

# Tufts

## Medicine

# IN A NEW LIGHT

Welcome to the  
state-of-the-art  
gross anatomy lab



## MUSIC MAN

Robert Partridge, A84, M89, played piano for five or six years as a boy, but he let that commitment slide. These days, the soft-spoken doc admits he switches between rock and classical music when he's tooling around in his car. But he has found a sideline job that brings him on a periodic basis into the world of massed strings and melody.

Partridge has been the official tour physician for the Boston Symphony Orchestra since 2013, and has traveled abroad three times—once to Asia and twice to Europe—with the entourage.

Luckily, he knows lots about keeping people fit as fiddles. With his background in emergency medicine—he's on staff in the emergency department of Emerson Hospital in Concord, Massachusetts, and also teaches the subject at Brown Medical School—he's the perfect resource for a mobile village of about 200 people, counting musicians, orchestra staff and family members. Common complaints on tour are headaches, colds and viruses, GI issues and, among the musicians, finger wounds caused by calluses that frequently crack open. The doctor carries skin glue with him at all times to repair those fingers; the substance works better than any bandage, he says.

In contrast to his regular employment at Emerson, where the patients tend to be sicker, but the support staff runs a mile deep, Partridge is a pure solo practitioner whenever he packs his bag of remedies and heads out on a musical tour. "When I'm with the orchestra, it's just me," he observes in his utterly calm and soothing voice, a voice you are likely to hold dear if you ever happen to fall sick while unpacking your music in Vienna or Berlin. "It's a different kind of challenge, which I enjoy." —BRUCE MORGAN

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Cover art by Betsy Hayes





# A Fond Farewell

I NEVER IMAGINED, when I first got taken to the doctor's office as a sniffling little kid, that I would end up spending so much time around medicine in later life, but that is how things panned out, I am happy to say. For the past 18-plus years, I have been editor of this magazine, attempting to chart a few accomplishments of this altogether remarkable medical school. I hope I have done a decent job on your behalf. But for everything there is a season, and now is the time for me to step away.

I have decided to retire from Tufts at the end of December 2016, at age 66.

Leaving won't be easy. As a reporter, I have found an endless supply of good stories to tell here, and the work of coaxing those into the magazine has been great fun. As a person, I have found even more satisfaction in meeting and getting to know the people of Tufts who fill those stories—that is to say, the humble, high-achieving students, staff, faculty and graduates of the place. To these wonderful people I can never really say goodbye. Instead, they will all be riding shotgun with me on the road to come.

**BRUCE MORGAN, Editor**

## IMPORTANT RESEARCH

I just read your article about Philip Haydon and his exciting new research into Alzheimer's disease ("The Alzheimer's Hope," Spring 2016). I am a Tufts alum and also a neuroscientist.

This is just a quick note to say I very much enjoyed your style of writing; the anecdotes you used brought

greater depth and meaning to the research on an already fascinating and important topic.

**DIANA FORDYCE, PH.D., '85**  
BASEL, SWITZERLAND

Your article about Philip Haydon's research was informative, inspiring and beautifully written. Your article drew my interest and concern as I am the daughter of parents who are both experiencing the challenges of Alzheimer's, and I have multiple friends with MS.

Our family would like to become more involved with this research project; namely, with the funding. Please direct us to the agency directly connected with the glial research study.

**NANCY KRAUSS, J85**  
PALM HARBOR, FLORIDA

**EDITOR'S NOTE:** Readers seeking information on Philip Haydon's Alzheimer's research may contact [info@gliacure.com](mailto:info@gliacure.com) for details. Those wishing to support his work financially are urged to contact Roxanne Beal, director of development for biomedical sciences at Tufts, at [roxanne.beal@tufts.edu](mailto:roxanne.beal@tufts.edu) or 617.636.2417.

# Tufts Medicine

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# Tufts Medicine

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# EVER MORE DIVERSE



**BACK WHEN I** was in medical school at Columbia College of Physicians and Surgeons in the early 1960s, the world was different and medical school was different, too. I think we had about five women in our class of 120, and one or two minority students at most. My class was overwhelmingly white men—that much I can say for sure.

But in order to be effective, medicine has had to move away from that old model of where doctors came from, what they'd grown up with and, culturally speaking, what they knew. Otherwise, the gap between doctor and patient would grow wider every day, and that in turn would diminish the quality of our doctor-patient relationships.

Here at Tufts, we want to produce doctors who patients will be comfortable visiting, doctors who look like the society around them. It's that simple, and that complex. We have worked hard and steadily in recent years to improve the diversity of our entering class, and those efforts are starting to pay off.

I am pleased to report that 16 percent of this fall's entering class, a total of 34 students, are from racial and ethnic minorities classified as underrepresented in medicine (URM). They are students who identify themselves as black or African American, Hispanic, Native American or Alaskan Native, Native Hawaiian or Pacific Islander. Seven years ago, that number was 6 percent.

We seem to have hit on a good formula for diversifying our medical school. Putting more time and energy in at the interview stage is an obvious first step. It may surprise you to learn that in 2014, Tufts School of Medicine ranked third in the nation for the number of minority applicants interviewed, according to *U.S. News & World Report*. We have been aggressive in our recruitment efforts. But we have also begun to think in a more nuanced way about how we evaluate our applicants.

Joyce Sackey, the medical school's dean for multicultural affairs and global health, is deeply involved in our assessment of applicants. She tells me that the main question comes down to this: How do you size them up? She

likens it to the undergraduate admission process that tries to identify the best potential students in a pile of applications. "If you look just at the SAT score, you're going to miss all kinds of deserving kids," she says.

Applicants may look undistinguished on paper but prove dazzling once you meet them. "They come in, and they wow you," Sackey has told me. "You can see that they're going to be great, humane doctors."

Other cases may require more patience on the part of those conducting the interview. Sackey tells me she may ask a URM applicant this simple question: How did you prepare for the MCAT? It may turn out the individual was distracted by having to work at a full-time job prior to the test date, or perhaps lacked the money for a test-preparation course.

Ingrained cultural issues may be harder to detect. Sackey uses the hypothetical example of a female applicant who arrives for the interview but doesn't have much to say. "She was awfully quiet; I wasn't too impressed with her," an interviewer may tell the admissions committee later. The applicant may have come from a culture where women are discouraged from speaking up, Sackey notes, and this should be taken into consideration.

David Neumeyer, our dean for admissions, is delighted to see the progress we've made on diversity. "We have improved substantially in this area," he says, "and I'm most encouraged because the changes we've made are not transient; rather, we've made a positive culture change within the whole school." URM students are more apt to serve community needs, he points out. In addition, white students gain understanding from the richer mix of classmates they meet and learn beside.

It's a chicken-and-egg kind of issue. The more diverse we are, the more diverse we will become, and I see that progression as entirely a good thing.

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

# Pulse



## Rethinking Muscle Cramps

A spicy drink that doesn't taste good appears to obliterate pain through misdirection of the nervous system. **BY BRUCE MORGAN**

**A**NYONE WHO PLAYS sports, whether as a weekend warrior or a pro, has likely encountered the pain of a muscle cramp. Veteran marathoner Paula Radcliffe cramped up so badly at the 2004 Olympics in Athens that she had to withdraw from the race.

But what underlies the condition, exactly? For a long time now, sports medicine experts have theorized that muscle dehydration or a muscle starved for electrolytes caused the cramp, and treated it accordingly with water and electrolytes.

Rod MacKinnon, M82, H02, winner of the 2003 Nobel Prize in Chemistry, has a different idea. “The primary origin of the cramp is the nerve, not the muscle,” he told the *Wall Street Journal* this summer.

The backstory has the tang of salt air. MacKinnon was kayaking with a friend off Cape Cod a decade ago when his hands and arms cramped up badly. Once back on shore, MacKinnon and his friend, Bruce Bean, a Harvard neurobiologist, hypothesized that the condition might be linked to something gone awry with impulses in the nervous system.

MacKinnon had an edge when it came to understanding nerves; after all, he won the Nobel Prize for uncovering the first atomic structure of protein molecules that generate electrical signals in living organisms. Now he had the idea that he could modify the nervous system—distract it, in a way—by overloading the nervous system through pungent flavors in a person's mouth. In MacKinnon's more precise, scientific phrasing, “The strong sensory input causes inhibition of the motor output.”

He has spent the past decade tinkering in his kitchen at home to test his theory, cooking up spicy drinks with varying amount of ginger and cinnamon while also trying to induce cramps using electrical stimulation. He found that his drinks did indeed have the effect of deterring muscle cramps. The results of more controlled subsequent studies done in the laboratory, which he presented last year at meetings of the American Academy of Neurology and the American College of Sports Medicine, further confirmed his hypothesis.

Word has gotten around, and a number of endurance athletes have already started drinking something spicy before their events. In 2015, MacKinnon launched his own concentrated beverage, called “Hotshot,” distributed nationwide. Nobody, not even the inventor, pretends the peppery mix of flavors tastes good. But it apparently delivers such a shock to the body that the body has no time for muscle cramps.





## Spread the News

A Tufts meta-analysis of the health effects of butter consumption in people in 15 countries has found little or no negative consequence from using the spread regularly.

Butter use was only slightly associated with total mortality, not linked at all to cardiovascular disease and even slightly beneficial when it came to diabetes. The study, published in *PLOS ONE*, was led by Laura Pimpin, a former post-doctoral fellow at the Friedman School of Nutrition Science and Policy, and senior author Dariush Mozaffarian, the school's dean.

# POETRY AS CURE

Nine-year-old Joy is sitting up in bed in her room at the Floating Hospital for Children, and she can't stop laughing. She's watching a cell phone video of her sister, Kristin. Jessica Evans-Wall, '19, seated next to the bed, is prompting Joy to think of some words to describe her sister for a poem they are writing together. "I would say chubby and funny and crazy," Joy says between gasps of laughter.

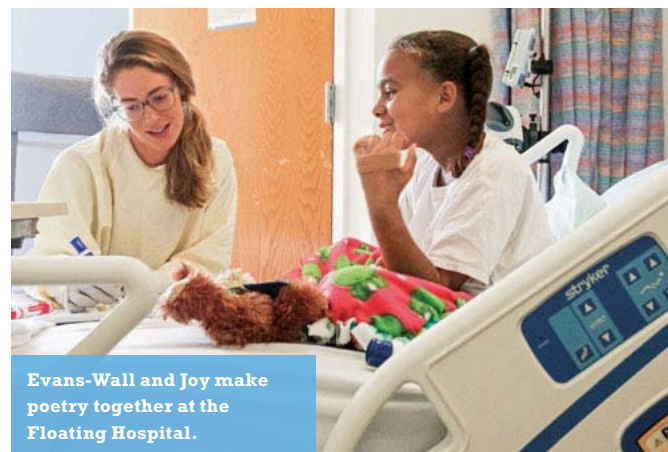
Evans-Wall's route to this bedside began with an influential undergraduate English class she took at Duke University called "Poetry and the Healing Arts." The class looked at the poetry that emerged from the trenches of World War I, including the well-known 1915 ballad by John McCrae that begins "In Flanders fields the poppies blow / Between the crosses, row on row." Poetry can be therapeutic in many ways, the professor said.

When Evans-Wall arrived at Tufts Medical School, she brought that message and that hope. With the guidance of Jennifer Greer-Morrissey, director of the medical school's Community Service Learning program, she began volunteering her time one afternoon a week at the hospital, bringing poetry to the young patients. Each week is different. Evans-Wall may divide her time among seven or eight patients or devote several hours to a single patient. In any event, she arrives with a clutch of poems, shows the kids a sampling and responds to whatever they like.

She's found that even the youngest patients prefer substantive poetry by such authors as Browning, Tennyson and Mary Oliver over lighter fare—Lewis Carroll's "Jabberwocky," for example. "I try to build an appreciation for what poetry can be," says Evans-Wall, who has loved poems since she was a child and in more recent years, working as a wilderness guide, has made it a habit to begin and end each day of a trek by reading poetry aloud to the campers in her care.

Watching her in action at the Floating, it's clear she's a natural teacher. "That's great; that's a good one," she tells Joy after the girl offers up another adjective for their work in progress. "Now what would be another good word for that?"

The parents of the young poets in training appreciate the special touch that Evans-Wall brings into the room, says Andrea Colliton, director of Child Life Services at the hospital. They are grateful for the way she "gets their child sitting up in bed, taking their mind off whatever medical experience they're going through, even for just a little bit," she says. One young patient with Down syndrome drew a more immediate lesson. Evans-Wall showed her a poem by E. E. Cummings. "I see he broke the rules," the girl said in response to the poet's jagged, uncapitalized lines. "Well, then, maybe I can break the rules, too." —BRUCE MORGAN



Evans-Wall and Joy make poetry together at the Floating Hospital.

## THE FAB FOUR

Tufts Medical Center has long been known for performing the most heart transplants in



New England, according to the United Network for Organ Sharing, but the hospi-

tal took things up a notch on June 15, when surgeons performed four heart transplants on that single day.

“It’s not ideal, and it stresses the system to the max,” **FREDERICK CHEN**, chief of cardiac surgery at Tufts Medical Center and a visiting associate professor of surgery, told the *Boston Globe* in a story celebrating the accomplishment. But when hearts become available, and they represent a good match, there’s no time to waste. “It is our duty,” he said.

Each of the medical center’s six heart surgeons took part in one or more of the transplants. For example, cardiac surgeon Gregory Couper worked on two transplants and spent nearly 16 hours in operating rooms that day. “We didn’t want our patients to lose out on transplants that could be a once-in-a-lifetime offer,” he told the newspaper. “We needed to do the best thing for our patients.”

A month after the surgeries, all four transplant recipients—whom hospital officials referred to collectively as “the Fab Four”—were grateful and recovering well.



## HEART GUARD

**SOMETIMES RARE MEANS** deadly. Each year in the U.S., an estimated 15 or 20 young athletes die from commotio cordis, the heart stoppage that occurs when a blow over the left ventricle, most commonly from a baseball, strikes the chest at just the wrong fraction of a moment between heartbeats. Even heavy gear, such as a catcher’s chest protector, has been shown to provide little protection in such cases.

But now Mark Link, ’86, a professor of medicine and director of cardiac electrophysiology at UT Southwestern Medical Center in Dallas and a nationally recognized expert in commotio cordis (“When the Heart Stops Cold,” Summer 2003), has partnered with a sports gear company called Unequal Technologies to create new and more effective protection from the hazard. They’ve spent nearly five years developing a chest guard made of high-grade composite material that offers protection against different impact speeds and types of projectiles while also being light, thin and flexible enough for general athletic wear.

Rob Vito, the head of Unequal Technologies, is confident that he and Link have hit the target. “It’s like our competitors are selling eight tracks and we have MP4s,” he told *Newsweek*. “Most chest protectors, if you remove the logos and the high price tags, all you’re left with is cheap couch foam.” Doctors at the New England Cardiac Arrhythmia Center at Tufts Medical Center tested Link’s new product in the lab and confirmed that the materials were likely to be effective in stopping commotio cordis. The results were published in March 2016 in the *Clinical Journal of Sports Medicine*.

“This is the first product to show improvement over a placebo, and that’s what’s so exciting,” said cardiologist Jeffrey Mandak, who serves on the science and health committee for U.S. Lacrosse, the national governing body for the sport. Mandak has been involved in studying commotio cordis since 2000.



“Always, always comfort your patients, even when you cannot diagnose them. Remember, there is no best, only better.”

Sam Ho, '76, a member of the medical school's board of advisors, addressing first-year students at the White Coat ceremony this fall

## ROMANCE IN THE AIR

Among the 200 members of the Class of 2016, at least a dozen have paired off into couples— about typical for recent years, says Amy Kuhlik, dean of students. Jared Wortzman, president of the class (pictured here with his classmate and fiancée, Raina Milne), led the way. “I think it’s just natural that people couple off in medical school,” says Wortzman. “There’s something about the shared misery of sleepless nights, endless studying and the lack of time for a social life that really draws us all together.”



Milne and Wortzman were lucky enough to find each other early in medical school.

## Research Star

Young postdoc named a Latin American Fellow.

**CECILIA A. SILVA-VALENZUELA, PH.D.,**

has been selected as one of 10 Latin American Fellows in the Biomedical Sciences by the Pew Charitable Trusts. A postdoctoral scholar in the Department of Molecular Biology and Microbiology, she will receive two years of funding to pursue research anywhere in the U.S.

Alumni of the Pew Latin American Fellows program, which supports young postdoctoral scientists from Central and South America, have gone on to garner some of the highest distinctions in Latin American science. Silva-Valenzuela, a

native of Chile, will work in the laboratory of Andrew Camilli, a Howard Hughes Medical Institute investigator who is a professor of molecular biology and microbiology at Tufts.

The Camilli lab investigates a way to use specialized viruses to stop the spread of cholera. These viruses, known as bacteriophages, have the ability to destroy the bacteria that cause cholera. In particular, the team aims to determine which types of these phages work best.

“If we can identify which bacteriophages are most adept at destroying the cholera bacteria in contaminated water, then we may be able to effectively prevent transmission to humans and avoid future cholera outbreaks,” says Silva-Valenzuela.



# Research



**“You can’t fix a broken watch until you know how the watch works,” says Forgac.**

## A CANCER CELL’S ACHILLES’ HEEL

Cell biologist Michael Forgac targets a mechanism that allows cancer to spread.

BY DAVID LEVIN

**THE MAJORITY OF** women who die from breast cancer don’t die from the primary malignancy. Instead, they die after the aggressive cancer metastasizes and forms new tumors in the bone, lungs and brain.

“Unfortunately, there are not any therapeutics out there that address metastasis,” says Tufts cell biologist Michael Forgac. “It’s a huge, unmet clinical need.”

Chemotherapy and radiation “are really brutal techniques from a living organism’s perspective,” says Forgac, professor and vice chair of the Department of Developmental, Molecular

and Chemical Biology at Tufts School of Medicine. Although these therapies destroy cancer cells, they often inflict collateral damage on the rest of the body, mowing down healthy cells alongside cancerous ones.

There has to be a better way, theorizes Forgac, who’s working to develop therapies that target cancer cells directly and leave healthy tissue untouched. Once researchers can solve that puzzle, he says, it may be possible to shrink tumors and prevent them from spreading without taking a hefty toll on a patient’s body.

Some of his work is being

supported by a \$100,000 grant from the Breast Cancer Alliance, a nonprofit based in Connecticut that funds research about the disease. “We know Dr. Forgac is the leader of this particular research, with strong preliminary data supporting him,” says Breast Cancer Alliance Executive Director Yonni Wattenmaker. “We look forward to learning of his advances, and continue to appreciate our long-term partnership with Tufts as we try to eradicate this disease.”

In his laboratory at the School of Medicine, Forgac is focusing on tiny molecular structures called V-ATPases,

the miniature proton pumps that reside in a cancer cell’s outer membrane and regulate pH levels inside malignant cells—a trait that’s essential for their survival. As the diseased cells grow, he says, they generate unusual amounts of acid inside them. V-ATPases act like the water pump in your basement during a heavy rain, pumping out extra acid before it begins to kill off the cell.

By using drugs that stop those pumps from working, Forgac says, researchers can trap acid inside cancer cells, making it harder for the cells to survive and invade new tissues—at least that’s what has occurred in cancer cells cultured in a dish.

There’s a big catch, however, when it comes to cells in a living human.

Cancer cells aren’t the only ones that rely on V-ATPases—in fact, nearly every cell in our body uses them to some degree. Inside the lysosome, a cell’s “stomach,” V-ATPases play a major role in helping break down proteins for energy. Shutting down these cellular pumps indiscriminately would not only kill off cancer cells, but would also kill nearly every other cell in the body.

“When we think about trying to target [V-ATPases] for a cancer therapy, we need to figure out how to do that in a selective way,” says Forgac. “It’s quite clear that if you inhibit all the V-ATPases in your body, you die.”

**PICKING A TARGET**

The trick to targeting just the V-ATPases that show up in cancer cells lies in a tiny detail within the structure of a V-ATPase, Forgac says.

With the exception of a few specialized cells in the body, V-ATPases are mostly found deep inside a cell. In aggressive cancer cells, however, the pumps tend to migrate to the cells' outer membrane, because that's a better location for venting off excess acid. So how do they get there?

Zoom in on a V-ATPase pump, and you'll see 12 different proteins woven together into a complex molecular machine. Most of them are identical from one pump to another, but in cancer cells, a particular part gets made at higher levels. Cancer cells make more of one piece of the V-ATPase called  $\alpha 3$ . Forgac says this piece acts as a sort of "address" for the V-ATPase, directing it toward the exterior of the cell.

"We've explored V-ATPases in a number of breast cancer cell lines, and what we found is that generally, the more invasive the breast cancer cell line is, the more  $\alpha 3$  is expressed," he says. If it's possible to develop drugs that target only V-ATPase pumps that have an  $\alpha 3$  piece inside, he adds, it might be possible to zero in on cancer cells while leaving other tissues intact.

"This is pretty exciting," says Phil Hinds, professor and chair of the Department of Developmental, Molecular and Chemical Biology at Tufts. "The fact that  $\alpha 3$ -containing V-ATPases might be targeted by new drug candidates is the culmination of years of basic research on Michael's part."

That goal is still a long way off, he notes, but a basic understanding of how  $\alpha 3$  is overexpressed and how it directs the pumps to the cell surface are essential before any drug can be created.

Forgac is starting to probe

the connection between  $\alpha 3$  and cancer. Instead of just examining cancer cells in isolation, he will study how  $\alpha 3$  affects the spread of malignancies in lab mice.

Using the DNA editing technique CRISPR, students in his lab will delete the gene responsible for  $\alpha 3$  in cancer cells. They'll then inject those edited cancer cells into healthy mice and track how long they take to metastasize. If the edited cancers spread more slowly than their unedited peers, Forgac says, it could mean that  $\alpha 3$  does indeed play a major role in letting cancers spread throughout the body.

"This is setting the stage for the next step," he says. "If it turns out that our hypothesis is true—that disrupting or knocking down  $\alpha 3$  reduces metastasis and tumor growth—then we can start to work on developing safe, effective therapeutics."

Granted, it will be a while before Forgac's work leads to any new breast cancer treatments. At the moment, he's mostly doing fundamental research, probing the ways that these tiny cellular mechanisms actually function. He feels strongly, however, that this sort of basic understanding is the bedrock of any future progress in medicine.

"You can't fix a broken watch until you know how the watch works," he says. "In medicine, it's the same thing. Understanding the basic processes that cells

use to grow and survive gives you the foundation to develop therapies when those processes go wrong."

DAVID LEVIN is a Boston-based freelance science writer.

## OVERWEIGHT AND HEALTHY

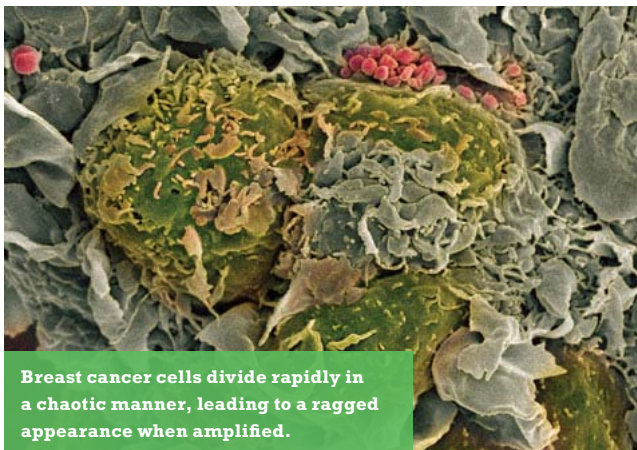
Some obese people show little evidence of diseases linked to unhealthy diets.

BY KATHERINE PETT, N16

**WE KNOW THAT** excess weight, and especially obesity, can lead to heart disease and diabetes. But not all obese people have the same risk factors for disease. In fact, some extremely overweight people are actually "metabolically healthy," meaning that they exhibit few symptoms of metabolic syndrome, such as high blood pressure, high blood sugar and high cholesterol.

A recent study published in *Preventive Medicine* sought to determine whether there is something special about the dietary patterns and nutrient intakes of metabolically healthy obese people.

The researchers found that overall, the quality



Breast cancer cells divide rapidly in a chaotic manner, leading to a ragged appearance when amplified.





of the diets of the obese people studied were of pretty low quality. The study, a collaboration among researchers at the University of Massachusetts, Brown Medical School, Tufts University School of Medicine and the Jean Mayer USDA Human Nutrition Research Center on Aging at Tufts, used dietary and health data from the National Health and Nutrition Examination Survey to examine the diets of more than 1,200 obese adolescents and adults.

The researchers gave every individual's diet a score on the Healthy Eating Index (HEI), which awards points for healthy food behaviors, such as eating more vegetables, fruits and whole grains. Points are also given for low intakes of solid fats, alcohol and added sugars. Each diet can receive a score of up to 100; the higher the score, the healthier the diet.

They found that compared to their metabolically unhealthy peers, the metabolically healthy adolescents and adult women under age 45 had higher HEI scores, indicating relatively healthy diets.

However, HEI scores

were not linked to metabolic health in adult men or in women age 45 and older. The researchers also found that overall, the obese people in the study had pretty low dietary quality; in fact, the group with the highest HEI score, the metabolically healthy adults ages 45 to 85, averaged only a lackluster 56 out of a possible 100 points

The findings could be useful for future interventions to reduce the risk of disease in obese people, especially if started early in life.

## TAI CHI AND AILING JOINTS

Slow, graceful motions and relaxation prove effective at managing pain.

BY MONICA JIMENEZ

**TAI CHI PRODUCES** the same benefits as physical therapy for patients suffering from knee osteoarthritis, according to a study by researchers at the Tufts School of Medicine.

The study, led by Chenchen Wang, a research professor at the School of Medicine, focused on osteoarthritis patients who reported significant pain. The average participant was 60 years old, and many were obese. "This was a really representative sample of patients we see in our

clinical practice at Tufts Medical Center every day," says Wang, director of the Center for Complementary and Integrative Medicine at the hospital.

Wang defines tai chi in her studies as a multicomponent, traditional Chinese mind-body practice that combines meditation with slow, gentle, graceful movements, deep diaphragmatic breathing and relaxation.

Patients were randomly assigned to either do tai chi twice a week for 12 weeks with an experienced instructor, or to undergo physical therapy twice a week at Tufts Medical Center for six weeks and then do six weeks of exercise at home. At the end of the 12 weeks, the tai chi and physical therapy groups reported equal improvement in pain and related health outcomes, effects that remained a year after the study began.

"Six weeks is very expensive with a physical therapist," says Wang, a member of the National Advisory Council for Complementary and Integrative Health at the

National Institutes of Health. By comparison, "tai chi is relatively cheap, and you can get it in a lot of places," she notes.

What's more, the tai chi group showed significantly more improvement than the physical therapy group when it came to symptoms of depression and quality of life. "By integrating physical, psychosocial, emotional, spiritual and behavioral elements, tai chi may systematically promote health by its effect on both the body and the mind," according to the study, which was published online May 17 in advance of print publication in the *Annals of Internal Medicine*.

"These people never knew what tai chi was," says Wang, who watched the study subjects' progress on video. "But when we brought them to the tai chi room at Tufts Medical Center week by week, we saw them changing to become happier, healthier people."

The study conclusion: "Standardized tai chi should be considered as an effective therapeutic option for knee osteoarthritis."



## RISE OF INTEGRATED MEDICINE

Times have certainly changed since Wang conducted her first study at Tufts in 2008 showing that tai chi alleviates pain in knee osteoarthritis patients. For that research, the 40 patients and single instructor practiced the ancient Chinese martial art in a conference room. “When there were meetings, patients would stand outside and wait,” says Wang.

Her most recent study was a different story. It included 204 patients and four instructors, the largest group in any tai chi study, and they practiced in a dedicated tai chi room.

Now Wang is studying the mechanism by which tai chi produces its benefits. She has been conducting brain-imaging studies to more closely examine the biological psychology and social aspects of the treatment, and also will estimate the net health-care spending reduction of offering tai chi as an alternative to physical therapy.

Tai chi could benefit more than just osteoarthritis patients, Wang says, noting that she has also found that it promotes cardiovascular fitness and reduces pain associated with fibromyalgia.

“When I came to North America and I saw people use pain medication, I was so surprised. I asked, ‘Why would you use something like this?’” says Wang, who grew up watching her

mother, a Chinese physician, rely on traditional Chinese medicine and acupuncture, combined with Western medicine.

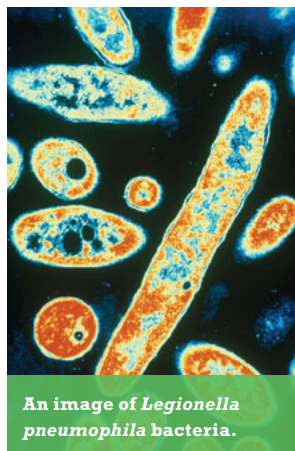
“This is the main reason I became a physician and scientist, and I think more young people and health-care professionals should realize the importance of this field,” she says. “Complementary and integrated medicine is a big field now—whatever patients need, this provides the best care.”

## PATHOGENS IN YOUR PLUMBING

Unregulated older parts of our water-distribution systems threaten to spread illness at ever-higher costs.

**AN ANALYSIS OF** some 100 million Medicare records for U.S. adults ages 65 and older revealed the enormous scale and cost of infections linked to opportunistic “plumbing pathogens” that live inside drinking-water distribution systems, including household and hospital water pipes.

The team led by researchers from the Friedman School of Nutrition Science and Policy and the medical school found that between 1991 and 2006, more than 617,000 hospitalizations related to three common



plumbing pathogens—*Legionella pneumophila*, *Mycobacterium avium* and *Pseudomonas aeruginosa*—resulted in around \$9 billion worth of Medicare payments, for an average of \$600 million a year. The costs may now exceed \$2 billion for 80,000 cases per year, according to the study authors.

“Premise plumbing pathogens can be found in drinking water, showers, hot tubs, medical instruments, kitchens, swimming pools—almost any premise where people use public water,” said lead study author Elena Naumova, a professor at the Friedman School, director of the Tufts Initiative for Forecasting and Modeling of Infectious Disease and an adjunct professor of public health and community medicine.

“The observed upward trend in associated infections is likely to continue, and aging water-distribution systems might soon be an additional reservoir of costly multidrug

resistance,” Naumova added. The study was published online in the *Journal of Public Health Policy*.

State and federal oversight generally has ensured the safety and quality of public drinking water in the U.S. However, the so-called premise plumbing systems—the pipes and fixtures in homes and buildings that transport water after delivery by public water utilities—are largely unregulated. This gap can lead to inconsistent monitoring and reporting of potentially harmful flaws, as was shown in the recent case of Flint, Michigan, where thousands of children were exposed to elevated levels of lead in the drinking water.

Opportunistic premise plumbing pathogens, such as the bacteria that cause Legionnaire’s disease, can thrive in low-nutrient conditions and grow as biofilms on the inner surfaces of pipes. Biofilms allow these pathogens to resist disinfectants and environmental stressors, and aid in the spread of antibiotic resistance and virulent genes. As water-distribution systems age, their susceptibility to contamination increases.

“The risk of becoming ill from drinking water is much less than the risk of becoming ill from food, but it is not zero,” noted Jeffrey Griffiths, a professor of public health and community medicine and an author of the study.

# Head in the Clouds

There's never been a good test for how altitude affects a mountain climber's mental acuity. But recently one of our students took steps to improve things. **BY BRUCE MORGAN**

**S**OMETIMES WAITING IS the hardest part. For five days last spring, Katherine Rizzolo, A09, M16, sat on a boulder in Nepal along the main climbing trail to Mount Everest. As heavily laden trekkers passed, she would ask them one by one if by any chance they were involved in a study she was participating in that looked at how altitude affects the cognition of mountain climbers. Rizzolo and other members of her team were presenting climbers with a 10-minute quiz to be taken at different altitudes.

Getting the hikers to take the quiz at lower altitude had been somewhat straightforward, but as Rizzolo was learning as she waited on the boulder, getting them to take it the second time could be difficult. The results were patchy at best. Climbers who had taken the 10-minute quiz at 10,000 feet might, at higher altitudes, have wandered off the trail, fallen ill, gotten injured, or simply quit and gone home. Not everyone was in the mood to name the president or count backward from a given number. Plus, Rizzolo might have blinked and missed them as they passed.

It was while doing a rotation at Tufts-affiliated Christian Medical College in southern India—an opportunity funded in part by the Dr. Te-Wen Chang Difficile Scholarship—that Rizzolo figured she might as well visit Nepal for a few weeks and pitch in on an effort to develop a new and better screening tool for Acute Mountain Sickness (AMS), an ailment brought on by reduced air pressure and low oxygen levels at altitudes above 8,000 feet. Severe cases may be marked by grayish skin, confusion and the inability to walk in a straight line. The latter two symptoms represent potentially fatal side effects for a climber.

The best available tool right now for assessing AMS is something called the Lake Louise Score, a rudimentary six-part quiz from the 1980s that Rizzolo calls “outdated and subjective.” It asks a climber such questions as: Do you have a headache? A stomachache? Do you feel nauseous? “If someone is suffering mountain sickness, they may answer the questions wrong and say, ‘Oh, I feel fine,’” Rizzolo points out. “Right now there’s no good measure of cognition at altitude.”

To devise something better, her five-member team in Nepal, working under the auspices of MGH/Harvard Medical School and the Himalayan Rescue Association, drew inspiration from the model of the mental-status assessment exam commonly given by hospitals to new patients. For the exam, patients are typically asked to remember and repeat a series of words, cite the year, month and day of the week, and/or retell a story that they heard moments earlier.

Rizzolo’s test group involved 60 or 70 climbers who were each evaluated at 10,000, 11,500 and 18,000 feet (Everest base camp). “It was not a goal of mine to go to Everest base camp, but it just sort of happened,” says Rizzolo,

who describes herself as a hiker, not a climber, though she has summited all 48 of the peaks in New Hampshire.

Even ruggedness like that doesn’t prepare you for keeping track of people on a mountainside. Not only did the tentative subjects of the Nepal test fail to follow any fixed plan, but the five testers themselves, strung across the flanks of an immense mountain range, were also hard to pin down. Lacking phone service of any kind, they could not readily stay in touch. “We would leave notes for each other at the lodges,” Rizzolo relates.

Rizzolo isn’t on the mountain these days, having recently begun her internship in internal medicine at Maine Medical Center in Portland, but she says the group’s study of AMS is ongoing as time and resources permit.

Rizzolo suggests that her work on Mount Everest reflects the same interest in global health and underserved populations that led her to India in the first place. “I like medicine, and I like mountains,” she says. “That’s a niche area, for sure, but it’s also part of the much larger field of working to create medical solutions in places where people don’t have access to regular medicine.”

That sort of quest can land you anywhere. With her supervisor’s approval, Rizzolo says, her next challenge may include time spent amid the homeless population of Portland, Maine.

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# transplant SURGEON

Curtis Cetrulo, '99, attending surgeon at Massachusetts General Hospital, helped lead a team that performed the first penis transplant in the U.S. this past May.

SELDOM HAS A SENSITIVE MEDICAL PROCEDURE BEEN MORE openly discussed. Thomas Manning, the 64-year-old transplant recipient who had had his penis amputated after being diagnosed with penile cancer, was an unusually candid patient, chatting freely with reporters about his hopes and fears and urging other men to follow his public example. “Don’t hide behind a rock,” he told them.

Cetrulo, 46, came to this operation well prepared. In 2012 he had performed a hand transplant at MGH, the hospital’s first. He also runs a transplantation research laboratory directed at finding ways to eliminate the need for antirejection drugs required for transplantation. He spoke with *Tufts Medicine* about his latest path-breaking surgery.

#### Where did the idea of a penis transplant begin?

I was giving a lecture on the hand transplant when one of the urologists in the audience came up to me and said, “We have all these desperate patients. Can we transplant penile tissue?” That was a few years ago, and we started working on it. Incidentally, the Department of Defense has also been working on this vigorously, too, because of so many wounded warriors coming back from Iraq and Afghanistan who have devastating injuries and a really high suicide rate—as high as 25 to 50 percent.

**What medical advances made this surgery possible?** One advance would be the technical ability to attach very small tendons and nerves together using a microscope. The second would be the immunosuppressive drugs we have now, where the side effects have gotten more manageable.

#### To what degree is your work therapeutic by nature?

I would say more than I anticipated. With Joe, who was our patient in the hand-transplant case, I was amazed by all the pictures he would send me after the surgery of him doing things in his daily life that meant a lot to him and were incredibly therapeutic—for example, washing his car for the first time in 11 years, or eating chips and dip.

BY BRUCE MORGAN

PHOTOGRAPH BY DAVID YELLEN

#### Is there any limit to what transplant surgery can achieve?

Right now the biggest limit on these kinds of procedures is the need for immunosuppression. We have a protocol here at MGH that’s directed at engineering immunologic tolerance so that a patient will not need to take these drugs that can cause kidney failure and certain cancers down the road. We’re very close to achieving that.

We have an approach that we use to “fool” the body. Consider a hand transplant. You take immune cells in the form of blood stem cells from the donor and give them to the recipient, where they take up residence in the recipient’s blood and form, in effect, a second immune system. The recipient becomes a hybrid, having a hybrid immune system of both recipient and donor.

Then when we transplant a hand, for example, the recipient’s newer immune system “recognizes” that hand as part of itself and won’t reject it.

#### Once that research evolves, hypothetically all bets are off when it comes to body part transplantation—is that right?

All bets are on, I would say.





Curtis Cetrulo, '99



# IN A NEW LIGHT

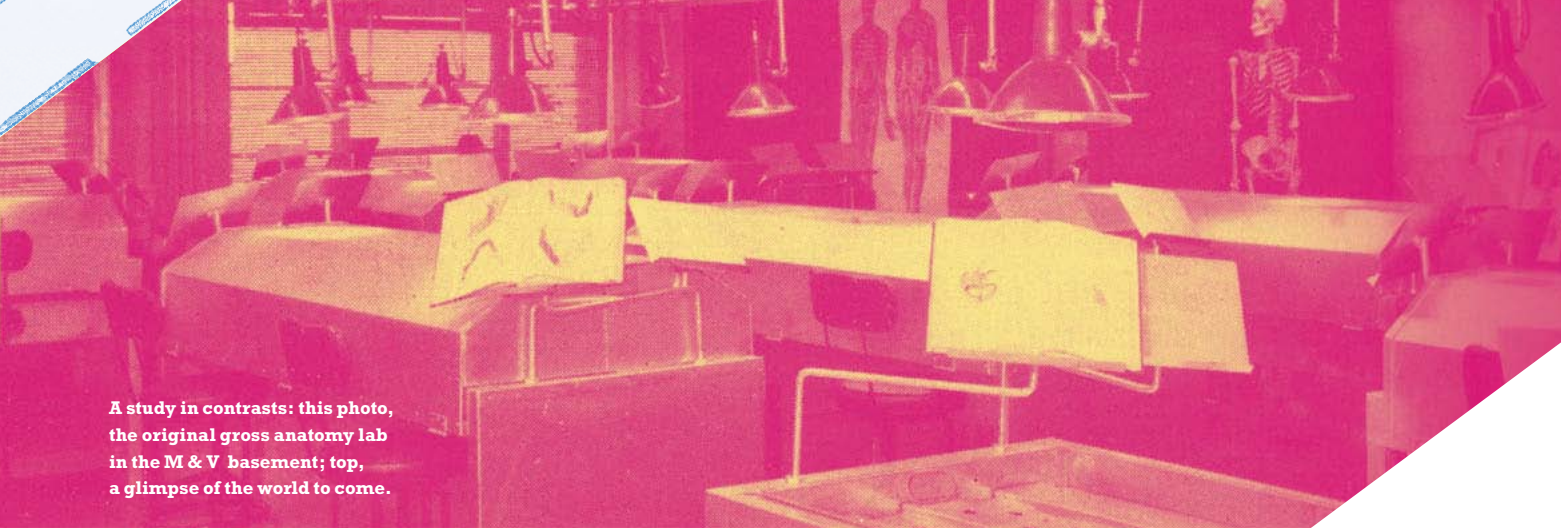
A stylized architectural floor plan illustration in light blue and grey, showing various rooms and corridors, overlaid on a background of diagonal stripes in yellow, magenta, and orange.

With its latest gift, a \$15 million donation, the Jaharis Family Foundation Inc. will move the anatomy lab into modern new space and ease the debt burden on students specializing in family medicine.

BY BRUCE MORGAN

STUDENTS CONSISTENTLY RANK THE GROSS ANATOMY course as one of Tufts School of Medicine's top classes. More than anything else, that is a tribute to the superb teaching that goes on there—because, as anyone who has visited the anatomy laboratory in recent years knows, the space could use some improvement. It's a cramped, windowless room in the basement of the M&V Building that has been in operation, with some periodic updates, since shortly after the medical school moved to its downtown Boston location in 1950. Dean of Students Amy Kuhlik calls it “way past retirement.”

Now the outdated lab is about to enter the 21st century. Thanks to a \$15 million gift from the Jaharis Family Foundation Inc., the



**A study in contrasts: this photo, the original gross anatomy lab in the M & V basement; top, a glimpse of the world to come.**

anatomy lab will be enlarged, technically upgraded and moved to airy new quarters on the third floor of the M&V over the next two years. It is scheduled to be completed in summer 2018.

“I know firsthand that the gross anatomy lab needs to be completely redone to bring it up to today’s standards,” says Steven Jaharis, M87, speaking on behalf of the foundation. “It’s the one laboratory that basically hasn’t changed since I was a student 30 years ago.”

There’s a less obvious change in the works as well. A \$2 million portion of the Jaharis gift will be used to encourage students to pursue a career in family medicine

by alleviating some of their debt before graduation. “The need for primary-care physicians in America is growing,” says Jaharis, himself a longtime family-medicine practitioner in the Chicago area. “I hope that this scholarship will help students who go into family medicine graduate with less loan debt.”

The Jaharis family are the School of Medicine’s most generous supporters. They made the cornerstone gift for the Jaharis Family Center for Biomedical and Nutrition Sciences, a milestone in the school’s development that, since it opened in 2002, has expanded research space and fostered greater collaboration among faculty. A few



years later, they funded the wholesale renovation of the Sackler Building, transforming it into a handsome student learning center.

They didn't stop there. The family's foundation also helped create the Clinical Skills and Medical Simulation Center, enabling students to develop their physical-diagnosis abilities. They endowed the Jaharis Family Chair in Family Medicine as well as the Jaharis Family Scholarship Fund, which provides more resources for financial aid.

## WITH THE NEW LAB, TUFTS HAS REINFORCED ITS COMMITMENT TO HANDS-ON PHYSICAL DISSECTION AS A CRITICAL COMPONENT OF MEDICAL EDUCATION.

"We feel grateful and lucky for all the help the Jaharis family has given us over the years," medical school Dean Harris Berman says, noting in particular that the endowed professorship in family medicine "helped us build a robust Department of Family Medicine. In the same way, we are excited for everything that this latest gift means for our future."

The importance of education to the Jaharis family prompted its patriarch, Michael Jaharis, M87P, H15, who died in February, to assume a leadership role in the governance of Tufts. He served as a university trustee from 1993 to 2003 and was a longtime chair of the board of advisors to the School of Medicine and the Sackler School of Graduate Biomedical Sciences.

Tufts President Anthony P. Monaco says the Jaharis family's philanthropy aligns with a core value of the university—to act as an engine for social good. "There's nothing more noble than an investment in education and the health and well-being of our society," says Monaco, an accomplished medical researcher and geneticist. "Family physicians trained at Tufts will

play a critical role as we confront the obesity epidemic, opioid addiction and other great health challenges of our times and work to resolve them."

### THE IMPORTANCE OF DISSECTION

Since the time of the Greeks, an understanding of anatomy has been basic to the effective practice of medicine. Robert Willson, a senior lecturer and director of the gross anatomy course, calls his field "the oldest and most fundamental of all the medical sciences."

How best to teach the subject has been a matter of some debate among U.S. medical schools as digital methods of representing the human body have been widely adopted. With the new anatomy lab, Tufts has reinforced its commitment to hands-on physical dissection as a critical component of medical education.

"Overall, the trend has been for schools to go away [from physical dissection], although many have come back to it," says Jeffrey Marchant,



research assistant professor and associate director of the Division of Medical Education. "In our view, in order to learn the material, students have to go into the lab and physically dissect the parts of the body. Searching for structures is an important part of the learning process." In other words, digital anatomy programs rely heavily on a standardized model of the human form, but in the real world, bodies vary considerably from one to the next.

Associate Professor Peter Brodeur, director of the Division of Medical Education, notes that digital images are limited in what they can convey, whereas the cadaver teaches students "what the textures are and the spatial relationships among structures."

You can hear the passion in these instructors' voices, but for the past half century, the basic challenges of the space in which they teach have posed a countervailing force.

In the early 1950s, when the lab was new, there were just 100 students in a medical class. Now the laboratory runs year-round, providing anatomical training for 200 medical students, plus dental and physician assistant students. With students and 15 faculty members all jostling for space, conditions have been challenging.

The acoustics in the basement aren't ideal, so students often have to strain to make out what the teachers are saying. "Students would often ask us to repeat things," says Rebecca Lufler, a senior lecturer in integrated

**Left: Steven Jaharis, M87, and his father, Michael Jaharis Jr., M87P, H15, shortly before the dedication of the Jaharis Family Center for Biomedical and Nutrition Sciences on Tufts' health sciences campus in Boston in 2002. Right: An architect's rendering of the new anatomy lab shows a near doubling of space.**





**Mary Jaharis, M87P, and Michael Jaharis Jr., M87P, H15, at the 2008 opening of the medical school's Clinical Skills and Simulation Center, which the Jaharis Family Foundation Inc. helped create.**

physiology and pathobiology. "The new lab will be a much better learning environment for our students."

Additional improvements will include an expansion of the space, from 16 square feet per student to 30 square feet per student, consistent with the recommended anatomy lab standard of between 25 and 40 feet. And instead of six students per dissection table, there will be five.

The ventilation and lighting systems will be state-of-the-art, and with the new location on the third floor, anatomy students will be able to work in natural

light. Gone will be the days when, as Sarah Ballatori, '19, recalls, students exploring the fine detail of head and neck dissection have to rotate their table toward the overhead lights to see what they are doing. A new adjacent classroom capable of holding 60 students will provide space for small-group learning to supplement the regular coursework.

"One of the best aspects of this gift is that it will allow us to modernize one of our oldest buildings on campus, the M&V building," says Berman. A former garment factory, the M&V, now called the Biomedical Research and

Public Health Building, has been used for myriad purposes since the university acquired it in 1946. "The M&V is a significant piece of our 20th-century history, and the gift from the Jaharis family will allow us to maximize its use in the 21st century," the dean says.

An essential component of the modernization are the technology upgrades, which are so significant that Willson says they provide faculty members with "a great opportunity to change the way we teach." For example, computer screens will be installed to supply online learning materials, perhaps in the form of videos made by Tufts faculty and aimed at providing more focus to the day's assignments. The new technology will also allow for better integration of advances in medical imaging, including X-rays, CAT scans and MRI. "We've had these before, but we've not really had the space to use them most effectively," Brodeur says. "Now we'll have a separate classroom where we can bring the students in."

Of course, some of the improvements in the new lab will be on a more intimate scale. For the past 50 years, in keeping with the Tufts spirit of improvisation, male and female students

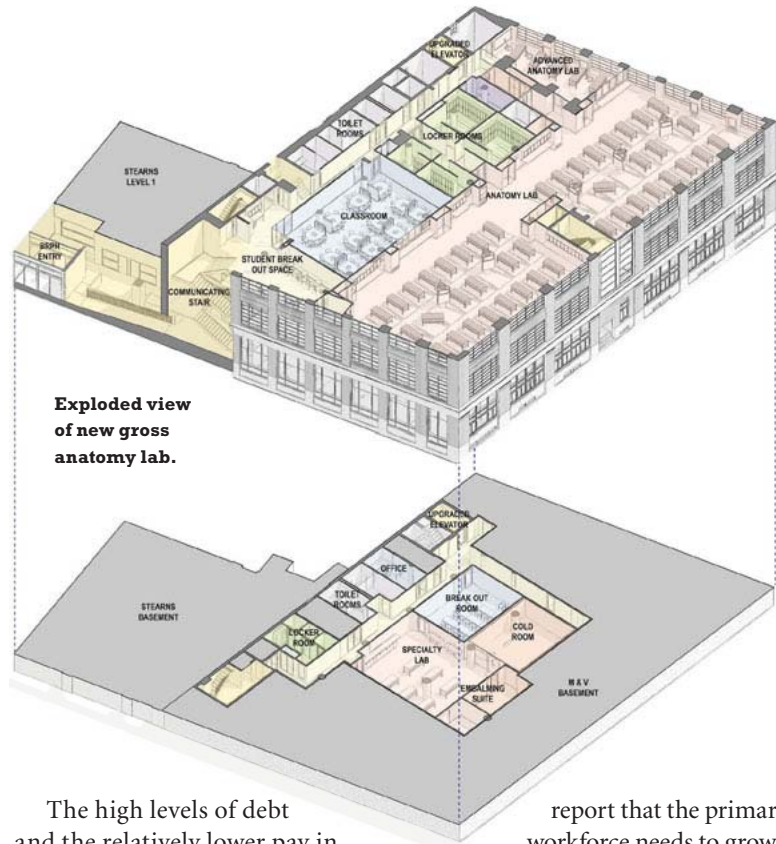


have had to change out of their regular clothes into scrubs in a crowded hallway. “It wasn’t ideal,” Ballatori says. The new lab will include designated changing areas and locker rooms.

### AN UNDERSERVED FIELD

No matter how much the students enjoy their first-year anatomy class, some of them eventually will become interested in practicing family medicine. Unfortunately, family medicine pays less than other medical specialties. The Association of American Medical Colleges reported that a 2014 median first-year, postresidency salary in family medicine was approximately \$187,000, compared to \$285,000 for diagnostic radiology and \$327,500 for general surgery.

This is where the second portion of the Jaharis family’s gift plays a role. Tufts medical students graduate with a lot of debt. In 2015, their average education debt was more than \$205,000, the eleventh highest in the nation, according to Tara Olsen, the school’s assistant dean of financial aid. “We were number two for a long time,” she points out, “so we’ve brought that ranking down significantly. We would like to get out of the top 20.”



**Exploded view of new gross anatomy lab.**

The high levels of debt and the relatively lower pay in family medicine pose a likely deterrent for students when it comes to choosing a specialty. Fewer medical students nationally are entering primary care. “It’s our most underserved field,” Kuhlik says.

The trend has dire implications. To ensure that all Americans have access to health care, the American Academy of Family Physicians concluded in a 2014

report that the primary-care workforce needs to grow from 209,000 to 261,000 by 2025. “Since family physicians currently make up about 38 percent of the primary-care workforce, a conservative estimate is that an additional 21,000 family physicians are necessary to meet their share of the increased need,” the report said.

Kuhlik believes that at least part of the reason for the shortage of family-medicine doctors is this combination of







**Alyssa Wohl, '18, right, meets with Lucrene Oliveira SantiAna and her 9-day-old baby during an appointment at the Family Medicine Department of Cambridge Health Alliance. At right, Amy Hung, '18, with a patient.**



considerable debt and lower pay. Each year, as part of a broader survey, the medical school asks graduating students, How important was debt level in choosing the field you went into? In the most recent survey, 22 percent said debt was a “moderate” factor, and 9 percent said it was a “strong” factor in their decision. “So more than 30 percent of our students called debt a moderate or strong factor” in their specialty determination, Kuhlik sums up. “That’s significant.”

The \$2 million from the Jaharis gift will translate into about \$100,000 annually for eligible students who go into family medicine. The number of recipients will change from year to year. For some perspective: In the class that graduated in May, 16 students matched in family medicine, and of those, six had demonstrated financial need, the main criterion Tufts uses to award scholarships and other aid. “If we were to have awarded the money this year, we would have been able to offer more than \$16,000 in a loan-reduction award for each eligible student,” Olsen says. That amount would reduce both the principal and the corresponding interest charges on a 20-year education loan.

Any loan reductions will be timed to occur between Match Day in March, when students learn where they will do their residencies in their chosen specialties, and graduation in May, so that the Jaharis gift will alleviate eligible students’ overall debt before they even walk out the door. “Every penny counts,” Olsen says. As a corollary benefit, the gift will help Tufts School of Medicine reduce its aggregate student indebtedness and possibly improve its national ranking in that area.

Creating room to move, whether in a lab or in a career, may be considered the animating spirit of the latest Jaharis Family Foundation Inc. gift. But of course it is not up to one family alone, or any single act, to paint a brighter future for the medical school. As part of the gift agreement, the medical school is seeking \$10 million in matching gifts from its alumni, friends and other supporters. “When we make a gift, our family always wants to inspire others to do the same,” Steven Jaharis says. “We hope that the Jaharis Challenge for Medical Education will motivate others to follow our lead and make the medical school one of their charitable priorities.”

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# STARTING OVER AGAIN

How a Tufts residency program is helping a small community of Haitian refugees in Lawrence, Massachusetts.

BY BRUCE MORGAN PHOTOGRAPHS BY ALONSO NICHOLS

**O**N A TUESDAY EVENING NOT SO LONG AGO, SIX PEOPLE WERE SEATED AT A table in a bright, modern room on the second floor of the public library in Lawrence, Massachusetts. For generations, Lawrence has been a city of immigrants—with successive waves of newcomers arriving from such countries as Ireland, Canada, Poland, Lithuania and, more recently, the Dominican Republic and Puerto Rico. One place that has not tended to send people to Lawrence, though, is Haiti. And that, in a way, is why the people around the table were at the library on this night.

The five women and one man are all Haitian refugees who fled their homeland following the massive earthquake in 2010 that killed 230,000 people, injured another 300,000 and displaced a total of one million. In Lawrence, a city of 80,000 people, they are part of a community of just a few hundred, culturally isolated and speaking Creole, a language that is seldom heard in their new home. So there they were at the library, learning to speak English as part of a program organized by, of all things, a health clinic.





Congregants worship at Christian Church Voice of Salvation, one of three Haitian churches in Lawrence.



**J**OSEPH GRAVEL JR., A82, M86, an adjunct professor of family medicine at Tufts, serves as the chief medical officer of the Greater Lawrence Family Health Center, an innovative community resource that opened up in this desperately poor city in 1994. Through its six bustling clinics, the health center tends to 56,000 patients per year, or about two-thirds of the city's population.

"There's a real sense of mission here, and of deep purpose," Gravel said. The GLFHC, in turn, is the parent organization of the Lawrence Family Medicine Residency (LFMR), a highly selective four-year residency program directed by Wendy Barr, M99, LFMR '02, that recruits and trains medical school graduates from around the country for careers in community health.

One of these residents, Clark VanDenBerghe, had the bright idea of creating a weekly English class to help

local refugees thrive in their new milieu.

Leading the hourlong class was Anthony Cimea, a 26-year-old native Creole speaker who was born in Haiti and came to the United States with his family at age 9. "You are walking down the street," Cimea told the group. "A person says, 'Hi, hello,' really informal; you say back, 'Hi, hello.' Repeat it back to them. You may hear, 'How are you?' Then you say, 'How are *you*?' " Cimea looked at his students and said, "So do that: Practice these little conversations." With that, everyone began talking at once, practicing their inflections.

A Mormon, VanDenBerghe was on a two-year mission in France as a younger man when he encountered Haitians for the first time. He said he immediately fell in love with their warm, open-hearted natures. So after completing medical school at Northwestern, and eager to extend and deepen his connections to the

community, VanDenBerghe applied for a spot at the LFMR and was accepted into the program as a member of the Class of 2017.

Several hundred Haitians have settled in this former industrial city, and upon his arrival, VanDenBerghe, who speaks Creole—a more nasal, twangier version of French than anything taught in school—began seeking many of them out as patients. "If I hear someone speaking Creole on the street, I'll go up to them and give them my card," he said. He estimates that as many as 60 Haitians in the city, or about 20 percent of the total number, are now his patients.

VanDenBerghe also approached the three Haitian churches in the city and asked the congregation what they wanted most—an excellent question to pose in medicine or in life. Their answer: to learn English. So VanDenBerghe approached the library, which had already taken some steps in that direction, to set up the weekly lessons. Cimea was hired to teach the classes. The language classes at the library have been discontinued since this story was first reported.



**H**OW ARE THESE students? that's a truly loaded question. They are all people of modest means whose lives were torn apart by the earthquake, which registered 7.0 on the Richter scale. They have landed in a hollowed-out mill city in northeastern Massachusetts dominated by immense brick buildings, once booming textile mills, now largely vacant, that flank the Merrimack River for several miles, their symmetrical rows of window panes mute as sentinels. As refugees of a natural disaster, they are doing the best they can,

**Fourth-year resident Clark VanDenBerghe confers with a Haitian patient in his office.**





**Joseph Gravel Jr., A82, M86, is chief medical officer at the Greater Lawrence Family Health Center, which treats two-thirds of the city's largely immigrant population through six clinics. Below, a scene from the 2010 Haitian earthquake that sent a number of the newest refugees to Lawrence.**

struggling to comprehend verb tenses, colors, seasons, hot and cold, days of the week and everything else that comes with a new language, a new culture and an abrupt change in geography.

It's a classic immigrant story. The Haitians say they want to be able to greet their neighbors and understand the bills that come in the mail. They want to get jobs. They want their children to respect them more.

A huge number of people in Lawrence have been struggling to fit in since the first millwheel began to turn; they don't call this the City of Immigrants for nothing. By 1860, the town's population was 17,639, and 42 percent of residents were foreign born. That included a large contingent of Irish workers who presumably had fled the potato famine back home. In 1890, the population was 44,654, with 45 percent foreign born. In 1990, the immigrant segment was about the same, at 41 percent, although the home regions for those unpacking their bags in the town's tenements had shifted from Europe and Canada to the Caribbean and Central America.

By 2015, about three-quarters of the population was Hispanic or Latino, with new residents arriving mainly from Puerto Rico and the Dominican Republic. Lawrence now claims the nation's second-largest Dominican population, after New York City. And as has



so often been the case when immigrants first establish roots in the States, a large percentage of the children, about 40 percent at last count, are living in poverty.

In a challenging circumstance like this, the Lawrence residency program has made a name for itself. Among people who have graduated from medical school and want to work with underserved populations, Gravel said, "we are in the top tier in the country." When it first began, it was the nation's first accredited family-medicine residency sponsored by a community health center. Now, for its eight openings for residents each year, the program receives a staggering 700 applications, a matriculation rate of about 1 percent.

The program is not kidding about community engagement. Because most Lawrence residents speak Spanish as a first language, new arrivals at the residency program are routinely sent to Dartmouth College for 10 days to cultivate their skills in Spanish. The outreach never really stops. Lawrence doctors-in-training have, among other efforts, sponsored a health clinic at the high school and worked with the local YWCA to promote mammograms among Hispanic women. "You can't just address things in the clinic," Gravel said. "You have to get outside the clinic. What Clark's been doing [by launching the English class at the library] is not aberrant, but typical."

**H**ISTORICALLY, LAWRENCE HAS been a scene of valiant struggle. Nothing comes easy here, or ever has. Conditions in the textile mills in the early 1900s were horrific. Workers toiling in dust-filled, damp and humid rooms—half of them women and children younger than 18—routinely got sick from tuberculosis and pneumonia. The machines themselves were dangerous, often inflicting serious injury. “A considerable number of the boys and girls die within the first two or three years after beginning work,” a Lawrence physician named Elizabeth Shapleigh wrote matter-of-factly at the

evening, a quiz was scheduled for the seven students in attendance (a tall, shyly smiling man wearing a Red Sox ball cap had newly joined the group). One of the class members finished the exercise early and came over, with Cimea acting as interpreter, to talk about her life. Her name was Agathe Bellevue, and she was 37 years old. She had a 16-month-old daughter. Her husband, the family’s only source of income, worked in the kitchen of a nearby nursing home. She’d been in the United States since late 2013, when she and her husband fled Haiti. “She had a fear of being kidnapped by gangs in the streets,” Cimea translated.

simple gesture of offering to help bring these refugees a step closer to American culture, even for an hour, was seen by them as so valuable. When I inquired how welcome they felt in America, they nearly cried. “Oh, this country, everybody welcome you; they put their arms around you. They say hello; they want you to do well, like Dr. Clark,” Bellevue blurted out, glancing toward the young doctor, who stood nearby.

Part of the emotion may owe to the fact that even in their home country, Haitians don’t always feel welcome. In a strange way, collectively, they are no strangers to the degraded-outsider status that refugees sometimes feel in America. VanDenBerghe explained that on their home island of Hispaniola, which includes both Haiti and the Dominican Republic, Haitians are being persecuted right now in the Dominican, where authorities are stepping up efforts to rid the country of them. He saw this firsthand on a recent trip there. “If you’re in the Dominican and you have darker skin, they’ll call you Haitian, and it’s meant as an insult,” he told me. “There’s an undercurrent of racism. In the past few years, police will drive around, watch for people who look Haitian, then pick them up to send them back to Haiti.”

How do you persevere through something like that—through persecution, natural disaster and starting over in a new place? At the conclusion of the first class I attended, I was talking quietly with Cimea and heard a sound beginning very low, just behind me. The six Haitians were standing around the table where they had just been concentrating so hard on learning a new language, beneath the library’s fluorescent ceiling panels and within a moment they were in full voice. “They do this all the time,” Cimea explained. “They are singing a hymn to God.”

**BRUCE MORGAN**, the editor of this magazine, can be contacted at [bruce.morgan@tufts.edu](mailto:bruce.morgan@tufts.edu).

## WHEN I ASKED THE HAITIANS HOW WELCOME THEY FELT IN AMERICA, THEY NEARLY CRIED.

time. “Thirty-six of every 100 men and women who work in the mills die by the time they are 25 years of age.”

Walking around the city, I swung past an empty hulk of a building with “Everett Mill” etched above its arched concrete entry gate. This was ground zero for the Bread and Roses strike of 1912, an epochal event in American labor history in which as many as 25,000 workers, mostly immigrants, refused to accept a pay cut, ultimately winning tighter regulation of child labor and improved compensation for several hundred thousand mill workers around New England. Legend has it that Polish women set off the strike by banging on machinery and chanting, in broken English, “Low pay, no work, low pay, no work.”

More than a century later, in the library, Cimea was working with the city’s newest immigrant group. “When in doubt, just sound it out,” he told his students at the second class I attended. “YELL-ow,” he says. “YELL-ow.” On this

It occurred to me that for all the media coverage that poured out of Haiti in the weeks and months following the earthquake, this was a story I hadn’t heard.

The earthquake did more than destroy structures—in Bellevue’s hometown of Léogâne, near the epicenter, 90 percent of the buildings were reduced to rubble and an estimated 30,000 people died. It also flattened the existing social order and brought on another kind of ruin. “My husband said, ‘We have to get out,’” she recalled. And this harrowing experience was more than hers alone.

VanDenBerghe told me that all of his Haitian patients suffer from PTSD. When I asked the class if they had been living in Haiti at the time of the earthquake, they all nodded their heads, but when I asked what they remembered, they fell silent. Bellevue eventually spoke up. She said she didn’t want to talk about that because it brought back such feelings.

Against this backdrop, it was easy to see how the residency program’s



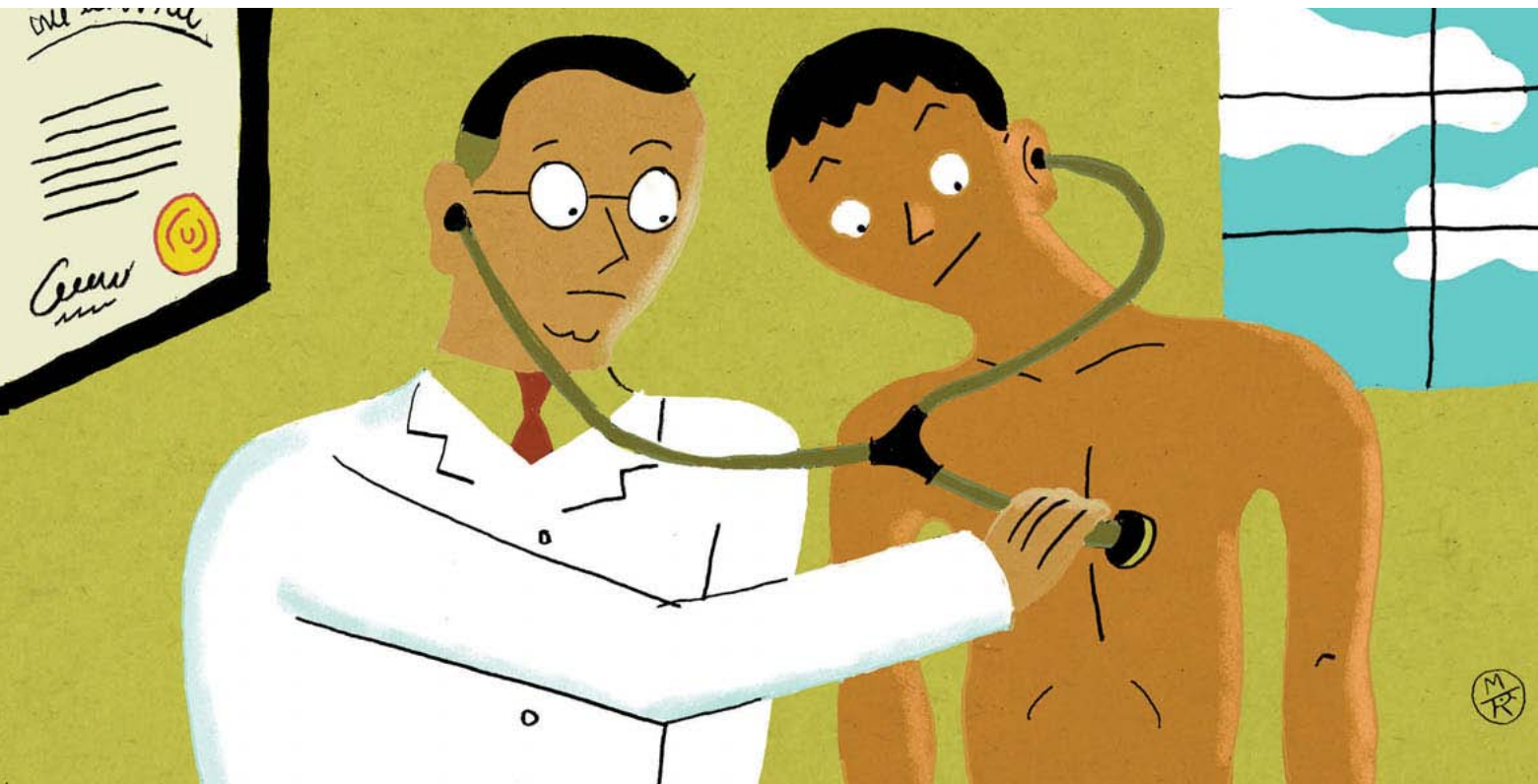
# From All Corners

UNIVERSITY, SCHOOL & ALUMNI NEWS



**HER SILVER METTLE.** Geneva “Gevvie” Stone, ’14, powered through a stretch of rough water to earn the silver medal in women’s single sculls at the 2016 Rio Olympics, trailing the gold medalist by 1.38 seconds. The conditions perfectly matched her skills, which she had honed over years of tough-minded workouts on Boston’s Charles River, even while attending medical school. In November, the athletes and coaches of the U.S. Olympic Rowing Team voted her the 2016 U.S. Rowing Female Athlete of the Year.





## Open-and-Shut Case

John Santa, '76, is leading an effort to make doctors' notes from office visits readily accessible to patients, but not everyone is so eager to see it happen. **BY BRUCE MORGAN**

**I**N HIS TIME working as an internal-medicine specialist at the Portland, Oregon, V.A. between 2003 and 2008, John Santa, '76, got to see the positive effects of his patients being able to go online and review his clinical notes in their medical files.

"A number of my patients told me, 'Gosh, that's great,' and I saw them gain confidence from having full access that way," says Santa, who quickly became a believer in the value of such transparency. From his home base in Portland, he is now leading an effort to spread the message nationwide through an advocacy organization called OpenNotes ([www.opennotes.org](http://www.opennotes.org)).

Not everyone is cheering the trend. "In my travels, I never met a person who couldn't wait to see their note," Santa relates. "Here's something that 99 percent of patients want, according to one study we did, but it's a different story among the doctors." A 2015 *Forbes* poll found that one in six doctors said that no patient should ever see patient notes, and one third

of doctors expressed concerns about the process. Physicians commonly worry that open access will create additional work for them, with patients demanding more time and attention than before—if not during office visits, then afterward, via phone and email. The threat of increased malpractice claims also puts some off.

Despite these hesitations, OpenNotes has grown rapidly over the past five years, according to Marsha Semuels, the former executive administrative dean at Tufts Medical School, who served for a time as administrative director for OpenNotes. Right now, most of the estimated 8.5

million users of the system are concentrated in the Pacific Northwest. The organization's ambitious goal is to enlist 50 million users by 2018 and make sharing notes the standard of care in the U.S.

Will it happen? Not without a struggle, it would seem. "The angst is both technical and cultural," Santa says. Electronic medical records (or EMRs) in the U.S. are currently handled by a raft of independent vendors operating on systems that are not necessarily compatible with one another; Santa puts the total number of vendors between 70 and 100. "Can electronic records bend to support our approach?" he asks rhetorically. So far, just three operating systems are using OpenNotes.

But physicians' cultural resistance to the new, more transparent approach—in Santa's estimation, "a significant control issue"—poses an even keener challenge. "Will doctors support this? That's the major obstacle we're running into," Santa admits. "I had one female colleague tell me, 'John, this is a really bad idea.'" Another doctor who Santa encountered at a professional meeting confided, "Some of us believe that patients just shouldn't be looking at the charts."

Because it's so new, the area has been little explored. But some early research suggests a host of medical advantages accrue for patients given greater access to their medical files. A recent survey of 13,564 patients among three medical sites—one a hospital in Boston (Beth Israel), another a predominantly rural practice in Pennsylvania and the third a safety-net hospital in Seattle—found overwhelmingly positive benefits for patients with minimal costs to physicians' workloads. About 2 or 3 percent of doctors do experience some small changes, Santa concedes.

In the survey, as many as 87 percent of patients reported that having access to open notes helped them feel more in control of their care, and up to 78 percent of those taking medications said they did a better job of taking their medicines on

schedule. The volume of email and other electronic messages from patients to their doctors did not increase. "Many doctors were astonished by how little effect the [open notes] intervention had on their practices. Several wondered whether the intervention had been implemented," the study authors wrote.

At the end of the yearlong pilot study, which was published in the *Annals of Internal Medicine* (October 2, 2012), fully 99 percent of patients wanted the system of open notes to continue, and not a single doctor of the 105 involved in the study chose to opt out.

"Patients accessed visit notes frequently; a large majority reported clinically relevant benefits and minimal

concerns, and virtually all patients wanted the practice to continue," the authors concluded. "With doctors experiencing no more than a modest effect on their work lives, open notes seem worthy of widespread adoption."

Generally speaking, large medical systems have been faster to adopt OpenNotes than small- and medium-sized practices, Santa reports. As one example of success, regional health insurance giant Kaiser Northwest, with some 550,000 patients, readily came aboard. So too did the M.D. Anderson Cancer Center in Houston, Texas. "I would say we're off to a good start," says Santa.

**BRUCE MORGAN** is the editor of this magazine.

## BIANCHI NAMED TO TOP NIH POST

Diana Bianchi, the Natalie V. Zucker Professor of Pediatrics, Obstetrics and Gynecology and a member of the genetics faculty at the Sackler School of Graduate Biomedical Sciences at Tufts, is the new director of the National Institute of Child Health and Human Development (NICHD), an institute founded by President John F. Kennedy in 1962 that forms part of the National Institutes of Health (NIH).

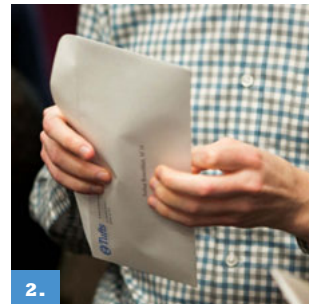
As director, Bianchi oversees research on pediatric health and development, maternal health, reproductive health and intellectual and developmental disabilities. With an annual budget of \$1.3 billion, NICHD supports research grants and contracts at universities and other institutions across the country and overseas. In her new role, she guides international research efforts and federal policy around fetal, maternal, child and family health, among other areas.

A graduate of Stanford Medical School, Bianchi arrived at Tufts Medical Center in 1993 as chief of perinatal genetics. She served on the Tufts Medical Center board of trustees from 1997 to 2008, and in 2010 founded the Mother Infant Research Institute, where her research has focused on developing safer techniques for prenatal diagnosis and treatment in utero. She was elected to the Institute of Medicine in 2013.

"We can think of no better person to take on these responsibilities for our country," said Mike Wagner, president and CEO of Tufts Medical Center and the Floating Hospital for Children.







# FINDING THE FIT ON MATCH DAY

Twenty-one percent of the class is pursuing residencies in internal medicine.

**THE 2016 EDITION** of Match Day brought the usual hugs and shared jubilation as members of the Class of 2016 learned their residency destinations for the coming year. As always, most of the news was both hard-earned and welcome.

“A great majority of our students, something like 85 or 90 percent, got one of their top three choices,” said Dean of Students Amy Kuhlik. “But even more importantly, many matched at programs that were a good fit for what they wanted.”

New England, New York and California drew the largest number of placements, reflecting the pattern

of recent years. Nearly one-fourth of the class will do their residencies in Massachusetts, and five students will pursue military residencies.

Specialty choices also held true to form, with internal medicine attracting 21 percent of the class, anesthesiology claiming 11 percent and pediatrics garnering 9 percent. All surgical specialties combined came in at 31 percent, about typical for recent years. Among possible new trends worthy of note, seven students, or some 4 percent of the class, will do residencies in ophthalmology this year. “That stood out,” Kuhlik commented. “That’s a lot for us.”

- 1. Match Day got an especially festive treatment this year.**
- 2. Opening the letter that holds such big news.**
- 3. Caitlin Kiker learns she will be doing her residency at the University of Virginia, her first choice, and hugs her fiancé, Seth Tourje.**
- 4. Kaitlin Haines and Kelly Jordan earned their first choice of residencies, with Haines joining Yale-New Haven Hospital and Jordan going to Children’s Pediatric Hospital of Oakland, California.**

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- B** **Benevolent beyond belief**
- AB** **Absolutely bounteous**
- O** **Outrageously magnanimous**

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Biomedical Sciences







1. Newly minted doctors recite the Hippocratic Oath. 2. Students line up for their degrees. 3. Laura Wong receives her M.D. hood. 4. Audience members take photos. 5. Darlene Manella hugs her daughter, Haley Manella. 6. Daniel Gerges embraces Namrata Patel, M.D./M.P.H.

## Doing Good in the World

Medical and Sackler graduates set out to improve patients' health and revolutionize science.

**DESPITE THE MANY** changes buffeting the health-care system, with new organizational and payment models constituting a matter of national discourse, speakers remained buoyant at the 124th commencement exercises for the School of Medicine and the 36th for the Sackler School of Graduate Biomedical Sciences on May 22.

Medical Dean Harris Berman

termed it "an extraordinary time" to be entering the world of medicine. After thanking those friends and family members in attendance for their years of guidance and support, he reminded graduates of the basic truth that they had chosen a career in medicine "to do good." Their training and experience now had them poised to deliver on that promise and improve patients'

health in the process. "That is the real reward," he suggested. "Savor it."

Jared Wortzman, medical class president, began his remarks by telling the audience that "medical school is really hard," a fact tempered by the close bonds and kinship of classmates. "We're used to the support of others," he said. "It's all about the community." Wortzman cited the Boston



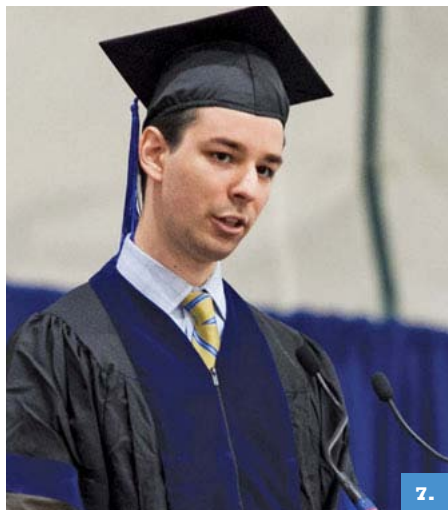
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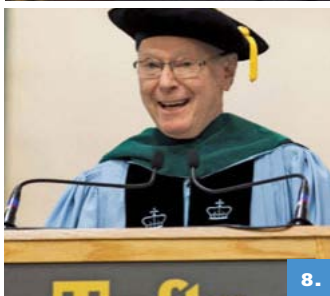
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6.



7.



8.



9.

**7. Sackler student Kevin Goncalves addresses the crowd. 8. Harris Berman, dean, presides over the event. In his remarks, Berman assured the graduates that this is an extraordinary time to be entering the field of medicine. 9. Melody Hermel glances down at her new diploma.**

Marathon bombings of three years ago as having been a formative experience for the graduates.

“Our class came together at that moment,” he remembered, as they offered free housing and meals on social media for the many people affected by the tragedy.

He went on to cite the intense workload of third year, to a round of appreciative laughter from his classmates, before apologizing to the wider audience for all the phone calls, birthdays and other special family events that everyone had been forced to miss as a consequence of the demands of their medical training. Wortzman

ended on a light note. “Despite my mother having introduced me as ‘My son, the doctor’ since I was first admitted to medical school, after today we are all, in fact, doctors.”

Sackler School Dean Naomi Rosenberg had a sense of her school’s collective effort and accomplishment on her mind as she surveyed the audience. “We celebrate these wonderful graduates who have worked so hard, and also our faculty and staff who have given so much to help them reach this day,” she said. “You are entering a world that is more than ready for you,” she assured the graduates, “and you are ready for these challenges.”

Kevin Goncalves gave the Sackler student address. He spoke of how he had arrived at Tufts with expertise in the basic science involved in his studies, but then learned a great deal more from the exploratory culture of the place. “Science is not stationary,” he pointed out. “Great science involves knowing how to ask questions. A finding in our lab was not met with applause, but with the question, ‘What’s next?’ ”

With that spirit instilled in them, Goncalves told his classmates, “I am confident that together we will be part of revolutionizing science.”

—BRUCE MORGAN



## THE FIRST TRILLING PROFESSOR



**JOHN LEONG**, chair of the Department of Molecular Biology and Microbiology, has been named the medical school's first Edith Rieva

and Hyman S. Trilling Professor.

The Trilling Professorship is designed to support an outstanding educator who conducts research related to aging or geriatrics. Leong's lab has a long history of investigating the behavior of bacterial pathogens in the human host. He is particularly interested in addressing the observation that age is accompanied by an increased susceptibility to infection.

Leong's association with Tufts began when he did postdoctoral training with Ralph Isberg, professor of molecular biology and microbiology; he later was appointed an assistant professor of medicine in the Division of Rheumatology and Immunology at Tufts Medical Center. Prior to becoming professor and chair of molecular biology and microbiology in 2011, Leong served as professor and vice chair of microbiology and physiological systems at the University of Massachusetts Medical School.

The endowed professorship was made possible through a gift from Hyman Trilling, a 1928 alumnus of Tufts College, and his wife, Edith. A businessman who studied economics at Tufts, Trilling founded Hub Cash and Carry Groceries, the frozen fish company Boston Bonnie and Boston Bonnie Bakers.

Long interested in the concerns of the elderly, the couple established the Trilling House, an assisted-living center in Randolph, Massachusetts.

**ALUMNI ASSOCIATION  
PRESIDENT**

## OUR SHARED CONNECTION



**LAST SPRING, MY** class celebrated its 45th reunion. I love reunions. They are an opportunity to catch up with classmates and reminisce about our medical school days. A lot of things were different back then—especially the physical plant—but the strong educational foundation that Tufts provides has not really changed. What we learned in the 1970s, and what students continue to learn today, is to approach every patient as a person and to think critically about disease processes and their impact on individuals and communities.

My classmates and I were privileged to be taught by some true giants in medicine—Louis Weinstein, Jerry Kassirer, Bob Schwartz, Larry Cavazos, Bill Schwartz, Alice Ettinger, Sydney Gellis and Jane Desforges, among many others. Decades later, the professors are different, but no less impressive, and students now have the opportunity to earn such combined degrees as the M.D./M.P.H., M.D./M.B.A., and M.D./Ph.D. Students often come to Tufts having already had a career in teaching or business; they are a talented group.

I came to Tufts School of Medicine from Cornell, where I met my husband. As he began his engineering career, I started school, one of about 23 women in a class of 120. That is, of course, another big change that has occurred over the years—these days, women make up at least half of each entering class. As a third-year student, I fell in love with pediatrics, and that devotion continues to this day, although I am no longer in active practice.

I remain engaged with the Tufts community through our Medical Alumni Association, and encourage all of you to do the same. The learning never ceases. In fact, at the moment, I am emulating our M.D./M.B.A. students. Through the Tufts affiliation with Brandeis University's Heller School, including tuition support offered to Tufts medical alumni, I am enrolled in the executive M.B.A. program for physicians.

As I embark on my presidency, I invite you to stay in touch. Keep abreast of what is happening at the medical school—there is so much! Give us your news and suggestions. I would love to hear from you.

**CAROLE E. ALLEN, '71**  
President, Tufts Medical Alumni Association  
[tmaapresident@tufts.edu](mailto:tmaapresident@tufts.edu)

# Class Notes

## 1956

**ALBERT ROTHENBERG** of Canaan, New York, has been honored for his six decades of practice in psychiatry with his inclusion in *Marquis Who's Who*, a biographical reference book. A former professor of psychiatry at Yale, the University of Connecticut and Harvard, Rothenberg has practiced psychiatry in Massachusetts, Connecticut and New York.

## 1959

**ANDREW BLAZAR** of Providence, Rhode Island, received a Distinguished Alumni Award at the 10th annual Classical High

School Distinguished Alumni Award event in Providence on April 25, 2016. He graduated from Classical in 1951. Blazar is an emeritus clinical professor of gynecology and obstetrics at Brown University's Alpert School of Medicine, and his specialty has been treating infertile couples.

## 1968

**BRAD STEPHENS**, A96P, of Joseph, Oregon, has been named to the Eastern Oregon University board of trustees. An orthopedic surgeon who retired in 2014, Stephens was formerly a team

physician for Eastern Oregon University, where he helped teach courses on athletic injuries. He also served as medical director of the U.S. Olympic Training Center in Lake Placid, New York.

## 1971

**MARILYN LANGE** of Toluca Lake, California, a pediatrician for more than 42 years, is treating patients in a private practice in Burbank, California, where she is also on staff at Providence Saint Joseph Medical Center. She was recently listed in *The Leading Physicians of the World*. Lange now has

second-generation families in her practice and is known for taking a great deal of time with her patients. When she's not working, she enjoys sailing and gardening.

## 1976

**JOHN RICHMOND** of Hingham, Massachusetts, a professor of orthopedic surgery at Tufts and an orthopedic surgeon and medical director for network development at New England Baptist Hospital, has been named president of the Arthroscopy Association of North America, an organization comprising more than 3,600 doctors.



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"It is a great honor to be elected by my peers to lead such a talented group of physicians," he said.

## 1979

**SUZANNE TOPALIAN** of Brookeville, Maryland, has been studying ways to harness the human system to fight cancer for more than 30 years, including 21 years spent in the surgery branch of the National Cancer Institute. In 2006, she was named head of the melanoma program at the Sidney Kimmel Comprehensive Cancer Center at Johns Hopkins Medicine in Baltimore. This past June, she was recognized for her groundbreaking work in immunotherapy when she was named a joint winner of the 2016 Taubman Prize for Excellence in Translational Medicine. The two winners shared a \$100,000 prize, which is awarded by

the University of Michigan's A. Alfred Taubman Medical Research Institute.

## 1982

**MARK ALBERTS** of Hartford, Connecticut, long recognized for his ability to help develop national standards for hospitals to qualify as stroke centers, has been appointed physician-in-chief of the Hartford HealthCare Neuroscience Institute; he will begin his new job in early 2017. Alberts will also serve as chief of neurology at Hartford Hospital.

## 1983

**KITT SHAFFER** of Cambridge, Massachusetts, a professor of radiology at Boston University School of Medicine and vice chair of education at Boston Medical Center, received the 2016 Alliance of Medical Student

Educators in Radiology Excellence in Education Award, which honors an educator judged to have contributed the most to medical student radiology education in the United States. "Dr. Shaffer's tireless dedication to medical student education is remarkable, and we are incredibly fortunate and proud to have her among our BU faculty," said Jorge Soto, professor of radiology and vice chair of research at Boston University School of Medicine.

**HOWARD TRIETSCH**, E10P, of Longmeadow, Massachusetts, a longtime community physician activist, has been named by Baystate Health, a nonprofit health-care system serving more than 800,000 patients in western New England, to direct new collaborative partnerships with community physicians and providers. Trietsch, an ob/gyn, has been a member of the medical staff of Baystate Medical Center since 1987 and served on the Baystate Health board of trustees from 2006 to 2014.

## 1987

**PHILIP KIELY** of Morrisville, Vermont, was honored in May by the Bi-State Primary Care Association, an organization serving Vermont and New Hampshire, with the Outstanding Clinician Award, which singles out "primary-care clinicians from the two states whose exemplary skills and service have made a significant impact on the health of underserved patients and the community in which they serve." For more than 20 years, Kiely has provided primary medical care to thousands of residents of Lamoille County, Vermont.

## 1988

**HAROUT DERSIMONIAN**, Ph.D., has been appointed chief scientific officer of Biostage Inc., a Holliston,

Massachusetts, biotechnology company that is developing bioengineered organ implants. He directs the cell biology, materials science and other scientific research that forms the basis of Biostage's Cell-frame™ technology platform.

## 1989

**SCOTT COHEN** of Oakland, California, provides basic health care to poor, rural areas in three Latin American countries through the Global Pediatric Alliance (GPA), a San Francisco-based organization that he founded in 2002. A former Albert Schweitzer Fellow in Africa, Cohen was volunteering in the jungles of eastern Guatemala in 2002 when he had the idea, as GPA says in its mission statement, "to improve child and maternal health by providing educational, technical and financial support to community-based health programs in Latin America."

## 1995

**TIMOTHY PAWLAK**, of Cockeysville, Maryland, a nationally recognized surgeon and liver cancer expert, has been named chair of the Department of Surgery at Ohio State University, where he also holds the Urban Meyer III and Shelley Meyer Chair for Cancer Research. Pawlak had been at Johns Hopkins since 2005, serving as a professor of surgery and of oncology and chief of the Division of Surgical Oncology.

## 1996

**DEBORAH HARRIGAN** was inaugurated as the 185th president of the New Hampshire Medical Society on November 5. She is a family medicine physician and medical director of the ambulatory physician practices at Frisbie Memorial Hospital in

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**Tufts Alumni**

Rochester, New Hampshire. She is currently the physician champion for the hospital's implementation of the MEDITECH electronic health records system. Harrigan is a member of Frisbie's Medical Executive Committee, the Medical Staff Bylaw Committee and the Technology Assessment and Steering Committee.

**CHRISTOPHER KEROACK** of Ludlow, Massachusetts, medical director of the Pioneer Valley Weight Loss Centers, has a new book out, *Changing Directions: Navigating the Path to Optimal Health and Balanced Living*. He has consulted and spoken widely on the challenges of weight loss and body composition.

## 1999

**JULIE BAUMAN**, M.D./M.P.H., of Pittsburgh, Pennsylvania, a head and neck cancer specialist, has been appointed professor of medicine and chief of the Division of Hematology and Oncology at the University of Arizona College of Medicine-Tucson and the UA Cancer Center. For the past four years, she has been associate professor of medicine at the University of Pittsburgh Cancer Institute and codirector of

the Head and Neck Cancer Center of Excellence at the University of Pittsburgh Medical Center. "For me, it's a homecoming," Bauman says. "I was raised in Tucson. The Southwest is my home, my community and my culture. Returning to a leadership position at a Southwestern cancer center in an underserved state seems like the natural step for me in terms of my service."

## 2003

**LAURA DOMINICI** of Scituate, Massachusetts, is the new Division Chief of Breast Surgery at Brigham and Women's Faulkner Hospital. As a breast cancer surgeon, she has been operating at the hospital for the past seven years and seeing patients in clinic for five years.

## 2008

**PETER CHANG**, a retina specialist, has joined the staff of the Massachusetts Eye Research and Surgery Institution (MERSI) in Waltham, Massachusetts, as an associate partner. He joins MERSI after two years of fellowship training in vitreo-retinal surgery at the Illinois Eye and

Ear Infirmary in Chicago.

**VICKI P. LOSICK**, Ph.D., a scientist at the MDI Biological Laboratory, a nonprofit biomedical research institute in Maine, reports that she has discovered a new mechanism for wound healing in fruit flies in which wounds are healed through cell growth. Instead of making more cells, the flies make bigger ones. The discovery may have important implications for degenerative diseases, such as heart disease.

## 2009

**DANIEL KAHN** married Eliza Rosenbaum on Sept. 24, 2016, and the couple will spend all of 2017 in Malawi, Africa, where he will be working at an HIV clinic while continuing to direct the internal medicine global health pathway at UCLA from abroad.

**THEODORE MACNOW**, A05, M09, of Belmont, Massachusetts, a specialist in pediatric emergency medicine, has joined the UMass Memorial Medical Group in Worcester. He completed his residency at New York Presbyterian Morgan Stanley Children's Hospital and a fellowship program at Boston Children's Hospital.

**GRACE MITCHELL**, A03, M09, of Kansas City, Missouri, and her husband, Lachlan Taylor, welcomed their first child, a daughter, on March 9, 2016. They named her Odette Sakura Taylor ("sakura" being the Japanese word for cherry blossom). Mitchell is a pediatric radiologist at Children's Mercy Hospital in Kansas City.

## 2016

**KELLY BROOKS** and **STEPHEN RANNEY**, of Burlington, Vermont, are engaged and plan to marry in Maine in the summer of 2018. He is in the general surgery residency program, and she is in the family medicine residency program at the University of Vermont Medical Center. "We are living in beautiful Burlington and loving it here," Kelly writes.

**SARAH BISSONNETTE** and **PHILIP ELIADES**, of Boston, are engaged and plan to wed in Newport, Rhode Island, in June 2017. Both are interns in Beth Israel Deaconess Medical Center's transitional year program at Signature Healthcare Brockton Hospital. Both will head to Cornell next year for dermatology (Phil) and radiology (Sarah) residency training.

# In Memoriam

**S. JAMES BEALE**, '42, of Jacksonville, Florida, died on May 4, 2016, at age 100. He was a family physician in the Jacksonville area for many years, delivering babies and performing surgery. He retired from practice at age 65. During World War II, he served in the U.S. Army Medical Corps in France, Belgium and Germany, leaving the service at the

rank of captain. He is survived by five children, 10 grandchildren and 25 great-grandchildren.

**RICHARD BARRONIAN**, '50, of Tacoma, Washington, died on June 29, 2016, at age 98. He served in World War II as a forward observer with an armored field artillery division in Italy, France, Germany, Central Europe and North Africa,

leaving the service at the rank of captain. He was awarded the Bronze Star and a Purple Heart. Barronian practiced internal medicine for 35 years at several hospitals in Tacoma, including a term as president of the medical staff at Tacoma General Hospital. He is survived by his wife, Emily, four children and seven grandchildren.

**ALICE LANDIS**, '51, of Hampton Falls, New Hampshire, where she had lived for 52 years, died on July 5, 2016, at age 94. She is survived by six children, 10 grandchildren and many great-grandchildren.

**JOHN JAPP**, A50, M54, of Carlisle, Massachusetts, died on March 11, 2016. He had practiced medicine for more than 40 years in

neighboring Bedford, Massachusetts. He is survived by his children, Betsy, Robert and Paul, as well as seven grandchildren and five great-grandchildren.

**DOUGLAS MCKAY**, '55, of Milbridge, Maine, died on May 26, 2016, at age 89. He had a distinguished career as an orthopedic surgeon, including tenure as chief surgeon at hospitals in New Mexico and Louisiana and as chair of orthopedics at Children's Hospital in Washington, D.C., from 1972 to 1988. He is survived by his wife, Elinor, three children and four grandchildren.

**ALAN ROTHSTEIN**, A52, M56, of Brookline, Massachusetts, died on May 13, 2016, at age 85. A retired psychiatrist, he had practiced at Boston State Hospital, Mystic Valley Clinic, Newton-Wellesley Hospital and at his home office for more than 50 years. He is survived by his wife, Natalie, three children and five grandchildren.

**PETER PATTERSON**, '57, of Lee, New Hampshire, died on September 9, 2016, at age 84. A native of the coast of Maine, he worked as a commercial lobsterman to finance his college and medical school educations. He practiced medicine in the field of college health, including terms at the University of New Hampshire, where he was the medical director and hockey team physician, and at Tulane University. He is survived by his wife, Alana, three children, eight grandchildren and two great-grandchildren.

**PAUL HAMLIN**, '58, of Presque Isle, Maine, died on April 13, 2016, at age 83. He enjoyed a successful urology practice in Presque Isle for almost 30 years. Previously, while serving in the U.S. Air Force, he was a flight surgeon who worked with the Thunderbirds. He was the vice president of medical affairs at the

Aroostook Medical Center before his retirement in 1997. He is survived by his wife, Jean, four children and six grandchildren.

**JULIAN ELIGATOR**, A55, M59, of Pittsburgh, Pennsylvania, died on August 18, 2016. For 35 years he was an internist and later medical director of the Russelton Medical Group and the HMO of Western Pennsylvania, which provided medical care to coal miners and their families. Eligator, who had a deep, abiding social compass and concern for social justice, was active in Physicians for Social Responsibility and also International Physicians for the Prevention of Nuclear War. He is survived by Rhoda, his wife of 60 years, three children and seven grandchildren.

**KENNETH BEAN**, A56, M60, of Avon, Connecticut, a psychiatrist affiliated with Bristol Hospital and Counseling Center in Bristol, Connecticut, for 56 years prior to his retirement, died on May 6, 2016, at age 82. He enjoyed traveling the world, painting, charcoal sketching, photography, theater and dining with his wife and family. He is survived by his wife, Mary, four children and six grandchildren.

**CAROLYN CARR**, J61, M65, of San Francisco, California, died on June 30, 2016, at age 75. Born in Boston and one of three women among more than 100 students in her medical school class, she practiced internal medicine at hospitals in Massachusetts and California. She is survived by two daughters.

**MAX DINE**, A62, M66, of Glendale, Arizona, died on June 3, 2016, at age 76. He had a successful oncology practice in California before retiring to Arizona. He improved the lives of many by raising awareness and helping to eradicate stigma for those suffering from mental illness. He is survived

by his wife, Sharon, two children and four grandchildren.

**MAURICE GILLESPIE**, '67, of Monterey, California, died on June 23, 2016, at age 75. He was a battalion surgeon with the 3rd Marine Division in Vietnam, where he earned the Bronze Star with Valor and the Vietnamese Cross of Gallantry in 1968. He subsequently became a pediatrician who worked at the Fresno (California) Children's Medical Group for 40 years, retiring in 2013. He is survived by his wife, Patricia, five children and 10 grandchildren.

**ALAN GOLDBERG**, '69, of Albuquerque, New Mexico, died on July 20, 2016, at age 72. A psychiatrist, in the 1970s and 1980s he was a pioneer in the detox phase of addiction treatment, devising methods to treat addiction that are commonplace today. He was a founding member of the American Academy of Addiction Psychiatry. He worked for several charities and had a thriving private practice. He is survived by his wife, Valerie, three children and four grandchildren.

**KATHERINE LAPIERRE**, '82, of Cambridge, Massachusetts, died on July 1, 2016, at age 60. Trained in psychiatry, she worked at the Harvard University Health Services for the past 20 years, including five years as chief of counseling and mental health services. She also maintained a private practice. She is survived her husband, Peter.

## Faculty

**SAMUEL BRENDLER** of Suffield, Connecticut, professor of neurosurgery from 1953 to 1970, died on September 28, 2016, at age 94. He was born in New York City and graduated from New York University College of Medicine. He left Tufts to move to western Massachusetts and establish a private practice in

neurosurgery at Holyoke Hospital. He is survived by his wife, Heinke, five children and three grandchildren.

**LAWRENCE HESSMAN** of Andover, Massachusetts, died on July 11, 2016, at age 79. After retiring from his career as a gastroenterologist and internist, he taught medical ethics and served for a decade on the Tufts School of Medicine admissions committee. He is survived by his wife, Erika, two children and four grandchildren.

**LEON SHAPIRO**, a professor of psychiatry, died on August 17, 2016, at age 89. While on faculty at Tufts, he took part in civil rights marches in Selma, Alabama. He later worked with underserved communities at the Tufts health centers at Columbia Point, Massachusetts, and Mound Bayou, Mississippi. He is survived by his wife, Laurie, three children, eight grandchildren and seven great-grandchildren.

**LEONARD SMITH**, who joined the Tufts medical faculty in 1984, initially serving as director of general ob/gyn at St. Margaret's Hospital and as associate residency director at Tufts, died on July 27, 2016. He joined the staff of the New England Medical Center (now Tufts Medical Center) in 1989 as senior surgeon, division director and student clerkship director. He received numerous awards for teaching excellence, including those given by Tufts residents and the American Association of Obstetrics and Gynecology. During his time at Tufts, he was invited on four occasions to share his expertise in Saudi Arabia as an external medical student examiner and hospital consultant. He retired from active practice in 1995 and from teaching in 2001, earning the title of clinical professor of obstetrics and gynecology emeritus. He is survived by eight children and 24 grandchildren.





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# On Tough Choices

When patients refuse treatment. **BY ALAN S. ROCKOFF, M.D.**

**H**OW DO YOU treat a patient who doesn't want to be treated? It depends. If the problem is acne or a wart, it's all right to let it go. Harriet, however, has HIV. And a facial basal cell carcinoma. Now what? Perhaps it still depends.

After showing me a red spot on her right cheek, Harriet put me on notice right away. "I don't believe in unnecessary treatments," she said. I asked her what she meant. "I've been HIV-positive since the mid-1980s," she said. "Last year my doctor wanted to pump me full of those poisons. So I changed doctors."

"What does your new doctor think?" I asked.

"My T-cell counts aren't very good. He also thinks I should take those medicines, but I don't see him much. I went to another dermatologist about a different problem. He got very angry at me, because I had called in advance to ask not to be seen by a resident. They told me that would be OK, but the resident showed up anyway. When the doctor also came in and I tried to explain, he threw me out of the clinic."

By now I'd gotten the picture: Harriet has her own ideas about

things and is not about to take advice with which she doesn't agree. What makes Harriet different is not that she ignores medical advice—people do that all the time—but that she comes right out and says it to the doctor's face. Others wait till they get home. So what do you do when a patient shows that he or she is ready to look you in the eye and turn you down flat?

One response is to leave the room in a huff. After all, who's the expert here, and who's trying to help whom? That reaction is understandable, but if the doctor walks out, who is being helped?

There is, of course, another approach, which is to suppress the ego and ask: What are the actual medical stakes, and what is the worst that could happen if a patient refuses treatment? What realistic options, if any, are there to change a patient's mind? Why is the patient behaving that way?

In Harriet's case, what are the medical stakes? I am no HIV specialist, but how many patients who seroconverted in the 1980s are still around to consider their options? (Other such patients have told me their doctors really don't understand how patients like them survived.) If Harriet is sexually inactive and does not try to donate blood, how

sure are we that she isn't better off doing nothing? What other options are available to change her mind?

Before turning to my third question, I have to plan what to do if the biopsy confirms my clinical diagnosis of basal cell. I will inform Harriet and recommend Mohs surgery. Suppose she refuses and wants a lesser procedure, or no surgery at all. What then?

If the patient is elderly, and the lesion is not near a strategic organ, such as the eye, it may be acceptable just to watch it. Some basal cells grow fast; others barely grow at all. If Harriet decides to do nothing, I could explain my preference—surgery—and her risks, such as lesion growth and bigger surgery later, and insist on seeing her every two months.

Which brings us to our third question: Why is Harriet being noncompliant? There are two possibilities. The first is fear. Scared people often act aggressively. Calmed down, they relent. The second is that Harriet is what the English call "bloody minded," in other words, deliberately uncooperative.

Battling with the bloody minded is not helpful for anybody. Negotiating with difficult people is much less gratifying than giving advice and being respectfully thanked for our efforts and expertise. Sometimes, though, the best we can do is to swallow our professional pride, try to alleviate what fear we can, and push only as hard as clinical risk truly justifies. This is not always easy to do, but it certainly may be the best available alternative.

Harriet's biopsy showed a basal cell. She readily agreed to surgery.

So you never know.

**ALAN ROCKOFF** is a clinical assistant professor of dermatology at Tufts and a regular contributor to *Dermatology News*, where a version of this essay first appeared. It is reprinted here with permission. This fall, he published *Act Like a Doctor, Think Like a Patient: Teaching Patient-Focused Medicine*.



I wouldn't be  
where I am today  
if not for Tufts.

"You never forget the people who helped you along the way," says Dr. Jim Reed, M84. That's why he maintains close ties to his role model and one-time pathology lab supervisor Dr. Vivian Pinn, H93, former professor and assistant dean of student affairs. In her honor, he and his classmates established the Vivian Pinn Scholarship Fund to support underrepresented students, and he has named the fund a beneficiary of his life insurance policy. • Bolstering financial aid is important to Jim because it was instrumental in his success as a physician. Weeks into his first year, Jim discovered his family could not shoulder the burden of paying tuition for him and his sister. The financial aid office directed him to the National Health Services Corps, through which he could work in an underserved area to offset his tuition. Jim was assigned to work at the Federal Bureau of Prisons in Oxford, Wisconsin, and while initially wary, he enjoyed having daily interactions with his patients and ended up working there as the medical director for 22 years. • Now retired, Jim serves on the Tufts Medical Alumni Association's executive council. "I am pleased that my planned gift will help to strengthen the medical school's efforts to continue to attract a diverse student body," he says.

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## PEAK PERFORMANCE

Last spring, one of our students joined an ongoing study of mountain climbers' cognitive skills on the flanks of Mount Everest. The job was every bit as challenging as it sounds.

READ THE STORY ON PAGE 12