation.

The scientists focused on a physiological trait that accompanies human female orgasm—the neuroendocrine discharge of prolactin and oxytocin, a reflex that in many mammals plays a role in ovulation. Female orgasm, the scientists suggest, may have evolved as an adaptation for a direct reproductive role—the reflex that induced ovulation.



WILDFIRE SURGE TRACED TO CLIMATE CHANGE

Climate change is likely to cause a surge in wildfires in the western United States that will expose tens of millions of Americans to high levels of air pollution in the coming decades, according to a Yale-led study conducted in collaboration with researchers at Harvard. Estimating air pollution from past and projected future wildfires in 561 counties, the researchers projected that by mid-century more than 82 million people will experience “smoke waves,” consecutive days with high air pollution related to fires.

Most likely to be affected are northern California, western Oregon, and the Great Plains. “We hope these results will advance the understanding of the impacts of an increasing threat of wildfire smoke, and aid in the design of early warning systems, fire suppression policies, and public health programs,” said Jia Coco Liu, Ph.D. ’16, a graduate of the School of Forestry & Environmental Studies and lead author of the study.



“BLUE STATE” PARENTS MORE LIKELY TO VACCINATE THEIR TEENS

Parents in the more liberal “blue states” are more likely than parents in conservative “red states” to vaccinate teens against human papillomavirus, or HPV, and other diseases, according to research from the School of Public Health published in the *American Journal of Public Health*. Comparing data from the 2012 National Immunization Survey-Teen to results of the 2012 presidential election, and factoring in sociodemographic factors, the study found that blue

states showed a 10 percent higher HPV vaccination rate for girls, and a nearly 25 percent higher HPV vaccination rate for boys.

“These associations are important because they demonstrate that there are broader forces associated with political affiliation that may influence acceptance of immunizations for adolescent children,” said lead author Linda M. Niccolai, Ph.D., associate professor of epidemiology (microbial diseases).

When art and medicine meet

AT GRAND ROUNDS IN 1998, Irwin M. Braverman, M.D. '55, HS '56, professor of dermatology, realized that residents could be offering more complete descriptions of what they had observed about their patients. “It occurred to me that if I were to ask them to describe some object that they were totally unfamiliar with—like a painting—they wouldn’t know what was important or unimportant,” Braverman said. “They would describe everything in that object.”

Since that year, Braverman has taken medical students to the Yale Center for British Art for exercises in building observation skills. The program has been replicated by dozens of medical schools, and even by the New York City police. And since then, such interactions between the humanities and medicine have blossomed around the country. Residents at Brigham and Women’s Hospital take workshops at the Museum of Fine Arts in Boston. A year ago Harvard Medical School began to integrate drama, dance, and literature into medical education to help students become more empathetic and reflective. Columbia requires its medical students to take a course in narrative medicine. More than a decade ago, Stanford launched the Medicine & the Muse Program, which integrates the humanities into medical education and practice.

At Yale, such efforts began in 1983 with the creation of the Program for Humanities in Medicine, and have expanded with the appreciation that incorporating the humanities into medical education can make for better doctors and better outcomes. Writing, painting, and other arts help students and residents see their patients not just as symptoms or ailments, but as people with lives outside the hospital whose stories affect their health. Hearing those stories can establish empathy between doctors and their patients.

“We are, after all, training to take care of human beings,” says Anna Reisman, M.D., associate professor of medicine and director of the Program for Humanities in Medicine.

In this issue of *Yale Medicine*, we describe how faculty, residents, and students have worked together to integrate the humanities into medical education and practice.

Closing the circle—medicine re-engages with the humanities	12
Thirty years of the humanities at the School of Medicine	18
Students share their “sharp and poignant moments” in literary journal	26
On the other side: listening to patients	30
Writing toward better care	32
How art sharpens students’ clinical skills	35
“In Our Own Words”: Cancer patients tell their stories	36
Art therapy: helping families cope with cancer	39



Closing the circle— medicine re-engages with the humanities

By Sarah Faulkner

Photos by Robert Lisak

Caption





When Howard M. Spiro, M.D., envisioned bringing the humanities to the School of Medicine in 1983, he wanted to encourage students and faculty to think beyond science and medicine. The humanities had long shared a link with science—Galileo used watercolors and engravings to show the craters that scarred the moon’s mountainous surface. Darwin, who is remembered as the father of evolution, was also a talented artist and a writer who excelled in communicating scientific concepts. Spiro, a professor of medicine and a renowned gastroenterologist, wanted to close the circle and bring the humanities back into medicine.

Between Galileo and Darwin on one hand and Spiro’s generation on the other, medical education had become highly technical and focused. In 1910, the Flexner Report commissioned by the Carnegie Foundation for the Advancement of Teaching concluded that advancing scientific knowledge to fight disease was the primary goal of medical education. That view prevailed for much of the 20th century, but during the past 50 years, medical schools have returned to the earlier tradition of including the humanities as a vital tool for students learning to become physicians. By 1967, Penn State College of Medicine had created the first department of medical humanities. Today, out of 141 surveyed

American medical schools, 126 had either elective or required courses in medical humanities, according to the Association of American Medical Colleges.

Since Spiro created the Program for Humanities in Medicine in 1983, it has evolved from attendees sipping sherry at erudite lectures to interactive classes and student-led programs. Students have the opportunity to take part in live figure drawing classes at the School of Art, perform in the Yale Medical Symphony Orchestra, and refine their observation skills with curated art exhibits.

RICHNESS OF DOCTOR-PATIENT ENCOUNTER

As medical students prepare to enter the world of medicine, they shoulder the responsibility for the patient’s life. “There is probably no greater drama than the interaction between physician and patient,” says Thomas P. Duffy, M.D., professor emeritus of hematology, who took over the humanities program upon Spiro’s retirement in 1999. “Whatever richness one brings to the patient enriches the encounter. The humanities are the source of that enrichment.”

The program, Duffy says, was never intended to create writers, artists, and musicians. Rather, it is an outlet for the creativity that already exists among medical students, residents, and faculty. The term “humanities” is intentionally broad—to foster any type of creative work. The idea is to help students harness those interests and apply them to medicine. Storytelling in particular is a powerful way for students to connect with their patients. “Doctors deal in stories—we are part of patients’ stories,” says Nancy R. Angoff, M.Ed., M.P.H. ’81, M.D. ’90, HS ’93, associate dean for student affairs. “We are, in fact, creating our own life story through the work that we do, through the people we connect with, through the experiences we have.”

Other medical humanities programs on the medical campus, such as the Yale Internal Medicine Residency Writers’ Workshop, encourage residents to reflect on their own experiences or on a particular patient’s story. Anna Reisman, M.D., associate professor of medicine and director of the writers’ workshop (Lisa Sanders, M.D. ’97, HS ’00, associate professor of medicine, is the workshop’s writer-in-residence), says that stories invite connection and establish empathy between

patients and physicians. “We are, after all, training to take care of human beings,” says Reisman, who became director of the Program for Humanities in Medicine in 2015. “We are not training to just take care of diseases.”

Taking the time to hear a patient’s story is becoming harder in the context of a 15-minute doctor’s appointment. The fast pace of the clinic combined with the responsibility of facing death and illness regularly can often lead physicians to ignore their feelings—Angoff worries about burnout among doctors. “I think what feeds the doctor’s soul is relationship—relieving suffering within the context of a relationship,” says Angoff. “The humanities act as a way to recover from a loss of empathy and to reclaim one’s self, to feel again.”

Angoff knows what it is like to work closely with patients who are facing death—she has spent her career working at the heart of the HIV/AIDS epidemic. Although AIDS is no longer a death sentence, she acknowledges that, like so many things in medicine, it is still distressing to her patients. Humanities, she says, provide refuge for herself as a lover of the written word and former middle school English teacher, and for her patients. “There’s a sense of immortality in a story that has to be told,” she says.

CREATIVITY STIFLED

There’s another reason for incorporating humanities into a medical student’s curriculum—medical education emphasizes the mastery of such detailed technical information as the anatomy of the human body and the biological mechanisms that cause disease. The humanities allow students to exercise another part of their brains and their personalities. The medical school prides itself on the eclectic makeup of the student body—many come with backgrounds in humanities or an interest in writing, music, art, and history. “In medical school, I think sometimes people get bogged down in science and facts,” says Kristina Klara, a second-year medical student and an editor of the student literary magazine,

Murmurs. “A lot of us came in with this creative side that can feel a little stifled.”

While the humanities provide a means to celebrate our own experiences, they also can teach us about our biases and perceptions of the world around us. A class in health justice developed by medical students Robert Rock and Tehreem Rehman uses art to reveal the implicit biases that physicians may have against their patients. In a collaboration with the Yale University Art Gallery and the Yale Center for British Art, students in the U.S. Health Justice course observed and discussed paintings that explored questions of identity and power dynamics. The tour featured such paintings as “Untitled” by Kerry James Marshall, which shows an African-American woman painting a self-portrait, that got students thinking about what type of person they imagine when they hear the word “doctor,” just like what they imagine when they hear the word “painter.”

The tour also included a painting called “Whispered Words” by Paul Gauguin, which sparked a discussion about electronic medical records (EMR) and who decides the content of a patient’s story. “It challenged people to think about who are the arbiters of history,” says Rock. “A patient has to tell his or her story over and over again. But the story that a physician puts in the EMR gets carried forward with them and very often can be filled with words and subjective interpretations that bias future providers in terms of what to expect.”

Rock says that having the art in front of the students gives them a tangible way to voice their opinions and thoughts. It allows for discussion of such sensitive topics as race and privilege in the context of medicine. Cyra Levenson, Ed.M., former curator of education and academic outreach at the Yale Center for British Art, now at the Cleveland Museum of Art, takes it a step further—she argues that communicating through images is part of being human. “We tend to relegate the visual arts to a small domain of experts,” she says. “But it’s fundamentally human to make images, explore images, think through images, and communicate through images.”

In the fall of 2015, Levenson, Reisman, and medical student Siyu Xiao created a mini-lecture series called *Learning to See*, coordinating with the Program for Humanities in Medicine. The series explored the





connection between our experiences and our perception of the world around us. “We think we all know how to ‘see,’ because we’re very fluent in taking in information, processing it quickly, and deciding what it means,” says Levenson. “Clinicians are using their senses when they engage with a patient. It seemed worthy of exploration.”

Like storytelling or writing, art can facilitate connection and help people gain insights about others’ experiences. Appreciating a work of art is like peering back into a different time when a moment of life was captured. “There’s this broad swath of human history that’s encapsulated in these objects or images that people made,” says Levenson, “and made for the express purpose of sharing some bit of experience.”

The humanities program has expanded over the past 20 years and is likely to continue doing so. Reisman and medical students are always looking for ways to integrate the humanities directly into the curriculum. And while it sometimes feels as if they are innovating and reviving the way schools teach medicine, Levenson directs attention back to such early scientific thinkers as Leonardo da Vinci, the painter, inventor, and mathematician. “We’re not making a case for something new,” she says. “We’re making a case to reinvigorate something that’s always been there.” */yale medicine*

—Sarah Faulkner was Yale Medicine’s 2016 writing intern.

When Anna Reisman replaced Thomas Duffy in 2015, she became the third director of the Program for Humanities in Medicine since its inception in 1983.

Thirty years of the humanities at the School of Medicine

For more than 30 years, faculty at the School of Medicine have striven to incorporate the humanities into medical education. Among their efforts are writing programs, literary salons, and a symphony orchestra. In these pages, we take a look at some of the programs that have integrated the arts and humanities with the practice of medicine.





Irwin Braverman, MD



**HONING OBSERVATION SKILLS
IN THE GALLERY, 1998**

In 1998, Irwin M. Braverman, M.D. '55, HS '56, professor emeritus of dermatology, began teaching first-year medical students to hone their observational skills by analyzing paintings in the Yale Center for British Art. Developing those skills prepares the students for such activities as the physical exam, where they rely on observations to make clinical decisions. Braverman recently led a tour of paintings with a dermatology theme in the Cushing/Whitney Medical Library.





ROBERT LISAK PHOTO; TOP RIGHT, JOHN CURTIS PHOTO



▲ **YALE INTERNAL MEDICINE RESIDENCY WRITERS' WORKSHOP, 2003**

The Writers' Workshop is an annual two-day program for Yale residents in internal medicine and other specialties to learn the craft of story and essay writing. Each January, the residents read their final work to the Yale community, and the department sponsors a Writing and Medicine Grand Rounds. Reflection on the residents' own experiences or the patients' stories creates deeper empathy and a greater connection between doctor and patient. At the program's 10th anniversary celebration, writer and transplant surgeon Pauline Chen, M.D., HS '98, discussed the importance of storytelling for physicians.

◀ **YALE MEDICAL SYMPHONY ORCHESTRA, 2007**

In 2007, Thomas P. Duffy, M.D., professor emeritus of medicine (hematology), suggested to Lynn Tanoue, M.D. '82, HS '85, FW '89, professor of medicine, and a violinist, that they make use of the talented musicians within the medical community. An invitation to a sight reading of Beethoven's Symphony No. 5 brought almost 200 musicians and vocalists. Since the Yale Medical Symphony Orchestra's inaugural performance in 2008, it has offered annual winter and spring concerts, as well as occasional additional events including Halloween concerts and pop concerts.



▲ **YALE UCL MEDICAL AND ENGINEERING STUDENTS' POETRY COMPETITION, 2011**

The Yale-University College London Poetry Competition began in 2011 as a way for medical and engineering students to demonstrate their creativity. Medical student Lorenzo Sewanan received an award for his poetry from Dean Robert J. Alpern, M.D.

▶ **LITERARY SALONS FOR MEDICAL STUDENTS, 2012**

Literary salons bring together faculty and first- and second-year medical students to discuss books about medicine. Such books as *The Immortal Life of Henrietta Lacks* and *The Plague* are chosen to correlate with courses the students are taking. At one salon, Gerald Friedland, M.D., and Erol Fikrig, M.D., FW '91, led a discussion of *The Plague*.

▼ **THE ART OF CARING, 2013**

Led by Alita Anderson, M.D. '01, three medical students collected the stories of a bus driver, a kitchen worker, and a custodian at the medical school. These are stories about people who work to support life on campus, but often do so behind the scenes. A year later seven students read their works about a security guard, a cashier, a newspaper vendor, and others. Students honored these staff members by celebrating all they do to maintain the quality of life that students enjoy.







▲ **STUDENT VOICES, 2015**

First-year medical students Keval Desai and Patrick Huang realized, during the orientation session for the Humanities in Medicine program, that every student comes to medical school with a unique story. They created a casual lunchtime lecture series in which students could tell those stories to their peers. It's a chance for students to sharpen their storytelling skills and gain some insight into their classmates' lives. In one of the first talks, Melissa Thomas, an Iraq veteran, described her experiences on a base outside Baghdad.

▶ **LEARNING TO SEE, 2015**

The *Learning to See* lecture series, organized by Cyra Levenson, Ed.M., former curator of education and academic outreach at the Yale Center for British Art, Yale medical student Siyu Xiao, and Anna Reisman, M.D., director of the Program for Humanities in Medicine, began in the fall of 2015 as a way to connect the skills of visual art with practices in medicine. Art, says Levenson, connects cultures and people across time and serves to reshape how we interpret the world around us. "It's the first and fundamental human language," Levenson says. "We are wired to understand our world through art."





Students share their “sharp and poignant moments” in literary journal

By Sarah Faulkner

Photograph by Carl Kaufman

For Lorenzo Sewanan, poetry begins as an image. “When a moment or a conversation brings an image to mind, even an imaginary one ... that’s what poetry is good at capturing.”

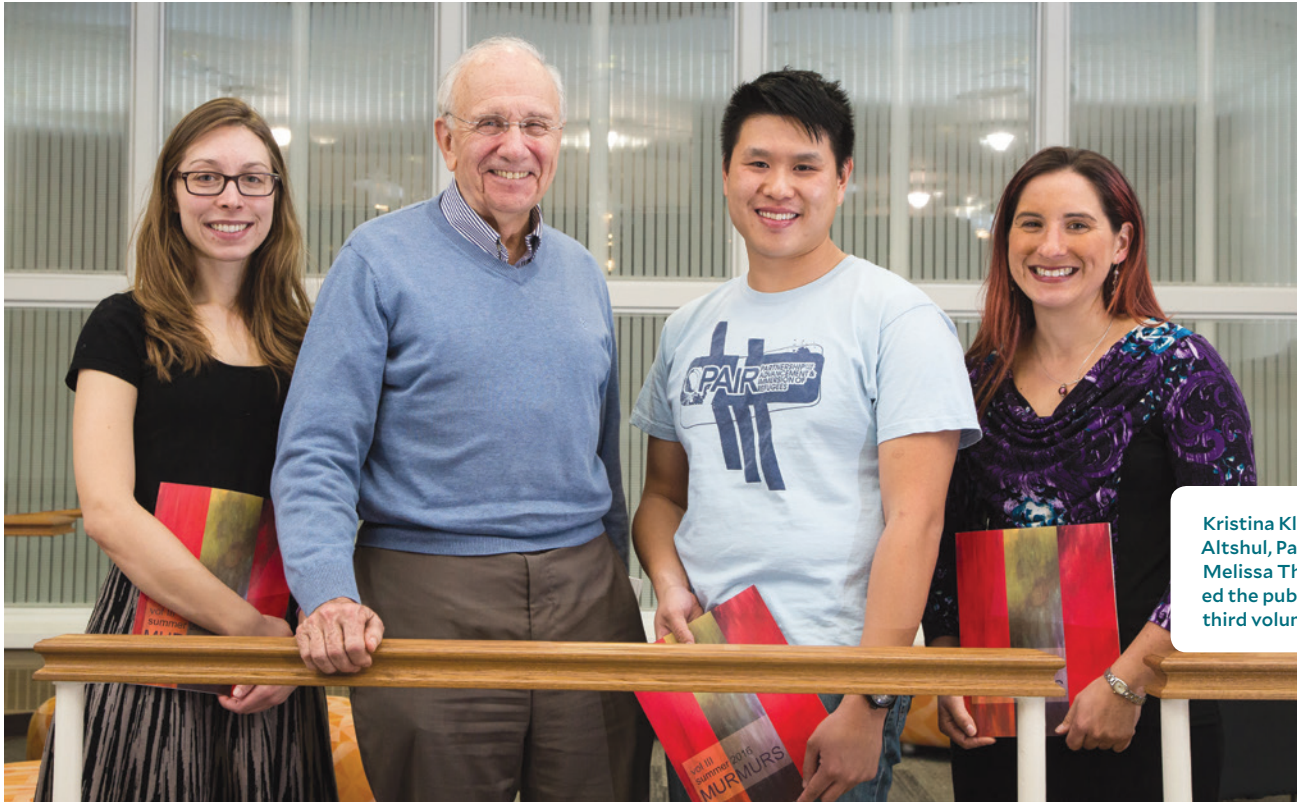
He jots down those moments and scenes that spark inspiration onto his iPhone, to return to them later. Speaking with a fellow medical student, Sewanan was inspired to write a poem called “Reflex,” which was included in the third volume of *Murmurs*, the student literary magazine. The poem describes a woman willing a man’s legs to respond to a reflex test, only to realize that she must tell him that he will never walk again. This image came to Sewanan when a friend described the challenges of studying neurology. “There’s a hesitation people have about going into the field of neurology, which is that you become very good at diagnosis, but you can’t do much to treat people,” says Sewanan, an award-winning poet who often contributes to *Murmurs*.

When Sewanan, a fifth-year M.D./Ph.D. student, and a few of his friends decided to start a literary magazine as first-year students, they weren’t sure who else would contribute. The group included Jacob

M. Izenberg, M.D. ’14; Christine Sunu, a former medical student, now a hardware and software interface designer in San Francisco; nursing student Olivia Ackerman; and Matthew Meizlish, also a student in the M.D./Ph.D. program.

“We just wanted to see what was out there,” says Sewanan. It took a year to get the magazine started. Anna Reisman, M.D., associate professor of medicine and director of the Program for Humanities in Medicine, offered her support. Izenberg paid for the journal’s domain name, yalemurmurs.squarespace.com, in its first year and Reisman has since secured funding for the domain and a print issue. Now, four years later, *Murmurs* is thriving, publishing about 30 student works of poetry, visual art, and prose every year. The magazine has about 20 contributors and a team of editors, all of them students in the School of Medicine, School of Nursing, and the School of Public Health. “It was the first-years, including Patrick Huang, Kristina Klara, Maria Korah, and others who were instrumental in getting the magazine published this year,” Sewanan said. And this year, for the first time, the students published a print edition. The previous two collections were released electronically on iBook.

Students contribute everything from deeply felt stories about personal experiences to striking pieces of art. The most common submissions are poetry. “A lot of moments in medical school are sharp and poignant,” says Huang, who serves as poetry editor. “Sometimes it’s something you want to quickly express as opposed



Kristina Klara, Victor Altshul, Patrick Huang, and Melissa Thomas celebrated the publication of the third volume of *Murmurs*.

to a long drawn-out narrative.” Sewanan has a different theory. “Maybe medical students don’t have enough time to write long pieces of prose,” he joked.

But Sewanan agrees that “medicine is extremely dramatic.” It’s important, he feels, to have a healthy way to manage the stress and anxiety that can come with caring for people’s health, and *Murmurs* provides an outlet for students to express the moments that can weigh on them.

Haunting moments in the life of Melissa Thomas found their way to *Murmurs* as both poetry and prose. A second-year medical student and a former Army officer who served in Iraq, she hasn’t taken a formal writing class since she was a child. When she came to Yale, she signed up for a creative writing group and began telling the stories that her mother had encouraged her to write down for years. “Not a Quiet Day” tells of an IED exploding under her vehicle in Iraq. In “Dignity in the Desert,” she describes the last moments of an interpreter mortally wounded in a bomb blast.

Sharing stories about her time in the military is Thomas’ chance to encourage young girls to pursue the opportunities that await them in the military and to reflect on her own experiences. “The process of thinking through things and getting past the fear of sharing is liberating,” says Thomas.

Huang notes that writing and art also provide a way to connect with patients and their peers. “When you talk to patients, it’s good to find shared experiences,” he says. “Having an outlet to reflect on stories from your past gives you a great connection to people you meet down the road.”

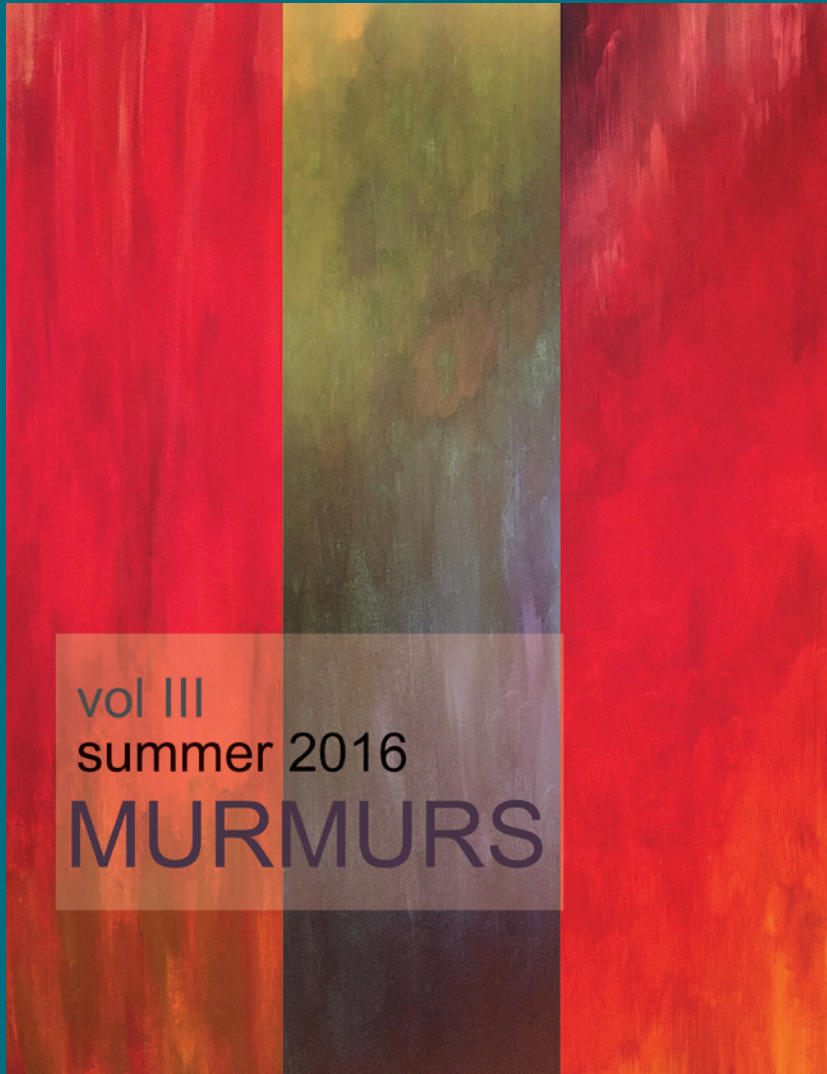
The submissions don’t have to be about medicine, although many of them are. One student detailed her relationship with her mother. Another student wrote of a man who left his family and flew to another country after receiving a warning of danger from the FBI.

In their “Who We Are” page, the editorial staff points out the connection between the humanities and the practice of medicine: “We are taught that auscultation is more of an art than a science: that the sound of the heart likens itself to music and poetry in its different rhythms, and that the student must immerse himself into the sound of the heart murmur as one would sit listening in the center of a symphony.” [/yale medicine](#)

Sarah Faulkner was Yale Medicine’s 2016 writing intern.

Selections from *Murmurs*

Last summer saw the publication of the third volume of *Murmurs*, a literary journal edited by students at the School of Medicine. The journal includes poems, essays, short stories, photographs, and works of art by medical students, nursing students, students in the Physician Associate program, postdocs, residents, and an alumnus. We include here a poem and short story by two medical students.



Revive

By Wyatt Hong

Remember, five years ago, when you were still alive?
My arm on your blanket, your face pillowed on my arm,
We watched the summer clouds almost move.

Sitting up for your chemo, you were so brave
The nurses called you Captain. Nothing could do you harm.
Remember, five years ago, when you were still alive?

Looking at your brown eyes, I did not believe
That you would die. Your breath warm on my arm,
We watched the summer clouds almost move.

Each time I bathed you, I remembered to save
A clump of your falling hair as some sort of charm.
Remember, five years ago? You were still alive.

Every dawn, I would pray for you to survive
Until the doctors came. Hearing them swarm,
We watched the summer clouds almost move.

There will never be summer. Life has no more to give.
But what does that matter. I am here. Touch my arm.
Remember. Five years ago, when you were still alive,
We watched the summer clouds almost move.

This poem by Wyatt Hong was a 2015–2016 Marguerite Rush-Lerner Creative Writing Contest Winner.

Bibi

By Jessica Greenberg

It was 8 a.m. when Bibi turned on the sink to fill the kettle. While waiting for it to boil, she went out front to retrieve the newspaper like she did every morning. The house was almost empty. Her two grandchildren were living in New York, her daughter had begun her early morning commute on NJ Transit, and her son-in-law was just getting out of the shower before driving to the nearby university to teach physics. Rex, the family dog, had died over three years ago, but Bibi had still not adjusted to life with no warm beings around. In fact, Bibi still had not adjusted to life in suburban America even though she narrowly escaped Romania more than 25 years ago. In fact, Bibi wasn't sure she had ever felt at home. It was this she thought about as she stepped out the front door into the icy wind, the screen door clanging shut behind her. Some smell in the wind rushed her mind in reverse, and suddenly she saw herself at a small wooden kitchen table, staring out the window, watching little flakes fall to the ground, while her mother cooked eggs from the coop for breakfast. A neighbor's dog barked and Bibi was brought back to the current everlasting winter. She stepped down to grab the blue-bagged New York Times, but her slippered right foot slid along the frictionless ice, and she fell forward. Her arms not quick enough to break her fall, her head did instead, smacking against the powdered front walkway. The kettle whistled, and her son-in-law pulled on his heavy winter jacket. When the kettle screamed, he called out "Bibi, your water is ready!" and switched off the stove, opened the back door, walked to his car, and backed out of the driveway.

Jessica Greenberg's story was inspired by a friend who works in the medical field and was responsible for her grandmother's end-of-life care.

On the other side: listening to patients

By Kathleen Raven

Photographs by Melanie Stengel

Alita Anderson, M.D. '01, scrunched her face, squinted her eyes, and yelled, “JESUS! Jesus!” In a voice that was sometimes honeyed, other times squawky, she was portraying for an audience of first-year medical students a frightened woman named Ruby.

Then she took on the persona of a 34-year-old Vietnam vet who struggled with drug abuse and alcoholism.

The Atlanta native, who founded and leads her Georgia-based consulting firm, Eubio Medical Communications, knows the stories shared by this man and woman well. She’s been performing this cultural awareness exercise in various iterations at Yale for nearly 15 years. Her goal is to convey to new medical students how cultural differences between patients and doctors can easily go unrecognized, to the detriment of the doctor-patient encounter. As a medical student, Anderson collected, wrote, and published oral histories in a book based on her research for her thesis. And she first performed the stories for her classmates and faculty at a student talent show.

“When I saw her perform I was blown away. I’ve never been moved like that,” said Nancy R. Angoff, M.P.H. ’81,

M.D. ’90, HS ’93, associate dean for student affairs. She recruited Anderson to reenact the histories for first-years.

For her performance in The Anlyan Center auditorium in August, Anderson continued with the format suggested by Angoff over 15 years ago. She acted out stories from her book, *On the Other Side: African Americans Tell of Healing*, and projected on a large screen were clinical patient histories based on those stories. Sitting on a chair beneath the screen, Anderson gave Ruby’s account of her life with details that did not appear in the medical record. Ruby’s story began with an event from five decades earlier—when she met Isaiah, the love of her life—and described their courtship and marriage up to the incident that brought them to the hospital.

Her chart read: “77-year-old African-American female presents to emergency department after she and husband held up at gunpoint. Patient is a poor historian.” The reason for her visit according to her chart? “My nerves are bad.” When Ruby approached the crucial moment, just after a young man bent on robbery entered her home with a gun, she repeated the name that comforted her, “Jesus,” until her speech became strangled with fear. The medical record was curt: “Per police, husband scared off intruder by shooting at him. Patient denies chest or shoulder pain, shortness of breath, or diaphoresis.” Through her story, Ruby conveyed the stress and pain-in-the-heart trauma of the experience. But based on her medical chart, a clinician might think Ruby had a vague, undefinable discomfort.

In her second narration, Anderson portrayed a young man who earned \$50,000 a year at his railroad job in Indianapolis before getting shipped off to Vietnam. When he came back from the war, the religious young



▲ During a performance in the Anlyan Center auditorium, Alita Anderson portrayed a 77-year-old woman and a Vietnam Veteran. She used their stories to depict the difference between a patient's life and the contents of a medical chart.

◀ Anderson hopes that students will learn from her performance to become aware of their implicit biases in their interactions with patients.

man got mixed up in all the things that he'd learned as a child were forbidden: smoking, drinking, gambling. Later, in the emergency department, his medical record mentions his drug abuse, but not his military service. The doctor writes: "34-year-old African-American male brought in by police—drug overdose? Social history: cocaine abuse, 100 pack-years of tobacco, chronic alcoholism, previously known to be homeless."

After Anderson's performance, Angoff asked the students to discuss the differences between the stories and the medical histories. "The medical history has to convey a very limited amount of relevant information quickly so health care staff know what is going on,"

one student said. Audience members nodded in agreement. "I think the physician was condescending when he or she wrote Ruby's current condition as a quote that says, 'My nerves are bad,'" said another student. Another student observed that the young man's medical record came across as overly negative, even though the man described in his story how he tried to deal with mental illness.

At the conclusion, Angoff encouraged students to continue to search for and recognize cultural differences and their own implicit biases during their interactions with patients. "What I hope students get out of this is that patients have stories upon stories upon stories," Anderson said after her performance. "And as physicians, they will hear only one—very short—story." */yale medicine*

Kathleen Raven is a science writer at the School of Medicine.

Writing toward better care

By Kathleen Raven

Photograph by Robert Lisak

Amid the frenetic pace of a hospital emergency department, a truism can be overlooked: patients go to the ED because they need care. They are sick, but may not express their conditions in a clear or even truthful way.

Geoffrey Z. Liu, M.D. '15, recalled a patient he met as a second-year medical student at Yale. In the ED examination room, the patient complained of paralysis along her body's entire left side. "When someone says she cannot move a side of her body, you immediately think neurological—is it a lesion on the brain?" said Liu, now a psychiatry resident at Massachusetts General Hospital in Boston. He asked follow-up questions to narrow his diagnosis. Did she see spots in her vision? A tingling on the left side of the face? Her answers didn't fall into categories of related symptoms. On top of a potentially debilitating medical situation, the patient explained she'd just lost her job and was in the midst of a divorce after her husband's infidelity. "Her story tugged at our heartstrings," Liu said. Her condition, he and his colleagues decided, was from a cortical stroke. The attending physician complimented the team's analytical thinking, then gave the diagnosis: opioid addiction. According to

her medical records, the patient had visited several local EDs and presented with different symptoms, but always requested a prescription for Vicodin, made from acetaminophen and hydrocodone, an opiate. "This patient may be lying, but she still needs your help," Liu said, recalling what his preceptor said. Still, Liu felt betrayed. To sift through his emotions, Liu chronicled the experience in his journal.

As a third-year student, Liu found a way to share the power of such reflective writing with his classmates. After students completed their surgery clerkship, Anthony W. Kim, M.D., then associate professor of surgery, asked Liu and his classmates to give a workshop—they could choose any topic—to their colleagues to practice presentation skills. Liu, who had majored in philosophy as an undergraduate at Yale, created a series of writing prompts. "I thought things would go down poorly," Liu said of his workshop. He didn't want to come across as touchy-feely. Surgery has a reputation as a specialty in which physicians and staff keep an airtight seal on emotions. Liu started with low-hanging fruit: *Write for one minute about the most boring moment of the past week. Or: Since being on this clerkship I have become more _____. After a half-hour of warming up, Liu went deeper: Write about a patient who made you deeply uncomfortable during your clerkship.*

The students' response was enthusiastic. "If you don't have the right person leading this, students can think it is a hokey exercise," said Kim, now chief of thoracic surgery at the University of Southern California. "But Geoff understands people. He really helped the students open up about their experiences." Kim and Richard J. Gusberg, M.D., director



Andi Shahu, Kayleigh Herrick-Reynolds, Daniel Zheng, and Lorenzo Sewanan have taken leadership roles in a creative writing workshop that helps students sort through their emotions during clinical clerkships.

“It’s a good setting for people who aren’t used to writing—you’re not thrown in the deep end.”

—Kayleigh Herrick-Reynolds

of the surgical clerkship, asked Liu to lead the workshop again after the next group finished. Liu obliged and volunteered his time for periodic workshops for the next 18 months. Kim, Gusberg, Liu and others published a 2015 study in the *Journal of Surgical Education* that detailed how reflective writing could be incorporated into the medical school curriculum. And that’s exactly what happened next in the medical school.

INSTITUTIONAL SUPPORT

After Liu graduated and left for his residency in Boston, Anna Reisman, M.D., associate professor of medicine (general medicine) and director of the Program for Humanities in Medicine, approached Michael L. Schwartz, Ph.D., associate professor of neuroscience and associate dean for curriculum, about incorporating reflective writing workshops into the four clerkship rotations as a pilot program. Schwartz agreed, and members of the curriculum committee will decide later whether the workshops should be permanently included. Next, Reisman looked for a successor to Liu. Initially, she seemed a likely candidate. “But we decided what is so unique and wonderful about this is that it is led by students,” Reisman said. Daniel Zheng, a fourth-year medical student, volunteered to fill Liu’s spot, having been impressed with the exercise the year before. Zheng and Reisman recruited 11 additional workshop leaders and created a training program. Besides learning how to lead discussions around sensitive topics, the team took a course in Title IX compliance reporting for issues of sexual harassment.

Already, certain themes have emerged from the

students’ writing after each of the clerkships. After the medicine/neurology clerkship, students have written about the emotional burden of being a health care provider and how social determinants affect the quality of care. Following the surgery/emergency department rotation, students have struggled with a loss of empathy and challenging team interactions and power dynamics. Pediatric and obstetrics/gynecology rotations have resulted in stories about unexpected emotion, or lack of emotion, while witnessing births and abortions.

Kayleigh Herrick-Reynolds, a fourth-year who will lead third-years through the workshop this year, said she rarely writes in her spare time but felt reassured by the structure of the workshop. “It’s a good setting for people who aren’t used to writing—you’re not thrown in the deep end,” she said. She also noticed that her writing was more intimate and personal in her clerkship workshop than in other writing she’d done for assignments in medical school. Herrick-Reynolds, Reisman, and Zheng are collaborating to publish a journal article about the workshops. This past fall, the group collected responses from 102 students and eight workshop leaders. Students were asked whether they would be more willing to write about certain topics—medical hierarchy, sexual harassment, patient interactions—with a peer leader than with a faculty member. The team will also analyze anonymous writing samples from previous workshops according to a four-point scale to determine if, based on word choice, empathy increased among students throughout the course of the four workshops.

When asked whether he writes now, Liu said he has taken a break from formal writing, but still keeps a diary. Herrick-Reynolds and Zheng had similar situations. With institutional support, Kim said, reflective writing could be more commonplace for third-year students. That would be significant, added Kim, who sees this exercise as “a potential tool that mitigates the effect of physician burnout.” *yale medicine*

Kathleen Raven is a science writer at the School of Medicine.

How art sharpens students' clinical skills

Since they were children, medical students Siyu Xiao and Kathleen Yan have been drawn to the arts. Xiao, who completed a minor in Studio Art at the University of Pittsburgh, draws and paints. Yan has been painting and drawing since childhood and, as a Brown undergraduate, took painting courses through the nearby Rhode Island School of Design. “Those were some really great experiences for me, to spend eight hours a day in the studio,” she says.

As a medical student, Yan finds that the skills she learned in art class can be applied to the practice of medicine. “Some of my favorite lessons from painting and drawing were taking note of contrast, dark, and light,” Yan says. “When you look for jugular venous distension, for example, you need to look for shadows.”

The sharp observational skills that every artist must cultivate are also helpful to physicians, Xiao says. The key to observation, whether in art or in medicine, is “removing interpretations and assumptions about what is in front of you,” she says.

“The visual arts offer so much to those of us in this profession,” says Anna Reisman, M.D., associate professor of medicine and director of the Program for Humanities in Medicine. When Reisman put out a call for student assistants, both Xiao and Yan answered. The program aims to connect students in the health professions, including medicine, nursing, and the Physician Associate Program, with artistic pursuits. “Art can be a way to grapple with understanding the perspective and experience of others,” says Reisman. “It’s also the experience of creating art, regardless of ability, as a means of capturing one’s experience by paying attention to small details.”

Xiao and Yan help Reisman coordinate activities that encourage students to explore the humanities. Xiao worked with Reisman on a five-part series, *Learning to See*, in which visual artists held workshops and gave lectures for health professions students. The series “came to be thanks in large part to Siyu’s vision,” says Reisman. Xiao also coordinates curator-led tours of art collections in the Medical Historical Library.

Xiao and Yan reached across campus to faculty and graduate students at the School of Art and coordinated workshops in which art students instructed health professions students on drawing.

Nearly 30 students sketched live figure models, and their work was guided and then critiqued by the art students. The workshops were open to all students, whether or not they had ever picked up a pencil to draw before.

Learning to observe as an artist can also, according to Xiao and Yan, help caregivers deliver unbiased care by encouraging them to see patients as individuals. “We know that there is a lot of research being done about implicit bias, especially in terms of health disparities,” says Xiao. “If we are able to approach each patient as if we are approaching a blank canvas, it can begin to help us understand what our biases are and try not to let that affect our practice.”

“Even if patients have a condition that is common in their demographic, every patient is unique,” says Yan. “They may have the textbook disease, but they may not have the textbook presentation, and it may affect them differently on so many levels. ... With that mindset, you keep yourself open to all the possibilities.”

Upon graduating, Xiao and Yan hope to pass the baton—or the brush—to new students eager to incorporate the arts into medical education. In the meantime, Reisman hopes their passion for art will continue to catch on, and that more health profession students will turn to art to help them observe their patients, as well as simply enjoy art for its own sake. “Their motivation and enthusiasm for bringing arts and humanities opportunities to their fellow students,” says Reisman, “is infectious.”

—Jeanna Canapari



Siyu Xiao and Kathleen Yan, painters since childhood, help other medical students find ways to explore humanities.



“In Our Own Words”: Cancer patients tell their stories

By Christopher Hoffman

Photograph by Terry Dagradi



The Cedar Strings Quartet, composed of medical students Aishwarya Vijay, Michelle Ferreira, William Chen, and Charles Hsu performed the String Quartet No. 12 in F Major Op. 96, "American" by Antonin Dvořák. The quartet played at a reading of essays by cancer survivors at Smilow Cancer Hospital at Yale New Haven Health.

For Christine Shadle, Ph.D., the writers group for patients at Smilow Cancer Hospital at Yale New Haven Health was a godsend.

She seized the opportunity to write frankly about her breast cancer and share her writing with fellow patients, without softening the “gory and disgusting” realities of her disease. “It’s really lonely to have a severe illness,” said Shadle, who is now in remission. “This is a way of telling my story, and it ends up being a way to find ourselves.”

Shadle and nine other patients shared their work in a booklet called “In Our Own Words,” published thanks in part to a grant from the annual Closer to Free fundraising campaign. On a Thursday evening in October, four patients and three guest readers read essays from the booklet before an audience of physicians, caregivers, and family members in the Park Building. The authors and guest readers, including Yale New Haven Health CEO Marna P. Borgstrom, M.P.H. ’79, read from the works. By turns ironic, inspiring, sobering, and funny, the essays relate key moments in diagnosis and treatment, as well as observations and realizations made along the way. “I feel honored to have been part of this program and have a chance to look into some of your personal moments,” said Dana Shaffer, Smilow’s art expression coordinator.

In her essay, Shadle, a research scientist at the Haskins Laboratories in New Haven, noted that oncotype scores that determine whether she’ll need chemotherapy and National Institutes of Health scores for grant applications share one characteristic—a low score is better. And in both cases a score over 31 is bad. “I saw my oncologist this morning, and she told me my score,” Shadle wrote. “It’s 34. A new era is starting.”

Judith Drew Mauzaka wrote of her yearning to take a vacation and “swim with sea turtles in the warm blue waters of the Caribbean” despite the risks involved. Mauzaka, who has since died, indeed made the trip.



Cancer patients and Smilow Cancer Hospital staff read stories about their experiences at a reading in October. “It ends up being a way to find ourselves,” said one writer.

Kathleen Miles Schumacher, a breast cancer survivor, described an elevator ride with a hospital employee who pretended he was an elevator operator. “Sixth floor! Menswear!” he called out. “Fifth floor! Cocktail lounge! Fourth floor! Baked goods!” That ride, Schumacher wrote, turned a car full of strangers into a temporary community, and the ride into “an interactive comedy club for a few brief minutes.” As she read her essay, Donald Macmillan, the hospital’s flight services coordinator who provides helicopter transportation for patients and the employee in her story, stood at her side barking out the floor announcements.

The writers’ program was founded in 2013 thanks to retired *New York Times* editor and reporter Charlotte Evans, Shaffer said. During her journalism career, Evans said, she felt her work was important to readers, but at a distance from them. In retirement, however, she sought a closer connection. “I thought it would be rewarding to try to help people one on one and get to know them as people,” she said.

The group meets every other week and typically includes four to six patients, Shaffer said. About 30 patients have taken part since its inception, she said.

The program is one of many run by Integrative Medicine at Smilow Cancer Hospital, including art, yoga, and meditation, to address cancer patients’ psychological and emotional needs. “These are all things that help you step back and put you more in tune with yourself,” she said.

The booklet is just the beginning, Shaffer said. She is already choosing essays for a second collection.

/yale medicine

Christopher Hoffman is a freelance writer in North Haven, Conn.

Art therapy: helping families cope with cancer

Displayed on the mantel of the Rodriguez home in Fairfield County is a large painting that members of the family of four created during an art therapy session at Smilow Cancer Hospital at Yale New Haven Health. The painting is of a tree with the family members' handprints as its leaves. "We wanted to create something we could display in our home as a daily reminder of our family," says Ann Rodriguez.

Reinforcing close bonds of love is especially important for the family right now. Ann's husband, Joe, has terminal stage 4 stomach cancer, and is no longer receiving treatment. (The family's real name has been changed to protect their identities.)

"This artwork reminds us every day that our lives will always be interwoven, no matter where we are," Ann Rodriguez says. "It's a reminder that we were once all together physically and will always be together in spirit."

At Smilow, art therapy is available to the children and families of people who are receiving palliative care. It's also available to the patients themselves.

The program is designed to help patients and their loved ones bond, as well as cope with fear and grief. Using tools and media including pencils, pastels, markers, acrylic paint, collage, and clay, art therapist Elizabeth J. Ferguson, M.A., helps patients and their families express their feelings. "The reality is that no one is dealing with their illness alone," Ferguson says. "Every single person in the family has to deal with this illness for a long time to come."

Engaging in artwork can also offer patients and their children a welcome distraction. "Art therapy gives children of palliative care patients something fun and productive to do when doctors are talking to their adult family members," says Ferguson.

Physicians at Smilow welcome the art therapy program. "The palliative care team comes in to collaborate with the oncologist and be there to support the patient and family as they cope with their cancer. Art therapy is a key part of this interdisciplinary support, allowing us to fully care for the person rather than a patient with a disease," says Jennifer M. Kapo, M.D., associate professor of medicine (geriatrics), and chief of palliative care at Yale Medicine Cancer Center.

The art therapy program was created thanks to

a donation from Christine Moog, a book designer who teaches at the Parsons School of Design in Manhattan. Moog is a Yale University graduate who believes in the therapeutic value of art. Her father died from cancer, and once she became a parent, she wanted to help create a support system for other families struggling with cancer.

"There is a kind of release in nondirected art therapy," Moog says. "Letting the inside of one's thoughts and feelings be on the outside on paper or in clay provides a way of working through issues that can be too painful or too deep to access otherwise."

Programs like this are vital, she says, because most cancer funding goes to research, and families experience psychological and social issues as they say goodbye to a loved one.

For the Rodriguez family, the art therapy program has been especially meaningful for their 8-year-old son, Joseph. "My daughter is 1, so she will not remember her father," says Ann Rodriguez. "My son says that he wants to inherit the canvas so he can always have it, but that he will share with his sister."

—Colleen Moriarty



The Rodriguez family placed their handprints on a painting for Joe, father and husband, who has terminal stomach cancer.

In the midst of an epidemic

An artist chronicles the time when AIDS was a death sentence

By Charlotte Evans



Starting in 1994, the artist and activist Sue Coe began drawing portraits of HIV-positive inmates in prisons in Texas. "Drawing allowed me to spend time with patients ... and they could tell me of their lives."

LEFT Women in a prison exercise yard, Texas City in 2006.

"People who didn't live through this can't appreciate how hopeless it was," said Susan Wheeler, curator of prints and drawings at the Cushing/Whitney Medical Library, referring to the early stages of the HIV/AIDS crisis. "AIDS was a death sentence. Everybody knew people who had died or were dying."

People suffering and dying from HIV/AIDS is the subject of "The AIDS Suite," HIV-Positive Women in Prison and Other Works," an exhibit of drawings that ran at the library from September through January 10. The drawings are the work of Sue Coe, an activist/artist who is represented in the permanent collections of the Metropolitan Museum of Art and the Museum of Modern Art. Coe spent time with patients at the University of Texas Medical Branch at

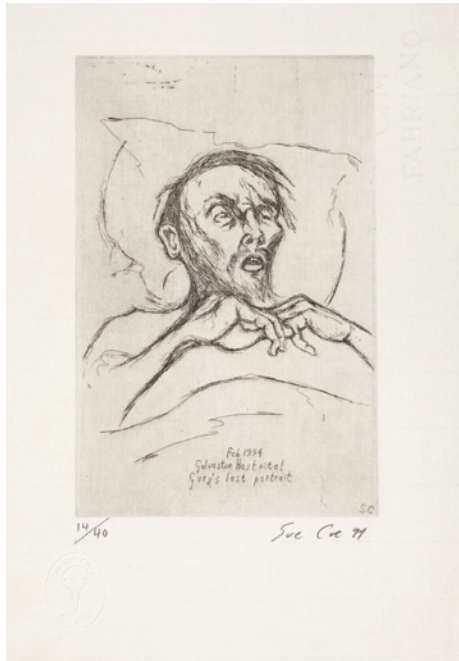
Galveston in 1994, and with infected inmates at a women's prison in nearby Texas City in 2006. The inmates served as "peer group educators," supporting new arrivals who were also afflicted.

Coe began the Galveston project, which was initiated by The Institute for the Medical Humanities, when fellow artist and psychiatrist

Eric Avery, M.D., invited her to visit the medical center's AIDS ward. "Drawing allowed me to spend time with patients, and they could see me draw and tell me of their lives," Coe wrote.

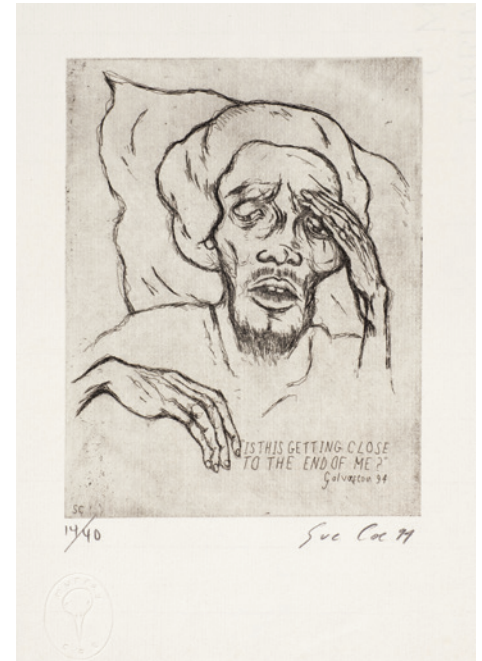
The purpose of the hospital project, Wheeler said, was to focus less on the patients than on the staff. "The safety measures were not in place at the time, so people were putting themselves at risk," she said, pointing out that AIDS was then the major cause of

Gary's last portrait



Thomas, in Galveston Hospital in January 1994. "My family didn't want me for Christmas," he told the artist. "They gave me paper plates and cups to eat off."

Louis in Galveston in 1994. "Is this getting close to the end for me?"



death for Americans between ages 25 and 44. "And all staff members were volunteers."

Two poster-size drawings in the exhibit include long paragraphs of text handwritten by the artist.

One of them, *Dr. Pollard Leads Ethics Rounds*, depicts Crystal, a 22-year-old white sex worker with late-stage HIV. The text reveals the debate among caregivers over whether to give her a morphine IV. Because she had refused treatment two weeks previously when she had been competent, her caregivers

decided "to rehydrate the patient and send her home," even though Crystal's mother wanted further treatment. A psychiatrist at the bedside noted, "It is hard for doctors to let their patients die."

The other work that includes a narrative is *Louis*. (*Notes from Doctors Meeting*). Shown wild-eyed and tied to his bed, he is described as black, gay, 35 years of age, with late-stage AIDS. He is incoherent, with renal insufficiency, and has had AIDS for between four and five years. His father has arrived, but Louis doesn't recognize him. The doctors want to send Louis to hospice, but his family is not cooperating: "Family denies

he is gay and has AIDS. They want more aggressive treatment for cancer."

As Wheeler put it, "People didn't accept that their kids were gay."

The large drawings first appeared in *The Village Voice* and were acquired by the library in 2015.

Wheeler said she hoped that the works—which can be seen by request after the exhibit closes—will be used in teaching. Everyone she has shown through the exhibit has been visibly affected, she said.

Among them is Anna Reisman, M.D., associate professor of medicine and director of Yale's Program for Humanities in Medicine. The images remind her of the patients she cared for during her training at New York's Bellevue Hospital Center in the mid-1990s, Reisman said, "when it seemed like every single hospital patient was a young person dying of AIDS."

Seeing the drawings for the first time, Reisman said, "I remember being on the verge of tears. I've always found it difficult to describe to students and trainees what it was like to work in the midst of the epidemic. Sue Coe's drawings say it all, and more."



From English lit to gene expression in neurons

How two years in Africa steered Kelsey Martin, Ph.D. '91, M.D. '92, from a career in literature to a life studying molecular connections in the brain

In July, Kelsey C. Martin, Ph.D. '91, M.D. '92, a molecular biologist who's been on the UCLA faculty since 1999, was named dean of the David Geffen School of Medicine there. Martin, already a respected researcher, joins an even more elite group: a 2013-2014 study by the Association of American Medical Colleges found that only 16 percent of medical school deanships are held by women.

(We had to ask: Does she get Dean Martin jokes? "Oh, I get them all the time. The really funny thing is, I've never seen a Dean Martin movie in my life.")

In her lab, Martin studies the ways in which experience changes connections in the brain at a molecular level, particularly at the synapses—an understanding she calls "unbelievably important to psychiatric disease," such as post-traumatic stress disorder.

"We need to understand at a very detailed molecular level

what's happening if we're going to be able to intervene," Martin said.

She recently unraveled some of the workings in an RNA-binding protein that affects gene expression in neurons: mutations in that same protein have been observed in autism spectrum disorders.

Martin's research career has included over 75 peer-reviewed publications, election to the American Academy of Arts and Sciences, a position on the editorial board of *Cell*, and continuous NIH funding since 1999.

The child of a University of Washington pathologist who *really* liked sabbaticals, Martin and her three brothers grew up in Seattle, Scotland, Mexico, and France. Back in the United States, she entered Radcliffe in 1975 as an English major. "I really love reading and writing," she said, "and I was turned off by pre-med culture."

But a stint in the Peace Corps in Zaire (now the Democratic Republic of the Congo) from 1980 to 1982 changed Martin's outlook. She and her colleagues organized a vaccination

campaign—recruiting rural bar owners to store the vaccines in their gasoline-powered refrigerators. That fall, measles didn't make its usual arrival. Children who would have died kept playing.

"That blew my mind," Martin said. "I realized how impactful biomedical discoveries and medicine were in terms of changing the quality of life and saving people's lives." She decided to go to medical school.

In 1985, after an editing job at the Harvard Institute for International Development, she became a technician in the Yale lab of molecular virologist and pediatrician I. George Miller Jr., M.D. The lab was studying HIV in children. In an era before translational medicine, its clinician-researchers knew that their basic science queries deeply mattered in the real world.

"Even though my dad is a scientist, I didn't quite realize



A two-year tour in the Peace Corps in Africa, where she worked on a vaccination campaign, convinced Kelsey Martin to attend medical school. Now she is the dean of one of the country's leading medical schools.

how creative and communal biomedical research was,” she recalled. “It was very much a community of students and postdocs and faculty and staff working together on problems. I discovered that I loved being in the lab.”

Martin entered the M.D./Ph.D. Program at Yale in 1986. For her Ph.D., she studied the cell biology of influenza virus under the mentorship of Ari Helenius, Ph.D. After graduation, she chose neurobiology because of the nervous system's relative opacity compared with other organ systems. She did a postdoc at Columbia, and as her family grew—she had her first child while a third-year medical student—she pursued a nonclinical

research career. (Her husband, Joel Braslow, also an M.D./Ph.D., is also on the faculty at UCLA, in psychiatry and history.)

Martin's two children and two stepchildren are now in their twenties. That's gotten her thinking.

“I have spent most of my professional life balancing family and work—and what's so interesting to me is to get to this stage of my life where my children are grown up and I'm still really energetic,” Martin said. “I have a lot of time. I never imagined that.”

But her experience raising a family as a young scientist in the academy, fending off naysayers, and reliant on good day care, has helped inform her strategic vision for UCLA's medical school.

“I was very focused on doing what I wanted to do and what I was interested in, so I never really felt limited in any way,” Martin said. “On the other hand, in my position now, I am profoundly aware of how limited the perspective of most academic medical centers is because of a general lack of diversity.”

In most such centers, a highly diverse graduate- and medical-student population gives way to one that is far less so at the faculty and administrative leadership level. And yet things



ONLINE EXCLUSIVE

At Medical Student Council in October, a surgeon from Syria described life under siege in Aleppo as government forces bombard the city. Medical personnel are specifically targeted, yet continue to treat patients and train medical students.

Full stories and event photo galleries, as well as other online-only content, can be found on our home page at yalemedicine.yale.edu.

like a six-month parental leave or funds to cover a babysitter at conferences can make a huge difference in keeping people in science, she pointed out.

“I was told frequently, ‘You can’t be a great scientist if you’re gonna have kids,’” she said.

“We need to work on structural ways of making it easier for all different types of individuals to be successful.”

—*Jenny Blair*



Through writing, a psychologist extends her reach

In the summer of 2000, Joan M. Cook, Ph.D., her degree in clinical psychology just a year old, rounded up 15 of her oldest, most vulnerable patients in San José, Calif.—former prisoners of war who had survived German and Japanese prison camps during World War II. She put them in a van and drove north.

“They had waited for years to get services for PTSD, and they had experienced horrific things. My patients told me that in the camps, the [Japanese] beheaded prisoners who tried to escape and put their heads on the fence post to deter others from doing the same. My patients saw this,” said Cook, an associate professor of psychiatry.

Tired of watching her patients wait for disability compensation for their PTSD, she drove them that day to the Oakland Veterans Administration (VA) Regional

Benefit Office, where their claims were processed.

Before marriage and children, Cook felt freer to engage in this sort of advocacy. Today, the trauma specialist sees fewer patients—most are in a VA residential PTSD program—but by all measures, her reach is far greater. Since October, Cook has published 23 op-eds in *TIME*, *Ms.* magazine, *USA Today*, and on *CNN*. Written during Cook’s tenure as a Public Voices Fellow in The OpEd Project, the pieces look at contemporary atrocities—terrorism, mass shootings, campus rapes, sexual abuse in the Catholic Church, police brutality—through the lens of trauma psychology. “With all this horrible stuff happening in the world, I’m trying to help people tap into their resiliency and hopefulness,” Cook said.

While her field emphasizes publication in peer-reviewed academic journals, Cook wanted to reach those who could benefit from a psychologist’s perspective. Several years ago, she started writing for lay readers and sending unsolicited pieces to *The New York Times* and *The Washington Post*. Her queries met with frustrating silence. That’s when a friend told her about The OpEd Project.

Founded in 2008, the nationwide project aims to give voice to underrepresented thought leaders, particularly women. Each year the Women Faculty Forum at Yale sponsors 20 faculty members who work with

journalist mentors who help them craft and publish opinion pieces. More than three dozen faculty members in medicine, nursing, and public health at Yale have participated in the program since 2011.

When she got the fellowship for the 2015-2016 academic year, Cook said, “I felt like the stars had aligned for me. I had always wanted to do this, and here were people saying they were going to help me do it.”

Of her published pieces, one stands out most for her—an essay printed in *Pacific Standard* last February titled, “From ‘Spotlight’ to Academic Conferences: How Can We Better Serve Male Survivors?” As the president of the American Psychological Association’s (APA) Division of Trauma Psychology, Cook had attempted to organize a presentation on male sexual abuse for APA’s annual conference. But she couldn’t find another division to co-sponsor the presentation. For Cook, this was confirmation of stigma and taboo surrounding male sexual abuse that extended even to health professionals. Taking to the page, she tied the piece to the film *Spotlight*, about *The Boston Globe* reporters who broke the story of the nearly 90 priests who had abused children, mostly boys.

Calling on churches and health care providers alike not to turn their backs on male survivors, Cook writes, “We need institutional support so more men can come forward and



receive the attention and care they need and deserve.”

After the essay was published, Walter V. Robinson, *The Boston Globe* investigative reporter who led the coverage of the scandal, sent her an email. “He said, ‘Your *Pacific Standard* piece came into my inbox. It was excellent and illuminating.’” Cook, who printed and framed Robinson’s email, was over the moon to receive this type of

feedback from the man who put the issue on the map.

Cook continues to chase research funding and publication in peer-reviewed journals. And when her kids—a 9-year-old girl and 4-year-old twin boys—are a little older, she’ll take on more

patients (though she probably won’t shuttle them to the VA in a rented van). But writing for the public fulfills a need that other professional activities do not. “I feel very constrained by what I can say in academic writing. With the op-eds, I can have an opinion; I can extrapolate from the data, use my clinical experience and my intuition. I feel like someone’s freed me.”

—Sonya Collins

Since Joan Cook participated in The OpEd Project, she has published more than 20 articles in publications around the country. She continues to work with veterans with PTSD.

Robert Rock, art, justice, and medicine

ONE AFTERNOON THIS PAST AUTUMN, Robert Rock took a group of first-year medical students to the Yale University Art Gallery (YUAG), showed them a painting, and asked them what they saw. The students, all of whom were in their first days of medical school and were taking the two-week “Introduction to the Profession” course, stared at Paul Gauguin’s *Whispered Words*.

One student described a dog accompanying a group of women. “Be careful of jumping to conclusions! Do we know it’s a dog and those people are women?” Rock said. “Show me your data.” The student revised her comments. “An animal that appears to be domesticated is lying on the ground near a group of people.”

Rock, in his fourth year of medical school, wanted his tour group to examine the art with clinical objectivity—the same way physicians examine patients to form a diagnosis. This exercise asked students to override a natural tendency to make assumptions. On a deeper level, Rock said, students might understand how those assumptions may be based on biases that persist in society.

Over the past two years, Rock, a native of Queens, N.Y., who majored in art history at New York University, has conducted this three-hour tour for medical students and alumni at least 12 times. “When I was a first-year medical student, I had no idea that I was going to use art in medicine,” said Rock. But a fascination with art, growing up in

a family of Haitian immigrants, and natural leadership have led to Rock’s involvement with art and social awareness projects.

As a second-year student, he and classmate Tehreem Rehman, M.P.H., created an elective course, “U.S. Health Justice,” to bring educational content about domestic health disparities into the school’s curriculum. This past fall, he and second-year student Nientara Anderson curated an exhibition in the Levin Study Gallery of the YUAG called “Violence, Visibility, and Hierarchies of Power.” In addition to the curated works in the fourth-floor study gallery, they have organized a series of events given by public health and health justice experts and co-sponsored by YUAG and the medical school.

Yale Medicine caught up with Rock, who will graduate in 2018 after an extra year of research, to talk about art and medicine.

What is your favorite piece of art? That’s an impossible question. There are too many to name—too many have affected me in so many different ways. My favorite painting at the art gallery is *Untitled* by Kerry James Marshall. He’s a genius in the way he co-opts visual tradition and makes some very strong statements about power and identity, and who gets to tell the story. Some people say a picture’s worth a thousand words. This painting is a dissertation. It’s incredibly rich.

How did your art tours start?

When I first came to Yale, I’d find myself in the art museum more often than not—it is my favorite place on campus. One semester, my classmates who were organizing Second Look Weekend asked me to give a tour to prospective students. I took them to see *Untitled* and was blown away by how effectively it created a space to have powerful, difficult conversations with strangers. The art tour is really about letting artists have their say in things they really care about.

What led you to medicine?

When I was in high school, my grand-aunt, the matriarch of the family, was diagnosed with uterine cancer. She was originally from Haiti. She lived in this country for about 20 years and never learned to speak English. She never trusted Western medicine. Between the language barrier and the cultural barrier, and just feeling like she wasn’t in control, she decided to forego care, and I watched her die slowly over six months. At her funeral, I thought, “I’m smart enough to know the science and information of medicine—but I care enough to do it better.”

How does art make for better doctors? The subjectivity of human interaction influences everything we do in medicine. In our medical education, we often interact with a standardized patient. But “textbook conditions” can present in very different ways because of a patient’s lived experience. Recreating a circumstance in the classroom that might prompt a student’s strong emotion or bias can be challenging. Art creates a space for this and allows exploration.

Why did you decide to come to Yale for medical school? The Yale system of education allows students to take control of their education and make it their own. I took advantage of this to pursue my interests in social medicine and health justice. Right now I’ve just finished my third-year clerkships, and I’m taking a research year to study medical education for my thesis.

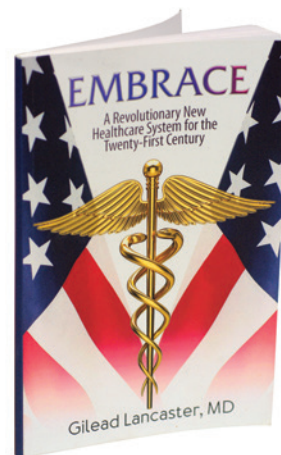
You’ve conducted a dozen in-depth observational art tours—what do you hope that students and others get from them? I want people to question everything. Look for alternate narratives, look for what is missing, and ask, “Whom is this for?” In terms of where I’d like for these tours to go, I’m really interested in making a safe space for people to talk about things. It is not necessarily a comfortable space, but a safe space. Whether we are using art, music, or theatre, I think it’s very important to explore the things about us that may be at odds with our desire to provide just care.



watch a short interview
with Robert Rock at [yale-
medicine.yale.edu/rock](https://yale-medicine.yale.edu/rock)

An alternative to the Affordable Care Act

By Cathy Shufro



The Affordable Care Act (ACA) did not reform health care, argues cardiologist Gilead Lancaster, M.D., associate clinical professor of medicine and of nursing at Yale. It reformed insurance coverage.

In his new book, *EMBRACE: A Revolutionary New Healthcare System for the Twenty-First Century*, Lancaster lays out a plan that would transform not only how Americans pay for health care but also how the nation sets clinical guidelines and funds research. Under Lancaster's plan, politicians and lobbyists would lose much of their influence over the system. (EMBRACE stands for "expanding medical and behavioral resources with access to care for everyone.")

Lancaster calls his proposal "uniquely American" in that it combines government funding and private insurance. Like a single-payer system, it would use tax revenues to pay for care, but only when illness or injury could threaten or shorten a patient's life. But unlike in a single-payer system, private insurers would continue to

play an important role by managing less critical care. Insurance would be cheaper than it is now, Lancaster said, as insurers would not need to cover the most serious health problems.

He says that under the plan, taxes would not increase and private insurers would finance 40 to 50 percent of total costs and would continue to profit. The book compares funding, oversight, and costs of his proposal with those of the current system and of single-payer systems.

In light of Donald Trump's election and efforts to repeal the ACA, Lancaster said, his plan might be a viable alternative. It offers many tenets supported by Republicans—abolishing Medicare and Medicaid; removing requirements that businesses provide health insurance, and promoting "personal responsibility" for certain services. Some services would also be available between states, an idea proposed by Trump.

Lancaster's plan would also abolish such federal health care agencies as the Department of Health and Human Services, the Veterans Administration, and the Food and Drug Administration. The new system would replace them with a National Medical Board.

That board would oversee medical care and research. Congress would provide funding, but the board would control its budget and decisions. The board's independence, Lancaster said, "should reduce a great deal of the politicization of health care."

Lancaster was motivated by increasing insurance company control over health care, unfunded mandates, and the burden of paperwork. "It became harder and harder to practice individualized, evidence-based medicine," he said. According to a 2014 estimate he cites in the book, it costs \$58 to process insurance forms for a single visit to a primary care doctor.

Lancaster introduced his plan in a 2009 article in the *Annals of Internal Medicine*

that he co-wrote with Yale colleagues Kimberly Ann Yonkers, M.D., professor of psychiatry, of epidemiology, and of obstetrics, gynecology, and reproductive sciences; and David L. Katz, M.D., M.P.H. '93, a clinical instructor in internal medicine. He called the subsequent ACA "a relatively minor 'fix' to an archaic and hopelessly dysfunctional system ... There is not a vision of what we are trying to accomplish."

Lancaster knows that getting traction for the proposal is a long shot, but he has teamed up with 50 physicians, nurses, physician associates, politicians, and business people to promote it.

"The best way to explain EMBRACE is that it is a single-system health care system," Lancaster said. "That differentiates it from a single-payer system and emphasizes its most important feature—unifying and simplifying our highly chaotic health care system."

The book is available on Amazon.

iANDA! Walk and Run raises more than \$25,000

MORE THAN 230 RUNNERS AND WALKERS braved drizzle and chilly temperatures to take part in the third annual iANDA! 5K walk and run to raise money for the HAVEN Free Clinic in the city's Fair Haven neighborhood. Staffed and run by more than 400 Yale student volunteers—everyone from medical students to undergraduates—the clinic provides free medical care and other services to the neighborhood's uninsured residents.

—Christopher Hoffman