

Tufts

Medicine



AHOY!

How this boat helped change
the course of pediatric medicine



NATURE GUIDE

Some guys retire to Florida and spend their days watching the sun drop into the ocean beyond the palm trees. David Cooper, '56, is cut from different cloth. He slaps on his hat and ducks out the door, making the rounds of a nearby 60,000-acre nature preserve and taking careful stock of “botany, snakes, birds, butterflies—everything that’s out there.” Cooper, a former neurosurgeon from upstate New York, lives in a condo near Ft. Myers and volunteers his time leading public trail hikes through the marsh several times a month.

“I had 14 people out there this morning for three hours in the field,” he relates. “Yesterday I went for a four-mile walk.” That’s a pretty fit daily regimen for a man who’s 83 years old, but Cooper sees the trekking around as no big deal—something like the way he describes his overall passion for the natural world. “For many years, I’ve been interested in birds,” he suggests, with a kind of verbal shrug. “One thing leads to another.” These days he’s a Certified Florida Naturalist, the perfect embodiment of a savvy, approachable and entertaining guide.

Widowed from Sandra, his beloved wife of 50-plus years, and still adapting to life alone (“I prefer company,” he offers when asked how things are going), Cooper has remade himself at a southern latitude. “This is a second career, and I love it immensely—almost as much as practicing medicine,” he says.

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Cover image courtesy of the Digital Collections and Archives, Tufts University



THE OTHER SIDE

I am writing in response to your feature on Louis Weinstein (“The Boss Who Barked,” Summer 2014). I was fortunate enough to have taken his infectious disease rotation when I was a medical student, and greatly enjoyed the article.

I have a story to share that is in contrast to his famously brusque and preemptory manner. After I left Tufts for residency, I mentioned in passing at a party that I had especially enjoyed Dr. Weinstein’s teaching. One of the women there had been his patient at New England Medical Center as a teenager. She had developed Guillain-Barré syndrome and was on a respirator. The woman said that during the time she was intubated, he would return to the ward late at night just to sit at her bedside and hold her hand.

I know this seems inconsistent with his usual manner, but there was a side to this inspiring teacher and physician we never saw.

WALTER J. ALT, '75

AMESBURY, MASSACHUSETTS

A TASTY SWAP

As a longtime reader of *Tufts Medicine*, I’m used to fine writing and good articles, but the one in the last issue by Miranda Rogers, on her lobsterman family (“Dockside Medicine,” Winter 2014), touched me in particular. She writes from the heart, and in a few words brings to life what her people must endure to make a living. And then she tells us what she proposes to do to make their lives better. Having only been a consumer of the products of their labor, I will now keep in mind what goes into bringing that lobster to my plate.

The article evoked my recollection of a brief encounter I had with a lobsterman. Vacationing with my family on one of the Maine islands many years ago, we had rented a cottage near that of a local fisherman. I was into wild mushrooming (and still am) and found that the island was covered with

delicious chanterelles. My neighbor didn’t know about them, and after he tasted them, swapped some nice lobsters for my haul of mushrooms.

Thank you, Miranda, for enhancing my awareness of your folks and for a good memory.

MOSELIO SCHAECHTER, PH.D.

PROFESSOR EMERITUS (1962 TO 1995)

DEPARTMENT OF MOLECULAR BIOLOGY

AND MICROBIOLOGY

SAN DIEGO, CALIFORNIA

LESSONS LEARNED

I really enjoyed your article about Herb Levine (“Old-School Doc,” Winter 2014). I had the good fortune to learn from him and some of the other gems of cardiology at Tufts in the early 1970s. Folks like Herb Levine, “Chris” Criscitiello, Shapur Naimi and Bernie Kosowsky (at St. Elizabeth’s) were instrumental in directing me to the field of cardiology.

I not only learned cardiology from them but also how to be a good teacher. I have earned a few teaching awards at the University of Connecticut School of Medicine, where I have spent the last 32 years as the cardiology fellowship director. Thanks for the memories.

PETER SCHULMAN, '74

PROFESSOR OF MEDICINE

UNIVERSITY OF CONNECTICUT

SCHOOL OF MEDICINE

FARMINGTON, CONNECTICUT

TALK TO US

Tufts Medicine welcomes letters and suggestions from all its readers.

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RETURN TO CHINA



IN MY COLUMN recounting Tufts Medical School's first exploratory trip to China (*Tufts Medicine*, Summer 2014), I noted that we were making the trip out of a sincere and long-standing sense of mutual interest between their medical system and our own.

The rapid transformation that is surging through China, driven by a booming economy, presents countless opportunities for new affiliations and opportunities for our school. We can't ignore the moment. Accordingly, on our second trip over three weeks this past January, our team followed up on some initial contacts we made last time around and also branched out in one or two new directions.

We managed to ink two deals. The first involves a shared interest we have with National Yang Ming University, one of the most respected universities in Taiwan. They seek to offer their M.D. students an opportunity to study biomedical science in the United States and are interested in partnering with Tufts so their students can pause their M.D. degree and come to the Sackler School to complete a Ph.D.

Right now, Tufts' M.D./Ph.D. program ranks among the smallest such programs in the United States. Through our new deal with Yang Ming, they will send us a group of their highest-achieving students who desire to become physician-scientists. They will earn their M.D. degree from Yang Ming in Taiwan, and their Ph.D. here at the Sackler School. For our part, we gain more substantial numbers in our M.D./Ph.D. program.

Another success on our trip was an agreement we signed with Chang Gung Memorial Hospital, the largest private health-care system in Taiwan. Through

their health system, Chang Gung will offer an introductory course on traditional Chinese medicine and acupuncture to our students, who will be able to take it as an elective in Taiwan.

I can't conclude without mentioning the exciting prospects of a proposal we discussed with officials at the University of Macau, a thriving public institution located about one hour by high-speed boat from Hong Kong.

Macau is a premium university of about 8,000 students, and they have plenty of money behind them, stemming from the colony's rich gambling revenues. Now the university leaders have recognized one of Macau's most imminent challenges to becoming a world-class city lies in its health-care delivery standards. This implies that adding a medical school to their campus, sometime in the future, seems inevitable. Tufts stands ready to advise them on this journey.

This new affiliation offers some tantalizing prospects. Our faculty may be able to travel to Macau as visiting professors, or perhaps serve as consultants, for example. Government-funded research there is also a possibility.

For now, we have sent two Tufts representatives to engage with leaders at the University of Macau to cultivate our relationship. Dong Kong, a Chinese native and Tufts neuroscience faculty member (see story, page 11), visited Macau this spring to explore that university's collaborative options with Tufts in neuroscience. And Mary Lee, '83, former associate provost at Tufts, visited Macau a week later on our behalf to advise their administration on what is needed to build a first-rate medical program and earn international accreditation.

Potential benefits from all these endeavors in China are yet to materialize, of course. But one thing is obvious—you can't do this important work long-distance. It makes a difference that we are there.

A handwritten signature in black ink that reads "Harris A. Berman".

HARRIS A. BERMAN, M.D.
Dean, Tufts University School of Medicine



Spin Doctors

Hospital websites give unbalanced medical information, study finds through a systematic survey of 262 examples

SEeking medical information online has become something of a reflex for consumers. In fact, one recent study estimates that about three-quarters of all Americans turn to the Internet for such data over the course of a year.

Hospital websites play a natural role in this mix. But just how reliable is the information they provide to consumers? Maciah Kincaid, M.D./M.P.H. '15, working with researchers at the University of Pennsylvania's Perelman School of Medicine, reviewed the websites of 262 U.S. hospitals that were promoting a relatively new procedure called transcatheter aortic valve replacement, or TAVR, as a test case to see how well the sites presented the benefits and risks of the procedure.

The study was published in *JAMA Internal Medicine* in January.

Findings showed an overwhelmingly positive spin. Almost all—99.2 percent of the websites—described at least one benefit of TAVR compared with the traditional surgical aortic-valve replacement. Most commonly cited benefits were TAVR's lower degree of invasiveness (mentioned on 95 percent of the sites), the potential for faster recovery (48 percent) and the potential for a better quality of life (45 percent).

In contrast, just 26 percent of hospital websites mentioned even a single risk associated with the procedure, such as stroke. Further, a magnitude of benefits was quantified on 37 percent of hospital websites, while a magnitude of risks appeared on less than 5 percent of sites.

Kincaid took heart in knowing that few people get their medical counsel solely from online sources. "Patients will often receive information from a multitude of sources, including a face-to-face discussion with their physician," she notes.

In a commentary that accompanied the study, two bioethicists—Yael Schenker from the University of Pittsburgh and Alex John London at Carnegie Mellon University—observed that hospital websites function in part as a medium for advertisements.

"Patients may assume that the content on these websites is informational, not persuasive," they write. "Patients who are referred to such pages to learn about a procedure may not be aware that they are consuming promotional materials rather than impartial educational resources."

Schenker and London go on to say: "Poor-quality medical information is hard to recognize unless the person reading it is a clinician."

“After work, when it’s cold, dark and wintry in New England, it’s fun to go to the gym and see friends. You can climb with a small group or go by yourself and boulder.”

Emily Cole, '16, quoted in a February 1 *Boston Globe* feature on the popularity of climbing gyms around the city

A SMARTER DIET

Every five years, the U.S. departments of Agriculture and Health and Human Services put out a report designed to educate the American public on how to eat better for the sake of their health, and also help guide the federal nutrition policy and programs, which include \$16 billion earmarked for the nation’s school lunch program.

The 2015 Dietary Guidelines Advisory Committee report, released in February, has kicked up more resistance than usual as it recommends a diet less reliant on red meat and sugar and more inclusive of plant-based foods. Panelists included Alice Lichtenstein, the Stanley N. Gershoff Professor of Nutrition Science and Policy at the Friedman School, as vice chair.

“No matter which way you look at it, [the American diet] is so not healthy and really just unsustainable,” panel member Miriam Nelson, professor at the Friedman School and in the Department of Public Health and Community Medicine, declared at a meeting last summer and quoted in *Politico*.

The committee consulted studies that found 65 percent of American women and 70 percent of men are overweight or obese. Sodium, saturated fats and added sugars consumed on a regular basis were among the main contributing factors.

“Higher intake of red and processed meats was identified as detrimental compared to lower intake,” the report went on, tying these foods directly to an increased risk of colon cancer and type 2 diabetes. The last report, in 2010, was more equivocal in tone, merely advising Americans to eat meat in moderation.



STROKE CONSULTS VIA VIDEO

People showing symptoms of a stroke without a neurologist near at hand to make the diagnosis, including those at community hospitals, can be in real trouble. Without specialized training in the field, it can be tough for doctors to tell whether a patient has suffered a stroke or is experiencing another problem with similar symptoms.

Time is critical in these cases, but there is no simple diagnostic test for a stroke. “The diagnosis is made only in the mind of the doctor,”



DAVID THALER, neurologist-in-chief at Tufts Medical Center, told the *Boston Business*

Journal. “That’s been the problem, getting neurologist expertise to the bedside so minutes don’t tick by.”

Now, for the first time, Tufts has begun making its neurology expertise available through a videoconferencing connection to a network of community hospitals to assist doctors in proper diagnosis and treatment of neurological cases. Through the arrangement, Tufts Medical School neurologists, including those based at Tufts Medical Center, can lend their help as needed.

Meet the Class of 2018

APPLICANT POOL
Total applications **11,507**

Applicants interviewed..... **948**
 Admitted..... **515**
 Enrolled..... **200**

PROGRAM ENROLLMENT

Traditional M.D.	163
M.D./M.P.H.	19
M.D./M.B.A.	13
M.D./Ph.D.	5

GRADES AND SCORES
Mean total GPA **3.67**
 Mean science GPA..... **3.61**

HOME COLLEGES AND UNIVERSITIES
 (5 or more students) **24**

Tufts	8
Brandeis	8
Maine	6
Boston College	5
Holy Cross	5
Cornell	5
Harvard	5

WHERE THEY'RE FROM
63

Massachusetts	38
Other New England state	38
New York	18
New Jersey	12
California	19
Other	50

GENDER

Male	91
Female	109

The “OW” Factor



WHY IS IT that we instinctively cry “ouch” or “ow” the moment we stub a toe or bang a finger? The answer may lie in research conducted at the National University of Singapore, with results published in the *Journal of Pain* earlier this year.

Researchers asked each of 56 test participants to submerge his or her hand in painfully cold water four times. Participants were given a choice of four responses: say “ow,” push a button, listen to a recording of someone saying “ow” or stay passive and silent. Those participants who said “ow” and those who pushed a button were able


to withstand pain better than those who made other choices—an average of 30 seconds versus 23 seconds.

The researchers theorized that the advantage may have stemmed from the way that muscle movements used to exclaim or push a button disrupted pain messages. Daniel Carr, director of the Pain Research, Education and Policy program at Tufts, agrees. He was quoted in the *Huffington Post* about the experiment, which he described as “a legitimate finding and a well-designed study.” When you move, you can’t help but be aware of what you’re doing, he suggested, and “that awareness interferes to some degree with the awareness of the pain.”

THE NOTHING-NEW DEPARTMENT

“This is an age of science. With the multiplicity of new methods of diagnosis and treatment that are constantly being presented in the field of medicine, there is a decided tendency toward specialization, which may lead to certain evils. In employing laboratory methods of diagnosis, so much attention is given to the results obtained by instruments of precision that the patient is ignored.

“Here is where the old-time general practitioner excelled. He knew his patients intimately—he lived in their community—he realized their problems—he understood them—he took care of them. He did not depend upon involved laboratory tests or complicated instruments to make clear the diagnostic signs and symptoms. He was trained to observe the patient, to detect the conditions incident to the disease with his five unaided senses. He saw the case as a patient—and that is the attitude that should be restored today.”

 An excerpt from Davis Thayer Gallison’s student valedictory address, given at Tufts Medical School on June 16, 1924.



In retirement, Stollar has told the story of one man who was emblematic of many.

their arrival. The group included arthritis expert Heinrich Brugsch, radiological innovator Alice Ettinger and cardiologist Heinz Magendantz, among others.

Born to Jewish parents who left Eastern Europe for provincial Canada in the 1920s, Stollar brought a special sympathy to his authorship. The book represents something more than a personal quest, however. “I think it is important for the current generation to know where we came from,” he says.

At Tufts, Schmidt earned fame as a world authority on nucleic acids and phospholipids. He was elected to the National Academy of Sciences in 1973. Schmidt had been recruited to Tufts by Siegfried Thannhauser, another Jewish émigré giant of German medicine, who worked with Schmidt to make a groundbreaking discovery on the development of nucleic acid metabolism, including a new method for determining DNA and RNA in tissues that found wide use in molecular biology research.

The dramatic core of Stollar’s book concerns the rapidly deteriorating environment for Jewish scientists in Germany in the early 1930s. There was no single thunderclap of warning; rather, the personal danger came more like a rumbling in the distance that grew nearer by the day. A terrible irony ruled the moment. These Jewish scientists were at the top of the world, in effect, but a suffocating atmosphere of rumor, suspicion and betrayal threatened to take everything away.

“The question that keeps coming up in the book is: How do you know when it’s time to leave?” Stollar says. Schmidt was lucky enough to get out, secure a position at Tufts and pursue the most sustained, productive work of his career.

In 1981, the year of his death, Tufts Medical School established the Gerhard Schmidt Memorial Lectureship in his honor.

NICK OF TIME

David Stollar’s colleague escaped Nazi Germany for a better life

WHEN DAVID STOLLAR retired as a professor of biochemistry in 2005 after 41 years on the job, including 17 as department chair, he had a box of dusty cassettes on his mind. The cassettes, recorded in the early 1970s by colleague Morris Cynkin, contained 40 or 50 hours of reminiscences from Gerhard Schmidt, the eminent Jewish biochemist who had fled Germany amid darkening clouds in 1933 and eventually made his way via Italy, Sweden, Canada, New York and St. Louis to Tufts School

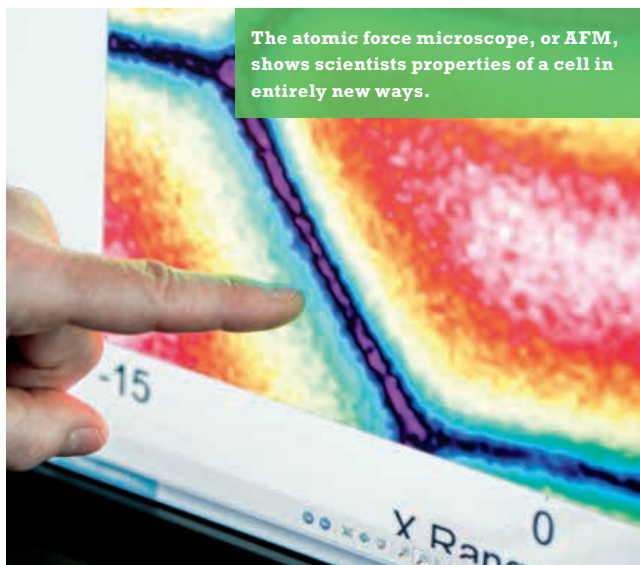
In a new book, retired professor evokes a dark period in world history, when the storm clouds of Nazi Germany threatened the lives of many scientists.

of Medicine in 1940.

Stollar felt this was a story worth telling, and his recently published book, *Out of Nazi Germany in Time, a Gift to American Science: Gerhard Schmidt, Biochemist* (American Philosophical

Society Press, 2014), charts the details. Schmidt was but one of a number of Jews who escaped Germany and found a home at Tufts in the 1930s and 1940s, effectively raising the level of science and medicine upon

Research



The atomic force microscope, or AFM, shows scientists properties of a cell in entirely new ways.

NANOSCALE CANCER

Igor Sokolov's research could yield better ways to identify and track malignant cells early on

BY JACQUELINE MITCHELL

AS A YOUNG physicist in the former Soviet Union, Igor Sokolov studied the biggest of the big—the entire universe. Now, as a professor of mechanical engineering at Tufts, he's focused on the tiny, the nano. By zooming in—way, way in—Sokolov and his colleagues study everything from bacteria to beetles down to the nanoscale level. Now he's turned a fresh eye on one of medicine's oldest problems: cancer.

Sokolov's instrument of choice is the atomic force microscope (AFM), which uses its minuscule fingerlike probe to measure

tiny forces at an extremely small scale, “pretty much between individual atoms,” he says. He first came across this technology as a graduate student studying the origins of the universe more than 20 years ago, about the time the AFM was invented. He used it to look for evidence of theoretical elementary particles. When Sokolov didn't find any, his work helped put those ideas to bed.

Soon Sokolov turned the instrument toward more earthly concerns. By 1994, as a member of the microbiology department at the University of Toronto, he was among the first to

use AFM to study bacteria. Zooming in on a probiotic bacterium used to make Swiss cheese, Sokolov revealed a never-before-documented process by which the cell repairs its surface after sustaining chemical damage.

The experiment also demonstrated the AFM's ability to detect mechanical changes in living cells at unprecedented resolution—something that would be useful in Sokolov's later work. “That was the beginning of my love of biomedical applications,” says Sokolov, who also has appointments in Tufts' departments of biomedical engineering and physics.

UP CLOSE

More recently, Sokolov and his colleagues have used atomic force microscopy on some of the most mysterious cells of all—malignant ones. Most existing diagnostic tools use the cells' chemical footprint to identify cancer. In a series of experiments over the last five years, he has looked for physical differences between cancer cells and healthy cells that could help physicians diagnose cancer earlier and more accurately. Early detection substantially increases patients' chances of survival.

He and his collaborators have had some promising results in preliminary studies using cervical and

bladder cancer cells—“cancers where you can harvest cells without biopsies—very uninvasive methods,” he points out.

In 2009, Sokolov and his colleagues at Clarkson University in New York studied healthy and diseased cells that were virtually identical, biochemically speaking. Searching for some physical or mechanical difference that could help distinguish the two types of cells, the researchers found that the surface coat surrounding cancer cells—what Sokolov calls the pericellular brush layer—was markedly different from that of the normal ones.

“That was definitely new,” he says.

The pericellular brush layer is something like a cell's fur coat, and it can resemble that of a Persian cat or that of a mangy mutt. It's in the density and size of this brush layer that the researchers found significant differences between cancer cells and healthy ones. In a 2009 paper published in *Nature Nanotechnology*, the team reported observing a relatively uniform brush layer in healthy cells, while in cancerous cells, they saw a two-tiered brush layer, with sparse long hairs and dense short bristles.

When the scientists dusted cell cultures with fluorescent particles, they could see—even with the

naked eye—that the particles had stuck to the cancerous cells, leaving glowing evidence of the disease.

THE FRACTAL TIME BOMB

That fact turned out to be more interesting than useful as a diagnostic tool, though. That's because the suspect cells have to be cultured in a dish—and scientists can already identify cancerous cells simply by watching them grow.

So Sokolov's team searched for other parameters that might alert pathologists to the presence of cancer. After testing many cellular characteristics, the researchers found one key variation, a trait called "fractal dimensionality."

Fractals are defined as "self-similar" patterns that look about the same at various scales. They occur often in nature. Think of a tree: The thinnest leaf-bearing twigs repeat the patterns of the broader branches below. They look about the same as you zoom in or out; you lose your sense of scale without another object to tip you off.

"Fractals typically occur in nature from chaotic behavior. Cancer has been associated with chaos as well. Therefore, many researchers predicted connection between cancer and fractals," Sokolov explains.

And when his team used the AFM to look at the surface of cells, the

researchers saw virtually a 100-percent difference in the fractal dimensionality of normal and cancer cells, a finding they reported in the journal *Physical Review Letters* in 2011.

Although the test has brought mortality rates down since its introduction, it has never been the subject of a randomized controlled trial—the gold standard of scientific research—and there are no universally accepted definitions of the test results, according to the National Cancer Institute.

The cancer research is one of several projects Sokolov and his two post-doctoral fellows, together with four graduate students—two mechanical engineers and two biomedical engineers—have underway in their labs on Tufts' Medford/Somerville campus.

The group, working together with collaborators from Tufts Medical Center, Dartmouth College and institutions all over Boston, is looking for other nanotech approaches to diagnosing cancer. They've already developed a high-resolution, high-speed test that could eventually lead to a new way to study changes in cells when they become malignant. Thinking more long-range, Sokolov floats the idea of a nanoparticle patrolling the body that can change color when it detects something bad.

LESS SALT, LIVE LONGER

Study finds too much sodium a worldwide killer
BY JULIE FLAHERTY

AMERICANS ARE NOT alone in their taste for salty foods. Whether the salt comes from french fries or miso soup, people all over the world are getting more than the current recommendations. And according to an analysis of global sodium intake published in the *New England Journal of Medicine*, that overabundance of salt accounts for more than 1.6 million cardiovascular-related deaths each year.

The researchers looked at existing data on sodium intake in 187 countries representing nearly three-quarters of the world's adult population.

Separately, they determined the effects of sodium on blood pressure and of blood pressure on cardiovascular diseases—including heart disease and stroke—by analyzing more than 100 previous clinical trials. These findings were combined with current rates of cardiovascular disease around the world to estimate the number of cardiovascular deaths attributable to taking in more than 2,000 mg of sodium per day, the World Health Organization's recommended amount.

In 2010, the average global sodium consumption was nearly double that recommendation—3,950 mg—the researchers found. In fact, all regions of the world were above recommended levels, with averages ranging from 2,180 mg per day in sub-Saharan Africa to 5,510 mg per day in Central Asia.

"These 1.65 million



deaths represent nearly one in 10 of all deaths from cardiovascular causes worldwide. No world region and few countries were spared,” said first and corresponding author Dariush Mozaffarian, dean of the Friedman School of Nutrition Science and Policy at Tufts, who led the research while at the Harvard School of Public Health. Some of the highest rates were in East Asia and Southeast Asia, where excess salt consumption accounted for more than 20 percent of cardiovascular deaths in people under age 70, the study found.

In the United States, the researchers found that nearly 58,000 cardiovascular deaths each year could be attributed to daily sodium consumption greater than 2,000 mg. The average U.S. sodium intake was 3,600 mg per day, 80 percent higher than the WHO’s recommendation and 57 percent higher than the 2,300 mg recommended by the *Dietary Guidelines for Americans*.

“These new findings inform the need for strong policies to reduce dietary sodium in the United States and across the world,” said Mozaffarian, who chairs the Global Burden of Diseases, Nutrition and Chronic Disease Expert Group, an international team of more than 100 scientists studying the effects of nutrition on health who contributed to the research.

WITNESS TO INFECTION

A new technique that allows scientists to watch as viruses enter cells could lead to improved therapies

BY JACQUELINE MITCHELL

COMPOSED OF LITTLE more than a few strands of genetic material and some proteins, viruses are barely alive. Yet the tiny microorganisms are among our deadliest foes. Now, a Tufts microbiologist is using new imaging techniques to find out how they make us sick.

James Munro, who joined the School of Medicine faculty last fall, was part of a team that pioneered the use of fluorescent molecules that act as tiny beacons and allow researchers to watch in real time as an HIV virus prepares to infect a cell. What the team saw, in discerning distances as small as a billionth of an inch, could lead to new treatments or vaccines for infectious viral diseases, such as HIV and Ebola.

Scientists already knew that certain viruses, including HIV, Ebola and influenza, use the proteins on their surfaces to infect host cells. The surface proteins function like skeleton keys: If they match the corresponding proteins on the host cell—think of them as the locks—the virus gains entry.

It’s by recognizing these viral proteins that your immune system

remembers diseases you’ve been exposed to before. That’s why you won’t get the chicken pox or the same strain of the flu twice. Most vaccines are designed based on the structure of these surface molecules.

But the surface proteins on HIV, which the World Health Organization says has killed 40 million people since the disease was identified in the early 1980s, have frustrated scientists for some 30 years. For one thing, the virus evolves too quickly for our immune systems or science to catch up—so far.

“They say that HIV makes every possible mutation every day,” says Munro, an assistant professor of molecular biology and microbiology at the Sackler School of Graduate Biomedical Sciences.

Beyond the virus’ continuous evolution, its surface protein is a remarkable shape-shifter, with the ability to change its three-dimensional structure in an origami-like process called molecular conformational dynamics, says Munro, who specializes in understanding how that happens. “The goal of my work is really to bring these structures to life,” he says.

High-powered scans of HIV reveal a spherical virus that looks like a pincushion. The virus uses the heads of those pins—the surface proteins—to glom onto and fuse with T cells in the immune system.

In experiments reported in the journals *Science* and

Nature in October 2014, Munro and his colleagues zoomed in on those protrusions, each made up of a long protein molecule covered in sugars, known as a glycoprotein. The team was led by Munro’s postdoctoral advisor, Walther Mothes of Yale University School of Medicine, as well as his former graduate advisor, Scott Blanchard at the Weill Cornell Medical College.

The researchers knew that the HIV surface protein underwent its origami act to match its intended target at the moment of infection. That allowed the glycoprotein key to unlatch the T cells’ locks—a surface protein known as CD4—and gain entrance to the body. But they didn’t know what triggered the transformation.

Conventional wisdom, says Munro, held that the protein transformed itself in response to something else in the environment—the presence of another molecule or cell, for example, or a change in temperature, salinity or pressure.

Using high-resolution cameras and high-powered computing, the team found that the HIV protein was, in fact, always in motion, cycling through different shapes, much like a person moving through a series of yoga poses.

This surprising result, which paints a far more detailed portrait of this enigmatic molecule, could one day produce a way to disable HIV and other viruses.



The Confucian heritage goes back 2,500 years and continues to inform Chinese life. "No matter what dynasty was in charge, they all respected Confucianism," says Dong Kong.

Son of Confucius

This junior faculty member in neuroscience is a proud descendant of the ancient Chinese sage **BY BRUCE MORGAN**

WHEN HE WAS a boy growing up in China, young Dong Kong was routinely taught how to behave. On their daily rounds, his father would point out the good and bad actions of their fellow citizens and say, "Son, you should do this, not that." The parental messages carried special weight given that they were derived from the family's most luminous

ancestor, Confucius, and the boy was himself a direct descendant of the sage who lived and died 2,500 years ago. In effect, the boy was being taught to do his lineage proud.

Dong Kong, 35, an assistant professor of neuroscience at the School of Medicine, is a 76th-generation

descendant of Confucius. This is no mere wishful hope. As it happens, the Kong family lays claim to the best-documented pedigree of any family in the world, now numbering more than 2 million members. (“Confucius” is a Latinized form of “Kong fuzi,” or Master Kong.) In Qufu, Confucius’ hometown located 300 miles south of Beijing, approximately 100,000 Kongs crowd the local cemetery. Dong Kong belongs to the closest family branch to his ancient progenitor—to the innermost circle, in effect. This distinction he wears easily, like vapor.

Kong is matter-of-fact about his heritage. After he has printed out a Wikipedia article on Confucius for this author’s benefit, he gestures toward a photograph of the Kong family mansion, the ancient ancestral home, displayed amid the text. He comments offhandedly, “I lived in that house for a while when I was a boy.” The lightness of the remark burns through centuries.

The name of Confucius may be famous, but the man’s exact contribution to the world is less well understood among Westerners. By any measure one of the most influential figures in human history, Confucius was a keenly observant

L Kong has found a way to embed Confucian wisdom into presentations he makes to his graduate students.

moral philosopher who believed in self-cultivation and the strength of self-improvement. He stressed modesty, family loyalty, respect for elders and the transformative power of education. He was preaching a version of “Do unto others as you would have them do unto you” some 500 years before the time of Christ. Although often resembling a religion in its practice, Confucianism never mentions God or the afterlife in its teachings.

Confucian belief had its basis in individual and familial life, but the sage also argued that the greatness of nations stemmed from this foundation. In that sense, his thinking was classic and conservative in its import, imbued with the essence of human virtue, transcending politics. “No matter what dynasty was in charge, they all respected Confucius and used his teachings,” Kong asserts. Confucius fell decidedly out of favor during the Cultural Revolution of the 1970s. But a

recent feature in the *Wall Street Journal* noted that more recently, Chinese President Xi Jinping has often cited his reliance on the “brilliant insights” of Confucius to explain his own political and social philosophy.

“When we see men of virtue, we should think of equaling them,” Xi Jinping wrote, quoting Confucius, in *The Governance of China*, published last fall. “When we see men of a contrary character, we should examine ourselves.” The *Journal* article proceeded to link “the rise of Asia,” in part, to this cultural underpinning.

Kong, who earned his doctorate in genetics and molecular biology at Nanjing University before coming to Tufts by way of postdoctoral study at Harvard Medical School and Beth Israel Deaconess Hospital, has found a way to embed Confucian wisdom into presentations he makes to his graduate students. His research interest lies in homeostasis and the complex internal signaling process by which a metabolism retains its stable state. In a recent talk, Kong told his students, “‘Going too far is as bad as not going far enough.’ That’s what Confucius said, and it’s also true for metabolism.”

He is a loyal son, as proud of his current stature on the faculty at Tufts as he is of the bright chain of personal connections he owns extending back through time. He may be based in Boston now, but he makes a point to venture 7,000 miles home to China to see his family two or three times a year. “Confucius said, ‘Respect your parents,’” Kong explains, “so I try to do that.”

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New Confucian temple in Luzhou, China



ON FIGHTING EBOLA

Whether at home in Boston or on the ground in West Africa, Nahid Bhadelia takes a big-picture approach to stemming the spread of disease

BY BRUCE MORGAN
PHOTOGRAPH BY KELVIN MA

YOU MAY HAVE SEEN NAHID BHADDELIA, J99, F04, M05, LOOKING POISED and determined on the cover of *Boston* magazine's "Top Docs" issue back in December. The editors presented her as the local face of the Ebola crisis in West Africa, and this was a fair claim. Under the auspices of Partners in Health, Bhadelia was involved in her third grueling medical tour to Sierra Leone. "Once you've been there and seen how bad things are, I think anyone would be driven to go back," she told the magazine.

The 37-year-old Bhadelia, a doctor specializing in infectious diseases and based at Boston Medical Center, came by her global perspective naturally. Her father was a world-traveling physician. "I was born in India, and I grew up in Saudi Arabia and Sweden," she relates. "Then we came to the U.S. when I was 12 or 13 years old." Moving from culture to culture taught Bhadelia how varied human societies can be, and how differently they approach their problems, while stamping her with something of a restless, unquenchable spirit.

She has had her eye on the big picture for a while now. Anthony Schlaff, a professor of public health at Tufts School of Medicine, remembers having Bhadelia in his class as a passionate medical student more than a decade ago. "She was strong-willed, very smart and enterprising," he remembers—"and she had strong ideas about how she wanted to change the world."

It was more than just talk. While in medical school, she served as an HIV/AIDS counselor and clinic coordinator for the Sharewood Project, a student-run clinic in Malden, Massachusetts, that cares for underserved populations. In 2001–02 she was an Albert Schweitzer Foundation Fellow, working to improve health care among Boston's inner-city youth. She also founded and directed the Chinatown Community Health Program, which sponsored a cardiac screening

program for Asian immigrants.

Her unifying fire has always been the link between social justice and medicine. Enrolling in the medical school's combined-degree program with the Fletcher School, from which she earned a master of arts in law and diplomacy, constituted a logical—and perhaps inevitable—step.

Ian Johnstone, academic dean and professor of international law at Fletcher, says Bhadelia's focus while a student was on human security. In contrast with national security, which involves military force, human security entails a consideration of factors such as a country's endemic poverty, the quality of health among its people and its environmental degradation. "Understanding these broad issues can make you more effective as a health worker," Johnstone points out.

The well-schooled Bhadelia, who is director of infection control at

the National Emerging Infectious Diseases Laboratory (NEIDL) at Boston University, is within a few courses of adding an M.P.H. degree from Columbia University to her résumé. "I'm having trouble getting down to New York City to get it done," she offers with a smile. *Tufts Medicine* spoke with Bhadelia in early January, on the eve of her departure to Sierra Leone for a month's stay, about her current work and some of its implications.

Q: What drives you to take on such hard and dangerous assignments?

NAHID BHADDELIA: One of the reasons I did the M.D./M.A.L.D. degree is because I was very interested in how deeply seated emerging pathogens are in human movement, in culture, in economics, in politics. It was a new lens through which to examine how these diseases emerge and how they take advantage of vulnerabilities in health-care systems. It's not so much the danger that attracts me. Instead, it's always been that lens of how you tease out what's causing diseases to emerge. You can stop at that level, of course. But more of my focus has been: How do you assess the vulnerabilities in health-care systems so that you can make them stronger?

These epidemics are disasters, but they don't have to be disastrous. They're only disasters because of the vulnerabilities in the health-care systems.

Q: Most doctors are content to practice within relatively small geographic areas, but your approach is at the macro level, isn't it?

My approach is really a mix of large and small. All diseases start at the individual level. What I've done here at NEIDL and Boston Medical Center over the past few



An Ebola volunteer dons protective gear recently in Liberia, West Africa.

years is very much the same philosophy as in Africa. At the hospital, I was a health-care epidemiologist; my focus was on how to limit the spread of infections within the hospital.

Q: Let's talk about Ebola. In what ways does this disease represent a diplomatic as well as a medical challenge?

Diplomacy is just one aspect of the Fletcher School. There are a huge number of people there who work on economic policy, humanitarian relief. A large component of the Fletcher student body focuses on disaster relief, and my connection is more to that part of the curriculum.

How do we, as medical professionals, determine the ethics of trying out experimental medicines in a crisis? How do we distribute new resources to desperate societies without inflicting more harm? How do we gather data in the middle of an outbreak? These are some of the questions I've been working on. How do you think about making sensible decisions for the patient, and sensible policies at the public health level, when you're still learning about the pathogen?

Q: How well coordinated was the American response to the Ebola outbreak? One expert quoted in the *Boston Globe* described the U.S. response as "a collection of random acts of preparedness."

Two things—there's been the actual preparedness, and then there's been the narrative, which has been marred somewhat by the political environment. The big part of this country's response had to do with our confidence. We are a resource-rich country, and we always had the resources to handle this. We needed to increase the confidence of our health-care workers so that they could deal with this threat, and the way to do that is through training.

With any newly emerging pathogen, we discover holes in our public health

system. Ebola has played a role in teaching us how to do mass trainings on potentially new equipment. It's also taught us the cost of overreacting—for example, by enacting travel bans from the affected countries [Liberia, Guinea, Sierra Leone] to our own.

History has proven that travel bans don't work, and in fact can have very detrimental effects. When I was in Sierra Leone last summer, flights stopped. Commercial ship-

pers stopped shipping things. We ran out of full-body protective suits in the field. People couldn't travel, so we couldn't get more hands to help. Those are dangerous situations made more dangerous.

Q: Public interest in Ebola has waned as early predictions about the scale and rapid spread of the disease have not panned out. Does the lack of public awareness concern you?

It does. I think it's important for us to realize that Ebola is still raging. There are hundreds of cases a week. I saw some heartbreaking things over the summer when I was there.

Q: How would you describe our current understanding of Ebola?

The thing we know a lot more about now is how this disease is manifested in a large group of people and how it evolves during an epidemic. The previous mortality numbers for victims of the disease were quoted at 60 to

90 percent. The most recent numbers I saw had the mortality down to 20-something percent. That's amazing! Maybe it was always an issue of how quickly care got to these patients.

It's either that, or the virus has evolved into a different form. With most viruses, the way they work is that they become more pathogenic, which means they make you sicker and the viral load is higher, so more people catch it from you—or, over time, they

"HOW DO WE, AS MEDICAL PROFESSIONALS, DETERMINE THE ETHICS OF TRYING OUT EXPERIMENTAL MEDICINES IN A CRISIS?"

—NAHID BHADELIA

become less dangerous in order to keep the host alive longer so that more people can get infected.

Q: Do you fear a rise in epidemics brought on by global warming?

If you look back at the past 20-odd years, we've had 46 new human infectious diseases. Ebola was discovered in 1976. Almost every year now we have a new human pathogen. It is a combination of climate change and economic conditions that require people in lower socioeconomic communities to have to take advantage of natural resources around them. By doing that, we're pushing farther and farther into habitats that we've not been exposed to before.

A huge number of viruses are still undiscovered, and the farther we push into these new environments, the more likely we are to encounter them.

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THE MERCY SHIP

Born from a wish to improve the lives of Boston's poor, sickly children by exposing them to fresh air, the original Floating Hospital quickly created new and better forms of pediatric medicine **BY BRUCE MORGAN**

**The boat was both a
refuge and a harbinger of
better things to come.**



MOST PEOPLE WHO HANG OUT AT TUFTS HAVE PICKED UP THE NOTION THAT THE FLOATING HOSPITAL for Children, now part of Tufts Medical Center and a flagship institution in the field of pediatric medicine, began life as a boat of some kind. (Hence the nicely buoyant name.) But the details on that early evolution are hazy at best. Who cast off the mooring lines, and why did they do it?

A recent book tells the story complete with vintage black-and-white photographs that show, among other things, just how nicely people used to dress for their doctor appointments. It makes an entertaining page-turner for anyone interested in the early, enterprising days of modern medicine. We present here a sampling of that story and those images, selected from *The Boston Floating Hospital: How a Boston Harbor Barge Changed the Course of Pediatric Medicine*, by Lucie Prinz with Jacoba Van Schaik (Boston Floating Hospital in collaboration with Union Park Press, 2014), used with permission. Enjoy the cruise.

FROM 1855 TO 1865, MORE than 96 children out of every 1,000 in Boston died before they were 5 years old. Lemuel Shattuck, a Massachusetts public health pioneer, wrote in 1845 about one poor section of Boston that “children seem literally ‘born to die.’” The rise in deaths was due to diseases that found a breeding ground in the poorly ventilated, unsanitary surroundings of the urban slums that had sprung up to house the thousands of new immigrants. These included diphtheria, measles, scarlet fever, whooping cough, cholera infantum, dysentery and a host of other maladies ravaging the poorest children of the city.

The origins of the Floating [Hospital] were simple and modest. Its founders wanted a practical solution to a pervasive problem: Poor children were dying by the hundreds during the summer from intestinal diseases that were rampant in the crowded slums. The doctors of that time were only beginning to forge weapons against these intestinal illnesses, but they knew that if children could get into the fresh air, away from their environment, if they could be given good food and compassionate medical care, they would have a better chance to recover.

THE LAUNCH

On the morning of July 25, 1894, those citizens of Boston who regularly took an early morning stroll near Snow’s Wharf were astonished to see the barge *Clifford* being towed out into the harbor. Typically, the *Clifford* returned to her berth at midnight, after a night during which her decks were crowded with revelers out for a romantic cruise. But now, where deck chairs and dining tables had stood, there were hammocks and cots. The bar and the bandstand had been replaced by hospital gear. If they had been able to go belowdecks, those who saw the *Clifford* that morning would have noted the lower decks had been divided into wards and a dispensary.



From the roof of the *Clifford*’s cabin hung a 20-foot-long white banner emblazoned with green crosses.

The barge no longer resembled a pleasure craft. Between midnight and its 9 a.m. departure time, the *Clifford* had been transformed into the Boston Floating Hospital.

PUBLIC SUPPORT

From the outset, it was part of the Floating’s philosophy to be supported by public contributions. Even before the boat was launched, the

hospital was a pet project of Boston’s newspapers, and the papers continued to help raise funds throughout its earliest years on the water. Every week, the *Boston Evening Transcript* published the contributions received to date. Gifts were even received from other parts of the country; the first donation for the 1895 season was from an otherwise unidentified “Gentleman on the Mississippi

River.” This was followed by many small and some larger contributions: \$2 came from seven little girls in Arlington; \$100 from Mrs. Thayer of





Bottom left: Parents with small children embark on the *Clifford* in 1895. Far left: Nurses tend their patients on the open-air deck ward in this image from 1920. Top: A shuttle car helped transport children to and from their homes, the boat and the On-Shore Department.

Lancaster; \$1 from the South Evangelical Sunday School, West Roxbury; \$2.25 from the Longfellow Literary Circle, Brockton; \$5 from a “friend.”

People of all sorts, well-to-do and middle class, fashionable society ladies and children, garden clubs and sewing circles, were all attracted to helping the hospital and its little patients. In just a few years, it became one of Boston’s most popular charities.

CHANGING ATTITUDES

In those [late 19th-century] days, most hospitals still purposely prevented the parents from visiting their children—

or at least discouraged them from doing so. Visiting hours were deliberately set during the working weekday, and there were no visiting hours on weekends. Healthy children were not permitted in the hospital. These stringent rules made it virtually impossible for parents to find the time to see their sick children. By contrast, the Floating routinely provided free access to parents of all patients.

The doctors who served on the Floating in the early days came from the Boston Dispensary, which was established in 1796 as the first permanent medical facility in New England [and predecessor to today’s Tufts Medical Center]. In 1856,

the Boston Dispensary abolished the prevailing system that allowed wealthy subscribers, by dint of their support, to indicate who was to be treated. Doctors who joined the Floating brought this enlightened culture with them.

Unlike most of the hospitals of that time, the Floating did not look down on uneducated mothers or blame those immigrant women who did not understand much English and needed help in learning how to take better care of their children. For example, it was part of the routine for the doctor at the gangplank to search the bags mothers brought on board for contraband food. But this

was done in a kindly, gentle and non-judgmental manner so that mothers would not consider it a punishment. The unhealthy food and drink they tried to bring aboard was destroyed after explanations about why this was necessary. Mothers were given vouchers in exchange for their food, entitling them and their healthy children to lunch on board, and refreshments were served later in the day.

However, mothers were not only permitted to remain on board with their babies—they were, from day one, encouraged to form a partnership with the doctors and nurses overseeing their children's care. The children were treated with compassion, the mothers with dignity. Moreover, by 1896, the Floating recognized that there were often other children in the family who could not be left alone at home, and mothers were allowed to bring one healthy child onto the boat if necessary. The Floating provided a kindergarten for healthy children under the age of 6. This daycare facility gave mothers time to concentrate on their sick

child and provided the healthy youngster with a pleasant excursion at sea.

From the first voyages of the Floating, there were classes to teach mothers how to take better care of their children. These classes became more formalized as the years went by.

THE GOODNESS OF MILK

From the nurses who traveled around Boston collecting donated breast milk to the invention of formula, the Floating was always at the forefront of infant nutrition and the advances in the treatment of milk. By the turn of the 20th century, when a food laboratory had been established on board, doctors were using 20 different kinds of food or combinations of food to prepare formula on the Floating. The hospital's work established how modern-day doctors, nurses and parents view and use milk and formula.

By 1909, the Floating was the largest and most important infants' hospital in the United States, because it offered doctors an opportunity to study the largest

number and variety of the diseases of infants. Intestinal diseases continued to be alleviated and controlled through modifying the babies' food, and because milk was basic food for young children, the investigators increasingly focused on the role of milk in those illnesses. The Floating was a pioneer in providing formulas made from cows' milk and other ingredients to its patients.

New scientific advances made it possible for the Floating's food lab to furnish a formula carefully calibrated to suit the needs of each infant.

Patients who were sent home were given enough milk to ensure that they would have the benefit of 24 hours of pure milk—beginning the day they arrived on board.

Editor's Note: Experiments undertaken by doctors and scientists aboard the Floating led to the development of Similac, a powdered infant formula first marketed in 1927 and still widely used around the world today.

FLOATING HOSPITAL MILESTONES



1894

The evening party barge *Clifford* (near right) is launched as a daytime hospital ship on Boston Harbor to serve sick children during the summer months.

1897

Clifford purchased for \$5,000 and converted to full-time medical use.

1899

The Floating is first U.S. hospital to have air-conditioning.



1906

A much bigger ship is designed, built and launched as the new Floating Hospital; it features a large, airy dining room, clinical laboratory, a kindergarten and six wards containing 100 beds on the main deck.

STAYING COOL

Even on the water, the [Boston summer] weather could be oppressive, especially to children suffering from intestinal diseases. The innovators who put a hospital on a barge, however, did not accept this as an insurmountable problem.

In 1898, the directors began to look for a way to “modify the air in our wards in such a way that our patients shall have dry air of moderate temperature which shall be uniform irrespective of the weather.” They heard that Lowney & Co., chocolate manufacturers in Mansfield, Massachusetts, had “modified” the air in their factory at a cost of \$20,000. If \$20,000 could be spent to cool chocolates, the Floating should not hesitate to find a way to reduce the temperature in its wards in order to save the lives of children, the directors stated.

It would be an extraordinary addition to the hospital, to any hospital, at that time, but the dedicated board of directors had decided it was a necessity and consulted an engineer from



An experimental treatment for pneumonia used electromagnetic currents. On-Shore Department, 1923.

MIT. By the following year, the new “Atmospheric Plant” had been installed. So it was that in 1899, a small hospital established only five years earlier and functioning on a remodeled barge in Boston Harbor, became the first hospital in America to air-condition its wards.

KEEPING HISTORY AFLOAT

By the time of the [current Floating Hospital’s] groundbreaking ceremony in 1979, the estimated \$38 million cost for construction had risen to \$55 million

because of inflation. A 100-foot “bridge” of glass and steel, 35 feet above ground, connects the two parts of the building. Just one short flight above the lobby, a children’s waiting room has been built in the shape of a boat. Miniature portholes can be seen from the street through the glass walls of the building. Inside the room, children can play in the “wheelhouse” and pretend they are sailing in the harbor. Today, most of them probably do not realize that the room was built as a fond tribute to an old hospital ship.



1909

The Floating ranks as largest, most important hospital for infants in the U.S.

1916

First on-shore branch of Floating established at Norfolk House Center, a building housing various charities in Roxbury, Mass.

1927

Docked for repairs in East Boston, the Floating is destroyed by fire, marking the end of shipboard medical care. The glare from the blaze could be seen in Salem, Mass., 15 miles away.

1929

Formal affiliation established between Boston Dispensary, Floating Hospital and Tufts Medical School.

1982

The Floating Hospital is dedicated at the current site on Washington Street in Boston’s Chinatown neighborhood; by this time, more than half of practicing pediatricians in New England had been trained at the Floating.



The infant formula Similac, derived from years of research aboard the Floating, is first released in commercial form.

HEADS TOGETHER

Veterinarians and
physicians confer to
help deliver a knockout
blow to the cancers
their patients share

BY GENEVIEVE RAJEWSKI
ILLUSTRATION BY KARINE DAISAY

WHEN RENEE HOLDEN SAW THE LARGE lump under her cat's tongue, her instincts told her it wasn't good. She just knew that her 13-year-old calico Ginger had cancer. The prognosis wasn't any better. Ginger was diagnosed with squamous cell carcinoma, an aggressive cancer that is common in older cats.

The disease "has this insidious onset," says Elizabeth McNiel, a veterinary oncologist at Cummings School of Veterinary Medicine at Tufts. "Nobody really knows it's there until it's very advanced." Because Ginger had late-stage cancer, surgery was not an option. And chemotherapy and radiation would do little to extend her life.



In the brief time they had left together, Holden and Ginger were able to do something to advance our understanding of cancer in both people and animals. Through the Tufts Human-Animal Cancer Collaborative, a partnership among oncology researchers, veterinarians and physicians, Ginger received an experimental drug for treating her illness.

McNiel and two colleagues from the National Institutes of Health are running the drug trial to determine whether an engineered protein, based on toxins produced by the anthrax bacteria, can target and kill oral tumor cells such as those causing Ginger's disease. The drug, called intercomplementing toxin (ICT), has shown promise in mice.

Ginger and other companion animals are on the frontline of a field known as comparative oncology, which evaluates how cancer behaves and is best treated in people and other species. Tufts is one of just 20 U.S. academic institutions that are part of the National Cancer Institute's Comparative Oncology Trials Consortium, which designs and conducts clinical trials of new ways to treat cancer.

"Tufts University is very unique in that we have a well-established, strong cancer center at the medical school and Tufts Medical Center in Boston and a very strong cancer center at the veterinary school in Grafton," says Andrew Evens, a professor at the medical school, director of the Tufts Cancer Center and chief of the division of hematology/oncology at Tufts Medical Center.

That nucleus of expertise in human and animal medicine could help streamline the federal drug-approval process. Less than 5 percent of new treatments for cancer and other diseases receive Food and Drug Administration approval for use in human medicine, McNiel says.

Comparative oncology researchers say this is because methods for evaluating new treatments rely too heavily

on testing in lab animals in which cancer has been artificially induced. "We are testing the drugs in mice that have been genetically modified, exposed to chemicals that promote the growth of certain cancers or injected with tumor cells," McNiel says.

"Not to sound cynical, but we've become great at curing mouse cancers," observes Sandra McAllister, a breast cancer researcher at Brigham & Women's Hospital in Boston. "Certainly, that species has done a lot to help human-kind. But when we start with mice, we are making a big leap that doesn't always land us in the right spot. If we can add more relevant models of each disease to study, that benefits all of us."

THE HUMAN-ANIMAL BOND

At Tufts, researchers and clinicians are studying diseases that occur naturally in pets, just as they do in people. Because people and their pets share the same environment, and therefore are susceptible to the same factors that cause cancer and other diseases, companion animals are more predictive of the progression and treatment of disease in humans. "This model is a lot closer to the way cancer occurs in real life," says Kristine Burgess, V97, a veterinary oncologist at Cummings School's Foster Hospital for Small Animals.

McAllister, who studies the role that neighboring normal tissues and cells play in metastatic breast cancer, sought to work with Burgess for just that reason. Unlike lab rodents, some dogs naturally develop mammary carcinoma, which behaves like breast cancer in people. With consent from clients whose pets were undergoing treatment for mammary tumors at the Foster Hospital, Burgess provided McAllister with surplus biopsy tissue.

These animal tissues may help oncologists determine why some women's cancer returns or spreads despite aggressive treatment, while other women are cured. "If you look

"Everything overlaps, and you have to be open to using every discipline you can to solve the question in front of you."

—PHIL HINDS, TUFTS SCHOOL OF MEDICINE

under the microscope at a mammary tumor formed in a dog or a breast cancer formed in a human, in many cases they look identical," McAllister says. The normal cells and tissues surrounding tumor cells in dogs are also significantly more akin to those seen in humans than in mice, she notes.

Dogs with mammary cancer could also provide clues about the role of hormones in promoting breast cancer, says McAllister. "That's the thing that really astounds me," she says. "It's really rare for dogs that are spayed to develop mammary cancer. In unspayed dogs, it develops at a really high rate—at an even higher rate than it does in women."

A BRIDGE BETWEEN SPECIES

For Cummings School patients, the Tufts Human-Animal Cancer Collaborative promotes more robust research aimed at fighting life-threatening cancers. McNiel spends 75 percent of her time with the 17 cancer researchers at the Molecular Oncology Research Institute at Tufts Medical Center in Boston and the rest of her time treating animals at the Cummings School, 40 miles west in North Grafton. As a bridge between human and animal medicine,

McNiel has been able to connect Foster Hospital clinicians with their counterparts in human medicine.

“We tend to form our alliances around particular cancer types,” says Phil Hinds, professor and chair of developmental, molecular and chemical biology at Tufts School of Medicine. His lab is working with McNiel to investigate how genes and proteins may fuel the development of osteosarcoma, an aggressive and difficult-to-treat bone cancer in children that also occurs in large-breed dogs.

“The way people think about their fields is sufficiently different that you tend to get more insights when you bring these fields together,” says Hinds. “It becomes very useful to mix them. Everything overlaps, and you have to be open to using every discipline you can to solve the question in front of you.”

Another example of the synergies that Hinds describes is the collaboration between McNiel and Philip Tschlis, director of the Molecular Oncology Research Institute at Tufts Medical Center. “He had some interesting data concerning mast cell tumors and bladder cancer,” McNiel says. “We happened to be talking in Boston, and I said I was interested in those diseases in dogs. That conversation evolved into two projects.”

With support from the Morris Animal Foundation and a Tufts fund that encourages collaboration across disciplines, Tschlis, the Jane F. Desforges Professor at Tufts School of Medicine, and McNiel are investigating how genes in people and pets trigger normal cells to become malignant.

“Our work centers on a protein called NDY1, which stands for ‘not dead yet,’” McNiel says. Tschlis discovered and named the protein while studying lymphoma in rats. He found one gene that appeared to be involved in the development of lymphoma and mixed it with skin cells from healthy rodents. “It immortalized the cells so that they kept growing and growing and growing,

whereas cells without the added protein eventually die,” she says. Their findings suggest that NDY1 might promote cancer in mast cells, which are part of the immune system and cause the most common skin cancer in dogs. If they can figure out a way to turn off the protein, McNiel says, “the mast cell cancers may not be able to survive.”

Until 2009, when the FDA approved the use of the drug Palladia to treat canine skin cancer, the agency’s Center for Veterinary Medicine had not approved any veterinary oncology drugs. Veterinarians used—and continue to use—chemotherapy and other drugs that have been approved for humans. Because biomedical research funding has overwhelmingly gone to cure human diseases, McNiel says that most veterinarians resort to scouring the medical literature to see what is working in humans and then modify that for “whatever creature you happen to be treating.”

DOG-SPECIFIC DRUGS

Comparative oncology research is changing that. Take Tanovea, a drug developed to treat lymphoma, one of the most common cancers in dogs, and non-Hodgkin’s lymphoma, the comparable cancer of the lymph nodes in humans.

“Initially, a pharmaceutical company was looking at a lymphoma drug that would be given to humans or dogs,” says Burgess, the veterinary oncologist who is working with Evens at Tufts Medical Center to study the disease. Humans and dogs both received Tanovea during a clinical trial conducted at multiple institutions, she says, “and it turned out to be a very effective therapy in the dogs.” Tanovea will likely become the third oncology drug to receive FDA approval for exclusive use in dogs.

George, a 6-year-old bull mastiff, participated in the Tanovea trial at the Foster Hospital. Although the disease has come back a few times since he was

first diagnosed 20 months ago, he’s currently in remission.

“They are considering [George] a success story,” says his owner, Joann Stewart Meyer. “We were fortunate to be able to do this for him.” The tried-and-true chemotherapy drugs can be very effective in treating this type of cancer, she says. “But I think it’s really important that [veterinarians] are trying out new drugs.”

The hope of advancing the well-being of all animals is usually what motivates owners to enroll their pets in clinical trials, more so than an expectation of an immediate cure, says Burgess. “I think a lot of people do hope, obviously, that their [pet] will be one of [those] that will respond well to an investigational drug. But people come in with the understanding that sometimes that’s not the case. We’ll do our best, but we may only, at the very most, get a lot of information that will help others.”

Such was the case for Ginger, the cat whose oral cancer was treated with the experimental anthrax-based drug. Over the two weeks of the small preliminary study, veterinarians injected the drug directly into the tumors of Ginger and two other cats. “They did find a small amount of shrinkage, which I was very excited about,” says her owner, Renee Holden.

The cancer eventually got worse, and Holden made the difficult decision to euthanize her beloved companion on New Year’s Day 2014—eight weeks after she first underwent treatment.

Holden, who works in a genetics lab involved in human clinical trials, says she had no idea similar research was happening for pets until McNiel treated Ginger. “It’s probably people like her that really help advance medicine,” she says. “I felt like this was a great opportunity to have a little piece of that.”

GENEVIEVE RAJEWSKI is the editor of *Cummings Veterinary Medicine* magazine, where this story first appeared. Contact her at genevieve.rajewski@tufts.edu.

“You are reaching down over the side of the boat to lift a 120-pound trap up and over, and that trap has 450 feet of rope on it,” says Jon Rogers, lobsterman.

DOCKSIDE MEDICINE, PART 2

The Awkward Fit

Geographically, culturally and politically, Maine lobstermen have some distance to go if they are ever going to connect with better health care **BY BRUCE MORGAN**

WHEN YOU MEET Jon Rogers, the 57-year-old Maine lobsterman looks to be in great shape. He's sturdily built, with a weathered, ruddy complexion, and he carries a welcoming brightness in his light blue eyes. But he's living in a world of hurt. Where exactly does Rogers feel the pain? “Knees, hips, back, shoulders,” he answers with a smile. “Basically all the working parts.” Rogers has been lobstering for 47 years, since he first set out from a dock on Bailey Island with his grandfather at the age of 10. The strenuous work of pulling lobsters out of the ocean day after day has taken its toll.

Rogers is typical of a special breed of men—and they are almost all men—that his own daughter, Miranda Rogers, '17, a student in the School of Medicine's Maine Track program, is trying to connect with

medicine and help heal. He's the average age of a Maine lobsterman. These men carry a host of hidden scars. Apart from the inevitable accrued damage to muscle, joints and bone, they tend to have high blood pressure and high cholesterol, widespread hearing loss and recurrent melanomas. In countless ways they bear this all alone.

It makes sense, in a way. Those who take up this challenging job are stoic, independent-minded sorts in thrall to the flukes of the weather. Naturally, they don't much like sitting in a doctor's

office, waiting for the expert to show.

Last year, as an initial step in conducting a first-ever health assessment of Maine lobstermen, Miranda distributed 444 surveys to them in paper and electronic form. The response of 64 completed surveys, while small in number, was suggestive. More than one third (35 percent) of respondents had no health insurance. Some 28 percent had experienced a serious job-related injury. About half (49 percent) reported having had to reschedule doctor appointments in the past year. More than two-thirds (68 percent) claimed an annual income below \$61,000.

All these undercurrents met in early March at Maine's annual four-day commercial fishing conference, held at a big hotel on a scenic spit of land in mid-coast Rockland, where several thousand lobstermen mingled, surveyed nautical exhibits and attended talks. (There are about 7,300 commercial fishermen in the state, and roughly 80 percent of them are lobstermen.) Miranda occupied a small table in a row of tables, promoting her health outreach amid all the competing claims for attention. Rope? Propeller? Health care?

Jan Burson, a retired nursing professor from the University of Southern Maine, has run a health clinic here at the conference for the past 13 years. In a room just off a main corridor, a handful of white-coated R.N.s and nursing students from the university offer free blood pressure, blood glucose and cholesterol screenings for anyone who stops in. "High blood pressure, high cholesterol," she says of the results. "It's just about what you'd expect from a high-risk population that's out in the open air."

Skin cancer runs at elevated levels among these men, but Burson reports that whenever a member of her team asks clinic visitors about their approach to skin care, the query draws laughter. "It's not part of their lifestyle," she says. Once, when she told a group that they

needed to apply "a glob of medicine" to the back of their hands if and when they get infections there (a common side effect of handling rotten bait), the men immediately protested, saying, "We can't handle our traps with that stuff on our hands."

Context changes everything. Imagine being in a small boat 10 or 20 miles at sea. Medicine does not fit comfortably in this boat; and the grueling work will not wait. Lobstermen acquire hearing loss from standing near loud engines all day. They bang into things, suffer contusions. They endure long hours in glaring sun, or wet and brutal cold. And the muscular strain never relents.

"You are reaching down over the side of the boat to lift a 120-pound trap up and over, and that trap has 450 feet of rope on it," the elder Rogers says. "You're overextended all the time. There's no way to get your feet under you." This is exercise, but not the good kind. Rogers maintains some 400 traps.

GRASSROOTS MEDICINE

Politics colors Miranda Rogers' quest. Going back to Lexington and Concord, the right to be left alone is a perennial thread in American culture. Rural folks, in particular, are wary of intrusion, and people eking out a life along the coast of Maine may be the ultimate libertarians in spirit. "When did the government ever come up with a program that worked right?" lobsterman Rogers pressed me, halfway through our conversation. "The answer is never." He is suspicious of large-scale plans while remaining a steadfast supporter of his daughter's initiative.

If there's an irony there, it's not the only one. Lobstering is a huge, multinational enterprise that depends on legions of small, two- and three-man boats bobbing offshore. J.J. Bartlett, president of Fishing Partnership Support Services, a Massachusetts-based nonprofit that promotes the well-being of fishing families and is partnering with Miranda

on her outreach effort, notes that fishing amounts to as much as a \$1.5 billion industry across New England. Maine lobster catches accounted for roughly a third of that total in 2014.

"If this activity were all in one place," he points out, "lobstermen would have a \$15 million HR department taking care of them." Instead, the business is scattered among coves and inlets, and the men must fend for themselves.

By the end of the conference, 10 fishermen had filled out Miranda's health questionnaire on the spot, and another 100 pick up the forms to complete later. This is retail politics, where you set up a card table outside the town supermarket and solicit your neighbors' signatures in order to run for public office. The idea must build slowly and steadily if it is ever going to take hold. Will Miranda someday have a medical van that travels the Maine coastline, delivering care to lobstermen on terms that suit them? That's certainly a goal.

Jon Rogers admires his daughter's grit and holds out hope that she will prevail. His own world has changed, after all. He didn't use to have any health insurance when he started out, and now he does. He shrugged off the threat of skin cancer at age 20 and 30; now he applies sunscreen every time he heads out to sea. Making his colleagues healthier may be a matter of spreading more awareness around, he suggests, before likening Miranda's effort to a traffic cop parked along the highway, reminding people of the posted speed and improving public safety, or health, in the process.

Still, there are no guarantees in a world ruled by fog and wind. Let's say you're a lobsterman who has scheduled a doctor appointment. "If you wake up today and it's the first clear day you've had in three weeks," says Rogers, with a quick appraising glance through a nearby window out toward the bright horizon line, "you're probably gonna call and cancel."

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From All Corners

UNIVERSITY, SCHOOL & ALUMNI NEWS

SECOND THAT EMOTION

Laura Galinko, '15, and AmyLouise Case, '15, react to the news of their residency placements for next year, in New York City and Springfield, Massachusetts, respectively, as classmate Lauren Verra looks on. The occasion was Match Day, and, as ever, it came with tears of joy.

THE STORY BEGINS ON PAGE 33 »



On Friday, 20 teams were formed to come up with some new ideas and pitch them to a panel of judges. Organized chaos ensued.

All Shook Up

This annual hackathon makes a fast-and-furious habit of disruption **BY S. PARAN YAP, M.D./M.B.A., '17**

NERVOUS ENERGY FILLS the Sackler auditorium on the Boston campus as strangers engage in small talk on the last Friday in January. A hardware engineer from Palo Alto chats with a cardiac surgeon from West Roxbury, while a mobile-game designer from Toronto greets a small-business owner from Austin. At the other end of the room, a researcher at Boston Children's Hospital exchanges contact information with a bioinformatics expert from Seattle.

Welcome to Tufts MedStart, the third annual hackathon where people from all sorts of backgrounds come together for an intensive three-day competition to identify and try to solve problems in the medical arena. More than 120 participants are here for the event, sponsored by the medical school's M.D./M.B.A. program. The concept is simple: Gather the brightest minds from around the country and let them go to work with access to mentors from medical, business and technological backgrounds. In addition to bragging rights, the top prize is \$2,500 and the chance to pick the brain of venture capitalist Neil Chheda.

"Events like this help the next generation of students develop the skills needed to thrive in medicine's future," M.D./M.B.A. program director Paul Beninger told a reporter from *BetaBoston*. By this he meant break down all the regular walls and find some of the new connections waiting to be made.

This year, everyone came together around the theme of improving medical education. On Friday some initial ideas are roughed out, and 20 teams are formed to quickly refine their ideas, with the goal of pitching them to a panel of judges on Sunday. There is only one way to describe the process: organized chaos. Members

of each team are meeting for the first time. Contact information is rapidly exchanged, and ideas are flying.

Saturday morning at 7:30, the real work begins. Hackathon teams find spaces around Sackler and press forward with their concepts, consulting with mentors, identifying problems. They argue; they collaborate; they struggle to resolve the issues. This continues for the next 30 hours. Because the Sackler building must close at midnight, the teams pack up and move to their respective hotels, working straight through to daylight.

It had to end. For two hours on Sunday morning, teams pitched their ideas to judges, demonstrated prototypes and fielded questions. There were a lot of great ideas put forth, but the winner was a project called "SIM-VR," a virtual-reality headset programmed to simulate stressful events that commonly occur in hospitals; the goal is to help train health-care workers how to better handle pressure on the job. Another team proposed a muscle-tracking wristband designed to help medical students intubate a patient properly; the wristband vibrates when technique deviates from the ideal.

"Physicians should constantly be looking at the delivery of patient care, asking the question: How can we do this more effectively?" Scott Epstein, M84, A15P, dean for educational affairs at Tufts School of Medicine, said in his opening remarks on Thursday evening. At this year's event, as before, MedStart tried to answer the question in as many ways as the people who attended could think of.

The author was an organizer of this year's MedStart.



EDITOR'S NOTE A team of five Tufts students from this year's hackathon will represent the university at the 2015 Global Hackathon in Seoul, South Korea, this summer.

Tufts Hires Chief Diversity Officer



When **MARK BRIMHALL-VARGAS** arrived at Tufts this spring to become the university's chief diversity officer, it was a natural step in a career that has been devoted to the themes of diversity, inclusion and social justice.

"I've been working on these issues my whole life," said Brimhall-Vargas, who had been the deputy chief diversity officer at the University of Maryland at College Park since 2013. At Tufts, he says, "I feel like I'm walking into an institution that has done its homework."

The hiring of a chief diversity officer was among the recommendations contained in the final report of Tufts' Council on Diversity. The university's strategic plan, Tufts: The Next 10 Years, also sets the goal of creating a more welcoming environment on all three campuses.

"In the strategic plan, we state emphatically that Tufts will demonstrate an unprecedented institutional commitment to diversity, inclusion and cultural competency over the next decade," Tufts President Anthony P. Monaco said.

Brimhall-Vargas, who is also an associate provost, said he is impressed with the groundwork that has been laid by the diversity council, which Monaco chaired, as well as the strategic plan. "This is what attracted me to Tufts," he says.

"The president and [Provost David Harris] want to do something that makes Tufts even greater, and they are willing to put ambitious goals out there," Brimhall-Vargas said. "What that tells me is that I need to be equally ambitious and bold—and that the campus is ready for that."

Brimhall-Vargas held a number of positions in Maryland's Office of Diversity and Inclusion since 1997, and has taught intergroup dialogue and conflict resolution in several higher-education settings. He holds a doctorate from the Department of Teaching and Learning, Policy and Leadership at the University of Maryland at College Park, a master's in public policy from Harvard's Kennedy School of Government and an undergraduate degree from Pomona College.

Among his first priorities, Brimhall-Vargas said, will be to create a deeper sense of unity among the Medford/Somerville, Boston and Grafton campuses; to examine faculty recruitment and retention; and to support Tufts' goal of becoming accessible to more students from varying socioeconomic backgrounds. He said he also will strive to make both undergraduate and graduate students feel included in the workings of the university. —HELENE RAGOVIN

MEASURES OF GRATITUDE

MATHEW ROSS, A38, M42, A70P, M74P, maintained close ties to the medical school throughout his career as a psychiatrist and right up until his death last year at age 96. Now that connection endures with a remarkable legacy: \$7.1 million to support financial aid.

Ross, who left the bulk of his estate to the school, created the Dr. Mathew Ross and Brenda Ross, Ed.D., Trust Scholarship, which represents the largest estate gift the school has ever received for financial aid. His generosity will cover a substantial portion of tuition for five aspiring physicians each year.

“In recent years we have made financial aid a priority, and this exciting gift contributes significantly to our progress,” says Dean Harris Berman. “We accept Dr. Ross’s gift with deepest gratitude. He was at times one of our toughest critics, but that spoke to his high standards and enormous pride in the university.”

The only son of Ukrainian immigrants, Ross grew up in Boston, where his father was a jeweler. As an undergraduate at Tufts, he was an unabashed Jumbo, participating on the cheerleading squad all four years. After graduating from medical school, he served in the Army, where he met his future wife, Brenda Boynton, who was dean of Army students at the University of Lausanne in Switzerland and served in the Women’s Army Corps (WAC). Together they raised four children, including Doug Ross, A70, a lawyer, and Gail Ross, M74.

Mathew Ross’s career spanned decades that saw dramatic changes in the national discourse about mental health. He brought a can-do attitude to bear on improving access and reducing the stigma of therapy. That attitude evolved into a life philosophy he thought best embodied by the turtle, an animal that conveyed strength, patience, endurance and longevity, among other virtues. Eventually, the turtle was adopted as a family emblem, along with the motto “To get ahead, you must stick your neck out,” Doug Ross says.

Indeed, Ross’s life reveals a man undaunted by risk and intrigued by the new. After the war he set up a private practice in Beverly Hills, California, but he was troubled by how “scattered pockets of psychiatric practices of varied sophistication” lacked any central stabilizing force, as he wrote in a historical report. He went on to organize the Southern California Psychiatric Society.

The joy of learning and exploration informed other

career highlights, including a Fulbright fellowship in 1962 to study the Dutch community mental health system and his service as medical director of the American Psychiatric Association. He held academic appointments at Harvard, Brown, George Washington, UCLA and UC-Irvine. Later in life, he served on the California Senior Legislature, which annually proposes legislation to preserve and enhance the quality of life for older Californians.

Ross was retired when, in 2001, he turned to Tufts University School of Medicine to develop his innovative and holistic ideas on some of those quality-of-life issues. The Mathew and Brenda B. Ross Initiative on Aging, a cross-university endeavor, accomplished a great deal in its seven years. But when it did not meet Ross’s high expectations, he abandoned the project.

It’s a testament to his lifelong dedication to Tufts, though, that Ross overcame his disappointment and continued to support the medical school. He created an endowed scholarship in 1992, and more recently made a gift to the school through the university’s Financial Aid Initiative, which matches, dollar for dollar, any newly established endowed scholarship of \$100,000 or more, additions of that amount or more to existing endowed scholarships and any four-year term scholarship pledges of \$60,000 or more through June 2016. The goal is to raise \$50 million for scholarships. The gratitude Ross felt toward Tufts undoubtedly played a part in directing his recent estate gift to endow yet more scholarships, says Doug Ross.

The gift also honors Brenda Ross, who died in 2009. With degrees from Boston University, Harvard and the University of Wisconsin, she was untiring in her passion for education and lifelong learning, especially for seniors. Her career included serving as associate dean of continuing medical education at the University of California, Irvine, a city councilor in Laguna Woods, California, and senior advocate in California’s Department of Aging.

Doug Ross says the gift is also true to his father’s character, because it is focused on the future.

“He was always thankful to Tufts for giving him a professional life,” he says. “He wanted to repay that debt by making the same opportunities available to students who show the promise of becoming outstanding physicians. If he were here today, he would tell them one thing: ‘Do your best.’ That would make him happy.” —LAURA FERGUSON





Deep emotion and pride marked the day. At left, Heidi Walls hugs a friend. Twins Ryan Kring and Randy Kring display their official letters.

Lighting the Match

Nearly 40 percent of 2015 graduates will do residencies at Tufts-affiliated hospitals

DEAN HARRIS BERMAN was there amid the jostling hubbub on the fourth floor of the Sackler building, where the air of anticipation had a nice crackle to it. This was March 20, Match Day for 189 members of the Class of 2015, and the revved-up students, plus family and friends, pressed in on every side. Tables laden with food and drink anchored the scene. Shortly before noon, Berman hoisted a small glass of champagne and proclaimed his toast “to a great class—and, you’ll be happy to hear, a great match.” (For a complete listing of the

2015 residency placements, see page 34.)

Then all was shredded envelopes, shrieks and sudden hugs. Twenty percent of the class was bound for residencies in California; 36 percent would remain in New England, and fully 40 percent would be based at Tufts-affiliated hospitals. Seven residency programs would include five or more members of the class, Dean of Students Amy Kuhlik announced, before adding, “You’ll be with your friends, so that is good.” Further good news: All couples in the class matched in the same locale,

thus preserving their unions.

The 2015 match included the third cohort of the “Maine Track” program, where the medical school teams up with Maine Medical Center in Portland as part of a long-term effort to place more doctors in areas of Maine where physician shortages are acute. This year, 34 students in the program will graduate, with 10 pursuing residencies in Maine.

“This is the first year in a long time that no one went to Alaska,” said Kuhlik. —**BRUCE MORGAN**

Class of 2015 Residency Placements

ARIZONA

SIERRA CHANDLER, Pediatrics
University of Arizona Program,
Tucson

CALIFORNIA

TAMI ALKOSSER, Pediatrics
University of California-Irvine
Program, Irvine

DAVID BRESLER, Psychiatry
UCLA Medical Center Program,
Los Angeles

BETHANY DARLING, Pediatrics
Naval Medical Center, San Diego

MICHAEL DO, Anesthesiology
University of California-San
Francisco Program, San Francisco

DEAN EHRlich, Internal Medicine
UCLA Medical Center, Los Angeles

CEDAR FOWLER, Anesthesiology
Stanford University School of
Medicine Program, Stanford
Medicine Prelim., Alameda County
Medical Center, Oakland

EMILY FRANK, Pediatrics/Primary
Care, University of California-
San Francisco Program, San
Francisco

YIFAN GENG, Internal Medicine,
Kaiser Permanente, Oakland

COURTNEY HALISTA, Family Medicine,
David Grant Medical Center,
Travis Air Force Base

MINA KHORASHADI, Anesthesiology,
University of California-San
Francisco Program, San Francisco,
Transitional, Carney Hospital/
Steward Health Care, Boston

GABRIELA KUFTINEC, Internal
Medicine, University of California-
Davis Program, Sacramento

ELYSE LAFOND, Internal Medicine,
University of California-Davis
Program, Sacramento

ROBERTINO LIM, Psychiatry, San
Mateo County Program, San Mateo

BRIAN LIYANTO, Anesthesiology,
University of Southern California
Program, Los Angeles

STEVEN MALER, Anesthesiology,
University of California-Davis
Program, Sacramento, Medicine
Prelim., Harbor-UCLA Medical
Center, Los Angeles

STEVEN MICUCCI, Otolaryngology,
Kaiser Permanente, Oakland

AMY NI, Family Medicine,
Long Beach Memorial Medical
Center, Long Beach

AARON PERREAULT, Family Medicine,
Naval Medical Center, Camp
Pendleton

KIMBERLY PELKO, Pediatrics,
Children's Hospital, Los Angeles

JUSTIN PICK, Pediatrics,
University of California-Irvine
Program, Irvine

LOGAN PIERCE, Internal Medicine,
UCLA Medical Center, Los Angeles

LAUREN RISSMAN, Pediatrics,
Children's Hospital, Los Angeles

OLIVIA RUSSELL, Medicine/Primary
Care, University of California-Davis
Program, Sacramento

JARED SCHIFF, Pediatrics, Children's
Hospital, Los Angeles

BRIAN SHEEHAN, General Surgery,
University of California-Irvine
Program, Irvine

BETTY SHUM, Pediatrics, Children's
Hospital, Oakland

JASKARAN SINGH, Emergency
Medicine, Harbor-UCLA Medical
Center, Los Angeles

MARK SLOOTSKY, Internal Medicine,
University of Southern California
Program, Los Angeles

PETER SOLOMON, Emergency
Medicine, University of California-
San Diego Program, San Diego

RAJAT SURI, Internal Medicine, UCLA
Medical Center, Los Angeles

RASIKA THONDUKOLAM, Medicine
Prelim., Loma Linda University
Program, Loma Linda

KIRA WATSON, Medicine/Pediatrics,
University of Southern California
Program, Los Angeles

JOSHUA WILNER, Family Medicine,
Kaiser Permanente, San Diego

MAUD WILSON, Pediatrics, Children's
Hospital, Oakland

DYLAN WOLMAN, Diagnostic
Radiology, Stanford University
School of Medicine Program,
Stanford, Medicine Prelim.,
California Pacific Medical Center,
San Francisco

MARY WONG, Pathology, Cedars-
Sinai Medical Center, Los Angeles

COLORADO

ALEXIS CHAVEZ, Psychiatry,
University of Colorado School of
Medicine Program, Denver

JAKOB MROZEWSKI, Neurology,
University of Colorado School of
Medicine Program, Denver

STEPHANIE PRITCHARD, Pediatrics,
University of Colorado School of
Medicine Program, Denver

CONNECTICUT

KIGER LAU, Ob/Gyn, Stamford
Hospital-Columbia University
Program, Stamford

CHRISTIAN MERRILL, Orthopedic
Surgery, University of Connecticut
School of Medicine Program,
Farmington

CAROLINA VEGA, Pediatrics,
University of Connecticut School
of Medicine Program, Farmington

LAUREN VERRA, Pediatrics, Yale-New
Haven Hospital, New Haven

LYDIA WALLACE, Emergency
Medicine, Yale-New Haven Hospital,
New Haven

DISTRICT OF COLUMBIA

PATRICK BURKE, Ophthalmology,
Georgetown University/
Washington Hospital Center
Program, Transitional, Cambridge
Health Alliance, Cambridge,
Massachusetts

BRIAN KROENER, Family Medicine,
Georgetown University Program/
Providence Hospital

FLORIDA

KOSISOCHUKWU ANAGO, Internal
Medicine, Florida Atlantic
University-Schmidt College of
Medicine Program, Boca Raton

GREGORY BASIL, Neurological
Surgery, University of Miami-
Jackson Memorial Medical Center,
Miami

SAMUEL GILES, Neurology,
University of Florida College of
Medicine Program, Jacksonville,
Medicine Prelim., St. Elizabeth's
Medical Center/Steward Health
Care, Boston

SARAH GRAY, General Surgery,
University of Florida Program,
Gainesville

JESSICA STEPHENSON, Family
Medicine, University of Florida
Program, Gainesville

GEORGIA

CASEY GRAZIANI, Internal
Medicine, Emory University
School of Medicine Program,
Atlanta

MIKE HENRY, Urology, Emory
University School of Medicine
Program, Atlanta, Surgery Prelim.,
Emory University School of
Medicine Program, Atlanta

DEMETRIA SMITH, Internal Medicine,
Emory University School of
Medicine Program, Atlanta

SAMUEL STAMPFER, Internal
Medicine, Emory University School
of Medicine Program, Atlanta

ILLINOIS

MICHAEL GORELIK, Otolaryngology,
University of Illinois School of
Medicine Program, Chicago

COURTNEY HARRIS, General Surgery,
Northwestern University-McGaw
Medical Center, Chicago

KELSEY RENO, Pediatrics, University
of Chicago Medical Center, Chicago

SAMANTHA TAYNE, Orthopedic
Surgery, University of Illinois School
of Medicine Program, Chicago

MAINE

KEVIN BAIER, General Surgery, Maine Medical Center, Portland

MARGARET CLUKEY, Family Medicine, Maine Medical Center, Portland

MARGARET CURRAN, Family Medicine, Maine Medical Center, Portland

ANNE HICKS, Anesthesiology, Maine Medical Center, Portland

RANDY KRING, Anesthesiology, Maine Medical Center, Portland

CORTNEY LYFORD, Psychiatry, Maine Medical Center, Portland

ANNA MEADER, General Surgery, Maine Medical Center, Portland

LAUREN NADKAMI, Family Medicine, Maine Medical Center, Portland

ADAM NORMANDIN, Family Medicine, Maine Medical Center, Portland

ANKUR PATEL, Family Medicine, Central Maine Medical Center, Lewiston

MEAGAN TILTON, Pediatrics, Maine Medical Center, Portland

HEIDI WALLS, Family Medicine, Maine Medical Center, Portland

MARYLAND

JESSIE PAULL, General Surgery, Walter Reed National Military Medical Center, Bethesda

MASSACHUSETTS

NICOLE AFUAPE, Ob/Gyn, Baystate Medical Center, Springfield

KARYN AUSTIN, Pediatrics, Children's Hospital/Boston Medical Center Program, Boston

BRETT BAKER, General Surgery, University of Massachusetts Medical School Program, Worcester

MANASA BHANDARKAR, Internal Medicine, Tufts Medical Center, Boston

WILLIAM BRADLEY, Diagnostic Radiology, Massachusetts General Hospital, Boston

TRANSITIONAL, BETH Israel Deaconess Medical Center, Boston

CHARLES CARRIER, Orthopedic Surgery, Massachusetts General Hospital, Boston

AMYLOUISE CASE, Pediatrics, Baystate Medical Center, Springfield

DOUGLAS CASSIDY, General Surgery, Massachusetts General Hospital, Boston

EMY CHEN, Family Medicine, Carney Hospital/Steward Health Care, Boston

JENNIFER REN-SI Cheung, Family Medicine, Tufts University Program/Cambridge Health Alliance, Cambridge

JAMIE COHEN, Psychiatry, Harvard Longwood Psychiatry Program, Boston

AMELIA CURTIS, Emergency Medicine, University of Massachusetts Medical School Program, Worcester

JESSICA DAHLE, General Surgery, Baystate Medical Center, Springfield

COLLEEN DONAHUE, General Surgery, Lahey Hospital and Medical Center, Burlington

NATALIE GOLDSTEIN, Internal Medicine, Beth Israel Deaconess Medical Center, Boston

BENJAMIN GRIN, Medicine/Primary Care, Brigham & Women's Hospital, Boston

SHAHRAD HAKIMIAN, Internal Medicine, University of Massachusetts Medical School Program, Worcester

ANDREW HWANG, Medicine/Primary Care, Massachusetts General Hospital, Boston

PETER KELSEY, Anesthesiology, Beth Israel Deaconess Medical Center, Boston, Transitional, Carney Hospital/Steward Health Care, Boston

MARIAH KINCAID, Anesthesiology, Brigham & Women's Hospital, Boston

CAITLIN KING, Pediatrics, Massachusetts General Hospital, Boston

KATERINA KOVALENKO, Anesthesiology, Beth Israel Deaconess Medical Center, Boston, Transitional, MetroWest Medical Center, Framingham

RYAN KRING, Emergency Medicine, Beth Israel Deaconess Medical Center, Boston

WENDY KWARTIN, Ob/Gyn, Baystate Medical Center, Springfield

DANIEL LUTHER, Ophthalmology, Boston University Medical Center, Boston, Transitional, Lemuel Shattuck Hospital, Boston

NATHAN MACEDO, Family Medicine, Greater Lawrence Family Health Center, Lawrence

SETH MELTZER, Internal Medicine, Tufts Medical Center, Boston

ELISABETH MERCHANT, Internal Medicine, Tufts Medical Center, Boston

GILLIAN MORRIS, Family Medicine, Carney Hospital/Steward Health Care, Boston

EMILY PALMQUIST, General Surgery, Tufts Medical Center, Boston

KOSTAS PAPAMARKAKIS, Internal Medicine, Baystate Medical Center, Springfield

SAMIR PATEL, Emergency Medicine, Baystate Medical Center, Springfield

DUSTIN POWELL, General Surgery, St. Elizabeth's Medical Center/Steward Health Care, Boston

JONATHAN SAWICKI, Medicine/Pediatrics, Baystate Medical Center, Boston

BRIAN SCHURKO, Orthopedic Surgery, Massachusetts General Hospital, Boston

ABIGAIL SCULLY, Pediatrics, Tufts Medical Center, Boston

LAURA SEMINE, Diagnostic Radiology, Beth Israel Deaconess Medical Center, Boston, Transitional, Beth Israel Deaconess Medical Center, Boston

LISSETTA SHAH, Family Medicine, University of Massachusetts Medical School Program-Barre FHC, Worcester

JONATHAN SIMMONDS, Otolaryngology, Tufts Medical Center, Boston

BRYAN SWAIM, Family Medicine, Carney Hospital/Steward Health Care, Boston

ERIN TRUITT, Internal Medicine, Beth Israel Deaconess Medical Center, Boston

JUSTIN WAGE, Radiation Oncology, Tufts Medical Center, Boston, Transitional, MetroWest Medical Center, Framingham

AUDRA WILLIAMS, Family Medicine, Greater Lawrence Family Health Center, Lawrence

DEBORAH WITKIN, Ophthalmology, Tufts Medical Center/New England Eye Center, Boston, Transitional, St. Joseph's Hospital Health Center, Syracuse, New York

JASON YOON, Neurology, Beth Israel Deaconess Medical Center, Boston, Medicine Prelim., Boston Medical Center, Boston

MICHIGAN

JONATHAN ABRAHAM, Emergency Medicine, University of Michigan Medical School Program, Ann Arbor

MINNESOTA

DANIEL SCHUPACK, Internal Medicine, Mayo School of Medicine/Mayo Clinic, Rochester

RONA WANG, Emergency Medicine, Mayo School of Medicine/Mayo Clinic, Rochester

MISSISSIPPI

ALEXANDER FYE, Internal Medicine, Keesler Medical Center, Keesler Air Force Base

NEW HAMPSHIRE

DANIEL ARIDGIDES, Internal Medicine, Dartmouth-Hitchcock Medical Center, Lebanon

NEW YORK

ANDREW AHERRERA, Plastic Surgery, New York Presbyterian Hospital-Weill Cornell, New York

SHREENA BRAHMBHATT, Diagnostic Radiology, New York Presbyterian Hospital-Weill Cornell, New York, Transitional, SUNY-Stony Brook Program, Stony Brook

KENNETH CHIN, Medicine/Primary Care, University of Rochester Program/Strong Memorial Hospital, Rochester

ANDRE BUREY, Psychiatry, New York Presbyterian Hospital-Weill Cornell, New York

ANGELA COOMBS, Psychiatry, New York Presbyterian Hospital-Columbia, New York

JONATHAN FAINBURG, Urology, New York Presbyterian Hospital-Weill Cornell, New York, Surgery Prelim., New York Presbyterian Hospital-Weill Cornell, New York

LAURA GALINKO, Anesthesiology, New York Presbyterian Hospital-Weill Cornell, New York

GAURAV GHARTI-CHHETRI, Internal Medicine, University of Rochester Program/Strong Memorial Hospital, Rochester

SAYED IMTIAZ, General Surgery, SUNY Health Science Center, Brooklyn

OLIVIA KATES, Internal Medicine, New York Presbyterian Hospital-Columbia, New York

MARISSA KENT, Urology, Icahn School of Medicine Program/Mount Sinai Beth Israel, New York, Surgery Prelim., Icahn School of Medicine Program/Mount Sinai Beth Israel, New York

JADE MALCHO, Emergency Medicine, University of Rochester Program/Strong Memorial Hospital, Rochester

LEAH MCDONALD, Emergency Medicine, New York University School of Medicine Program, New York

KATHLEEN MELNYK, Psychiatry, New York University School of Medicine Program, New York

KELSEY MURPHY, Ob/Gyn, Icahn School of Medicine Program/Mount Sinai Beth Israel, New York

NICHOLAS NG, Pediatrics, Winthrop-University Hospital, Mineola

SINDHYA RAJEEV, Emergency Medicine, New York University School of Medicine Program, New York

SOSHIAN SARRAFPOUR, Ophthalmology, New York University School of Medicine Program, New York, Transitional, Carney Hospital/Steward Health Care, Boston

JULIAN SONNENFELD, Orthopedic Surgery, New York Presbyterian Hospital-Columbia, New York

SCOTT STATMAN, Internal Medicine, New York University School of Medicine Program, New York

ROSE YU, Internal Medicine, Icahn School of Medicine Program/Mount Sinai Beth Israel, New York

NORTH CAROLINA

JENNIFER BRESS, Emergency Medicine, Wake Forest Baptist Medical Center, Winston-Salem

NICHOLAS MILDENHALL, Otolaryngology, Duke University Medical Center, Durham

JONATHAN PELLETIER, Pediatrics, Duke University Medical Center, Durham

OHIO

JOHN LIU, Ophthalmology, Case Western Reserve University/University Hospitals, Cleveland, Transitional, Carney Hospital/Steward Health Care, Boston

OREGON

LISA KIPERSZTOK, Family Medicine, Oregon Health Sciences University Program, Portland

ELIZABETH SINCLAIR, Pediatrics, Oregon Health Sciences University Program, Portland

PENNSYLVANIA

ALEX ADDO, General Surgery, Geisinger Health System, Danville

EVAN CARUSO, Internal Medicine, Thomas Jefferson University Hospital, Philadelphia

GERARD CHANG, Orthopedic Surgery, Thomas Jefferson University Hospital, Philadelphia

STACEY GOLD, Ob/Gyn, Albert Einstein Medical Center, Philadelphia

CHRISTOPHER ILACQUA, Physical Medicine & Rehabilitation, Temple University Program, Philadelphia, Medicine Prelim., St. Vincent Hospital, Worcester

ALEXANDER TENG, Internal Medicine, University of Pittsburgh School of Medicine Program, Pittsburgh

RHODE ISLAND

ERICA BROWN, Medicine/Primary Care, Brown University Program/Rhode Island Hospital, Providence

JESSICA DIETZ, Pediatrics, Brown University Program/Rhode Island Hospital, Providence

BILL FOO, Pediatrics, Brown University Program/Rhode Island Hospital, Providence

YARDANA KAUFMAN, Family Medicine, Brown University Program/Memorial Hospital, Pawtucket

KRISTEN MEYERS, Medicine/Primary Care, Brown University Program/Rhode Island Hospital, Providence

TENNESSEE

RACHEL ELIASON, Ob/Gyn, University of Tennessee College of Medicine Program, Chattanooga

SOPHIA KOSTELANETZ, Medicine/Prelim., Vanderbilt University Program, Nashville

TEXAS

MIKEL ETCHEGARAY, Internal Medicine, Baylor College of Medicine Program, Houston

RICHARD MILLS, Internal Medicine, University of Texas Southwestern Medical School Program, Dallas

UTAH

LINDSEY FITZGERALD, Internal Medicine, University of Utah Affiliated Hospitals, Salt Lake City

SARAH GILLIGAN, Internal Medicine, University of Utah Affiliated Hospitals, Salt Lake City

SARAH SCOTT, Family Medicine, Utah Healthcare Institute, Millcreek

CALEB SWANBERG, Family Medicine, McKay-Dee Hospital Center, Ogden

VIRGINIA

SYED ALI, Family Medicine, National Capital Consortium Program, Fort Belvoir

DANIELLE FROCK-WELNAK, Ob/Gyn, Virginia Commonwealth University Health System Program, Richmond

BENJAMIN MARTIN, Internal Medicine, University of Virginia Program, Charlottesville

CHRISTOPHER MCLAUGHLIN, Radiation Oncology, Virginia Commonwealth University Health System Program, Richmond, Transitional, Lemuel Shattuck Hospital, Boston

ALEXANDER SHANNON, General Surgery, University of Virginia Program, Charlottesville

BENJAMIN ZORACH, Internal Medicine, University of Virginia Program, Charlottesville

WASHINGTON

MARIAM ALAM, Internal Medicine, University of Washington Program, Seattle

THOMAS BYRNES, Orthopedic Surgery, University of Washington Program, Seattle

KARTHIK DEVARAJAN, Surgery Prelim., University of Washington Program, Seattle

AMY KILLEEN, Surgery Prelim., Virginia Mason Medical Center, Seattle

RAJEEV SAXENA, Otolaryngology, University of Washington Program, Seattle

WEST VIRGINIA

DANIEL SHUBERT, Orthopedic Surgery, West Virginia University School of Medicine Program, Morgantown

WISCONSIN

ANDREW KANAREK, Diagnostic Radiology, University of Wisconsin Hospital and Clinics, Madison, Medicine Prelim., St. Elizabeth's Medical Center/Steward Health Care, Boston

KATHERINE MCCREARY, Family Medicine, University of Wisconsin Program, Madison

TUFTS LAUNCHES SUSTAINABILITY FUND

Tufts has created a sustainability investment fund, which is now available for donors making new gifts of \$25,000 or more to the university.

Donors concerned about environmental, social and governance factors can now designate that their endowment gifts be invested in the Tufts University Sustainability Fund. They may, for example, create an endowed scholarship or professorship and have the money invested in the fund, which the Board of Trustees approved at its November 2014 meeting.

“Through this pilot fund, we will learn more about this kind of investment approach, with the goal that sustainable investing will expand in our endowment as we gain experience and confidence in these types of investment approaches,” says Laurie Gabriel, J76, chair of the Trustee Investment Committee.

Exploring how to set up such a fund was one of the recommendations of the Divestment Working Group established by President Anthony P. Monaco. The group also examined the feasibility of divestment from fossil fuels and other ways that Tufts could mitigate climate change, both to advance the university’s goals and to test the feasibility of this kind of investment vehicle.

The university has appointed an advisory committee to help define what constitutes qualifying investments. A member of the Trustee Investment Committee chairs the advisory group.



To learn more about supporting Tufts with a gift to the Tufts University Sustainability Fund, please contact Margot Biggin, executive director, University Advancement, at margot.biggin@tufts.edu or 617.627.3287.

ALUMNI ASSOCIATION PRESIDENT

PITCHING IN TO HELP



I HAVE BEEN fortunate to have had the opportunity to work with Tufts medical students for many years. Whether as an advisor, instructor, lecturer, attending during rotations in my clinics or research supervisor, I have found that our students are bright, enthusiastic and hard working.

All students soon become involved in delivering medicine to the underserved, the principle that underpins the Boston Dispensary, founded in 1796. I have witnessed this when I visit the Sharewood Project, the student-run clinic that offers free care to the medically underserved populations in the greater Boston area. And at our recent Tufts Medical Alumni Council meeting, we heard program director Jennifer Greer-Morrissey talk about the many projects offered through the medical school’s Community Service Learning program, for which all our students are asked to fulfill a minimum of 50 hours of service to an established community-based program before they graduate. Many of these projects are done in the Boston area. Joyce Sackey, dean for multicultural affairs and global health, also helps arrange several rotations abroad.

Many of these projects provide great opportunities for alumni participation. Recently, you received notice that Mark Pearlmutter, ’84, is organizing another medical student trip to Haiti in June and July and needs volunteer faculty to accompany them. Dean Harris Berman and I are working on other opportunities geared primarily for alumni. I just met with Lisa Shmerling, M.P.H.14, M.D./M.P.H.14P, executive director of the MAVEN Project (Medical Alumni Volunteer Expert Network). We will be looking for Tufts alumni to join a corps of experienced volunteer physicians to serve parttime in “safety-net clinics” for underserved patients via web-based technology. In addition, we are meeting with the organizers of Seed Global Health, which, in partnership with the Peace Corps, can arrange sabbaticals for interested alumni in various medical institutions, primarily in Africa.

You can help. Your Tufts Medical Alumni Association dues fund many of these projects.

Alumni are encouraged to contact Erin Morgan, director of development for alumni giving and relations, at Erin.Morgan@tufts.edu regarding the opportunities I have mentioned so that Tufts can continue to remain a leader in providing medical care in the spirit of our founders.

THOMAS R. HEDGES, '75
President, Tufts Medical Alumni Association
thedges@tuftsmedicalcenter.org

Class Notes

1965

HERBERT COHN of Marblehead, Massachusetts, has stepped away from medicine and toward the stars, it seems. Until recently he was a pediatric cardiologist based in Marblehead. “Currently retired from clinical practice, I am studying the physics of electrical charge in the atmosphere,” he says.

HAROLD FALCONER of South Bristol, Maine, enjoys choral conducting, playing chamber music and acting as a church organist these days. He is retired from a career in emergency medicine with a specialty in pediatrics. Falconer and his wife, Judith, have four children and nine grandchildren.

PETER ROSENBERG of Winthrop, Maine, now retired from his otolaryngology practice, is busy lately with golf, tennis, piano, magic, stained glass, radio-controlled model boats, bridge and some teaching at a local senior college. He and his wife, Suzanne, have three children and two grandchildren. His brother, **ROBERT ROSENBERG**, '62, preceded him at Tufts.

1976

SAM HO of Manhattan Beach, California, executive vice president and chief medical officer for UnitedHealthcare, was selected as one of the 2014 “Top 25 Minority Executives in Healthcare” by *Modern Healthcare*. Ho was recognized by the publication for his long-standing commitment to quality improvement, medical management, performance measurement and health care affordability. Over the years, he has earned more than 25 national awards focused on health-care innovation, quality improvement, transparency and value-based programs and benefit designs. Before joining UnitedHealthcare some 20 years ago, Ho enjoyed an extensive career in family medicine—establishing an inner-city clinic in San Francisco, expanding the University of California, San Francisco, family medicine residency program into a community hospital setting, serving as county health officer for San Francisco and working in executive positions with other managed-care companies.

JOHN RICHMOND of Hingham,

Massachusetts, has been named medical director for Network Development at New England Baptist Hospital, where he will help direct the growth of ambulatory services. He has held a number of senior positions at the hospital.

1983

SEAN B. CARROLL, Ph.D., of Madison, Wisconsin, is the first Sackler School alumnus to be chosen for the Tufts Alumni Award, the highest honor of the Tufts University Alumni Association, in the Distinguished Achievement category. He is one of four Tufts University graduates selected for the honor this year. Carroll is the head of the Department of Science Education at the Howard Hughes Medical Institute and the Allan Wilson Professor of Molecular Biology and Genetics at the University of Wisconsin.

ALFRED HANMER of Dover, Massachusetts, has been named medical director of Newton-Wellesley Hospital's Outpatient Surgery Center. He is the assistant director of the Kaplan Joint Center at the hospital, where his specialties include minimally invasive joint reconstruction and sports medicine.

1990

JOHN ALIAPPOULIOS of Palm Desert, California, a psychiatrist, enjoys hiking, playing racquetball and spending time with family, friends and multiple animals. He's grateful for the formative time he spent in medical school. “The strict academic culture at Tufts helped shape me into a ‘professional’ before

coming out to ‘laid-back’ Southern California,” he says, inviting any classmates in the area to stop by.

KIMBERLY LYNN KESLING of San Antonio, Texas, is an orthopedic surgeon with a specialty in spinal surgery. She was deployed to Iraq in 2003–04 and handled more than 700 cases in support of military and civilian patients during her time there. She serves as deputy of the Clinical Performance Assurance Directorate at the U.S. Army Medical Command in San Antonio.

2002

AKUDO ANYANWU IKEMBA of Nigeria, the CEO and founder of the international nonprofit Friends Africa, has been selected by the Tufts University Alumni Association to receive its highest honor, one of four 2015 Tufts Alumni Awards in the Distinguished Achievement category. Her organization, launched in 2006, is dedicated toward creating an African continent free of AIDS, tuberculosis and malaria through improved direct care, advocacy and prevention. Last November, her organization was honored as the winner of the \$100,000 ONE Africa Award, presented annually by the Howard G. Buffet Foundation to recognize the exceptional work of an African organization that seeks to fight extreme poverty and preventable diseases on the continent.



WE WANT TO HEAR FROM YOU. Send your class notes information to Tufts Medical Alumni Relations, 136 Harrison Ave., Boston, MA 02111, or email us at medicine-alumni@tufts.edu.

Tufts
Medicine

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In Memoriam

ANTHONY GRAFFEO, '45, of Burlington, Massachusetts, died on Jan. 24, 2015, at age 94. He was a general surgeon based in Medford, Massachusetts, for many years. He is survived by Norma, his wife of 63 years, six children, 12 grandchildren and three great-grandchildren.

MERRITT GARLAND JR., '46, of Greenfield, Massachusetts, died in January 2015 at age 95. He was a pioneer in women's health, advocating for Lamaze childbirth, midwife-assisted home delivery and a woman's right to choose.

ROBERT SILKMAN, '46, of East Dennis, Massachusetts, died on Jan. 24, 2015, at age 93. He was a surgeon in Worcester, Massachusetts, for 30 years; he was also on the faculty at UMass Medical School.

JOHN FLINT, '47, of Seminole, Florida, died on March 6, 2015, at age 91. He served in the U.S. Air Force for many years following the Korean War, retiring at the rank of colonel. He is survived by four sons and four grandchildren.

JOHN T. GRADY, '47, of Winchester, Massachusetts, died on Nov. 7, 2014. He was an orthopedic surgeon active in Arlington, Cambridge and Somerville, Massachusetts. He is survived by Frances, his wife of 32 years, two children, three grandchildren and six great-grandchildren.

RUSSELL BAGLEY, '48, of Bloomington, Minnesota, died on Nov. 4, 2014, at age 91. He served in the Navy during World War II and the Korean War. He practiced anesthesiology at Abbott Northwestern Hospital for 31 years.

PETER MASON, M48, J74P, V85P,

of Millinocket, Maine, died on Jan. 28, 2015, at age 89. He maintained a surgical practice in Millinocket for 40 years. He is survived by Barbara, his wife of 65 years; three children, four grandchildren and three great-grandsons.

BARBARA A.W. STREETEN, '50, of Corning, New York, died on Feb. 8, 2015, at age 89. She was director of the Eye Pathology Laboratory at Upstate Medical Laboratory (N.Y.) from 1967 to 2008 and published extensively in her field. She is survived by two sons and seven grandchildren.

RONALD COE, '51, of Hamden, Connecticut, died on Dec. 27, 2014, at age 92. A decorated combat medic in World War II, he ran a private practice in internal medicine in Hamden for many years. He is survived by a daughter, a grandson and four step-grandchildren.

JOHN F. ANDREWS, '52, of Boothbay Harbor, Maine, died on Dec. 1, 2014, at age 94. He had a large family practice in Boothbay Harbor, delivering an estimated 800 babies. He is survived by four children, 10 grandchildren and three great-grandchildren.

HAROLD THOMPSON, '53, of Attleboro, Massachusetts, died on Jan. 28, 2015, at age 89. He practiced urology at Sturdy Memorial Hospital in Attleboro. He is survived by his wife, Elaine, six children, 12 grandchildren and three great-grandchildren.

CHARLES B. DAVIS JR., M54, M82P, of Newburyport, Massachusetts, died on March 13, 2015. He was a highly respected physician in the Cambridge, Massachusetts, area. He is survived by three

children, including **CHARLES DAVIS**, '82, and nine grandchildren.

IRVIN HAMLIN, '54, of East Millinocket, Maine, died on Jan. 9, 2015, at age 91. A medic in the Army Air Corps during World War II, he had a private practice in the Katahdin region for nearly 50 years.

OTHO KNOWLES JR., '54, of Lamoine, Maine, died on Dec. 13, 2014, at age 89. He served as director of anesthesiology at Valley Hospital in Ridgewood, New Jersey, for 35 years. He is survived by his wife, Sheila, two daughters, three stepchildren, five grandchildren and six great-grandchildren.

VARTAN PAPAIZIAN, M54, A83P, M87P, of Tequesta, Florida, died on Jan. 20, 2015. He was chief of otolaryngology at Memorial Hospital of Rhode Island from 1963 to 1992 and remained on staff there until his retirement in 1998.

ARTHUR STEIN, '57, of San Jose, California, died on Feb. 9, 2015, at age 82. He was widely known as the pediatrician with the bow tie and glasses. He is survived by his wife of 59 years, Judy; five children and two granddaughters.

RICHARD R. JACKSON, A56, M60, of Swampscott, Massachusetts, died on Dec. 20, 2014, at age 86. His career as an anesthesiologist included more than 31 years at North Shore Medical Center in Salem, Massachusetts. He is survived by a daughter and a grandson.

J. WILLIAM DOLAN, A57, M61, of Wareham, Massachusetts, died on Feb. 26, 2015. He was an orthopedic surgeon affiliated with Carney Hospital and chair of the Operating Room Committee at Milton Hospital from 1970 to 1982. He is survived

by his wife, Jane; five children and five grandchildren.

WILLIAM A. CRAIG, '65, of Madison, Wisconsin, died on March 11, 2015, at age 75. He was chief of infectious diseases and associate chief of staff for education at the Madison VA.

DIANE HAMMER, '75, of New Orleans, Louisiana, a psychoanalyst, died on Feb. 8, 2015. She was chief of the mental hygiene clinic at the local VA in the 1980s and a consultant to Tulane Student Health. She is survived by her husband, Robert; two children and two grandchildren.

EDWARD WILLIAMS, '78, of Lakewood, Washington, died on Feb. 6, 2015, at age 62. He was a well-loved obstetrician/gynecologist who delivered multiple generations of babies over the past 30 years. He is survived by his daughter, Madison.

FACULTY

FRANCIS BOUDREAU of Dover, Massachusetts, former chair of ob/gyn at St. Elizabeth's Hospital, died on March 7, 2015.

CHARLES BUERK of Winter Springs, Florida, died on March 18, 2015, at age 78. He was an assistant professor of surgery in the 1960s.

MARTIN FLAX of Chestnut Hill, Massachusetts, died on Feb. 15, 2015, at age 87. He was chair of pathology at the medical school and pathologist-in-chief at Tufts Medical Center for 27 years, retiring in 1998.

HERMAN SUGARMAN, '49, of Newton, Massachusetts, a surgeon and clinical professor of surgery at Tufts for more than 40 years, died on Nov. 13, 2014, at age 93.



Religion and Community Health

Vaccines are under fire **BY ANTHONY SCHLAFF, M.D., M.P.H.**

THE MEASLES EPIDEMIC occurring in the western United States provides a good reminder that it is time to end the religious exemption for vaccination. It may also be time for physicians to change the way they educate their patients about vaccines.

First, we need to understand that government requires vaccination not to protect the individual, but to protect the community. Vaccines have failure rates—that is, what gives me and my family protection is not that I was vaccinated, but that everybody was. Despite the failure rate, enough of the community is immune so the disease cannot find room to spread. Combine the failure rate with a high-enough refusal rate, however, and the disease can spread, and even those who are immunized are at risk.

Second, with all due respect to religion, we need to understand that a religious reason to refuse a vaccine is no reason at all. Imagine if I insisted that my child attend school with a fever during a flu epidemic, claiming religious belief. The school would rightly scoff and refuse my child access. The claim to a religious exemption for vaccines is no different. There is no rationale. It is

based simply on belief, or a claim to a belief. Indeed, we do not accept refusals based on seeing the science differently, or an extreme libertarian point of view, or distrust of government, or a fear of technology we don't understand

Religious objections count precisely because they come without any reason except a statement of belief, perhaps endorsed by a religious "authority," which also has no reason but "belief." In other words, the objection arises for no reason at all. Right now, according to our laws, it's the only excuse good enough. And for this we put the community at risk.

While it is not possible here to address all the religious arguments made against vaccines, two are common enough that they deserve comment. One is that vaccine mandates interfere with the sanctity of the parent/child bond and the "religious" right that parents have to make decisions on behalf of their children. This argument can only hold if one is in ignorance of the community-protection reason for vaccines. The vaccine requirement is made not on behalf of the child, but for the community, and no religion should give parents the right to endanger others.

The second argument is that vaccines

interfere with the natural healing power of prayer. Setting aside for a moment the overwhelming scientific evidence that prayer does not reduce the spread of measles, it's important to point out how selectively this kind of argument is made. Do those who hold this belief in prayer also refuse the help of a rescue squad during a flood? I think not.

The solution is simple and clear. If you want to refuse vaccines, then home-school your children. Don't send them where they place my family and community at risk.

As for government officials who endorse such exemptions and would extend them, this suggests a failure to understand the basics of civics and the reasons for vaccine laws in the first place. To understand how irresponsible such statements are, imagine these same politicians urging drivers to treat traffic lights as optional! Like vaccines, traffic lights are imposed by government for public benefit.

Vaccines may impose on us in a small way, but they also make us safer and enhance our greater freedom by allowing us to live our lives free of the risk of preventable illness. This has long been settled science—and, until recently, settled policy. It needs to be settled policy once again, free from attacks by religion or ideology.

How should the medical profession address vaccine deniers? We need to start in our offices, with our patients, and make sure that parents understand the true rationale for vaccines. We are accustomed to being an advocate for our patients, and not an agent of the state, but in the case of vaccines, the two roles are inseparable. We can only protect individuals by demanding they participate in protecting everyone. We need to remind our patients that we are all in this together.

The author is a professor of public health and community medicine and director of public health programs at the medical school.

*“Everybody benefits
with charitable
gift annuities.”*



When Sara-Jane Victor, AG60, was in graduate school, she had to take a leave of absence due to a family emergency. Upon her return to campus, the chair of the history department called her into his office. “I thought, oh dear, have I ruined my future?” she recalls. “Instead he poured me a cup of tea and told me not to worry. It was like talking to my father.”

Through the years, that experience left an impression on Sara-Jane and her husband, Martin. In 2007, they created a fund at TUSM that assists students dealing with family emergencies and is named in honor of her father, Murray Benson, M.D., M29, and her grandfather, William Barwess. They decided to further support that fund through a charitable gift annuity, which also provides them with additional income.

In total, the Victors have established nine charitable gift annuities for TUSM—two for their emergency relief fund and seven for an endowed scholarship fund that also honors her family members. “Gift annuities make sense all around,” says Sara-Jane. “We receive income we can use right now while still allowing us to make a gift to Tufts.”



For more information, please contact Tufts' Gift Planning Office
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8 Nanoscale cancer



13 The Ebola fight



HACKING FOR MEDICINE

Participants from a mix of backgrounds gathered over an intense weekend at Tufts in late January to figure out some brave new approaches to medical education, presented before a panel of judges.

FOR MORE ON THE STORY, TURN TO PAGE 30.