



BROWN MEDICINE

Volume 14 | Number 1 | Winter 2009

A magazine for alumni and friends of The Warren Alpert Medical School of Brown University

Beyond Black and White

Why isn't medicine
more diverse?

PLUS:

ER DOCS ARE READY
FOR ANYTHING

25 TO DOS



No Stopping

I have been dean of the Division of Biology and Medicine for six months now, and with the help of students, faculty, and staff have been able to clarify our mission as well as the opportunities and difficulties that lie ahead.

What none of us knew in July was that a financial meltdown would affect not only each of us personally, but also our departments, Brown University, and our hospital partners. Over the next several years, we will need to work together to preserve our core mission of research, education, and clinical care. We will need to husband our resources more carefully and think more strategically. Having said that, we will not be deterred from our long-term goals.

I recently traveled to New York City, Los Angeles, and San Francisco to give alumni and donors an update on the Division and plans for the future. The Medical School Committee of the Corporation and the Advisory Council for the Division also met last fall on campus. The support of the Brown alumni is remarkable. They are intensely interested in the welfare of Brown and in insuring the future success of all of us. They also give excellent advice about how to reach this goal.

I have convened retreats with the leadership of the programs in Biology and Public Health, groups of medical students and graduate students, and with the chairs of the clinical departments. These meetings have been extremely important in helping me determine the priorities of the various stakeholders and clarify needs and opportunities.

The empowerment of Division chairs, support for research faculty, financial support for graduate students, and study space for the medical students have been established as priorities. We have named first-rate faculty to important clinical positions, including Dr. Robert Klein as chair of Pediatrics and Dr. Frank Sellke as chief of cardiothoracic surgery. The search committee for the chair of Medicine, headed by Dr. Michael Ehrlich, chair of Orthopaedics, has selected a search firm, Korn/Ferry. In the next year, we will also recruit chairs of Neurology, Neurosurgery, and Psychiatry and Human Behavior. We will use our strong clinical and academic base to recruit outstanding chairs for all four departments.

The financial crisis has forced us to be even more creative in our strategic approach, but planning for the Medical School building continues. Relations with our hospital partners are excellent. Meetings with the senior leadership of Lifespan have resulted in a joint agreement about our strategic planning and resources; only the details remain to be worked on. Brown and each of its affiliated hospitals realize how critical improving our partnership is. With a more collaborative and conjoined model we will know even greater success, both academically and in the marketplace.

Edward J. Wing



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“Published studies have shown that it makes a difference if you have a more diverse medical school in terms of student satisfaction and how well they do in the real world, with their patients.” — Emma Simmons MD’91 MPH’04

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BY SHARON TREGASKIS

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BY KRIS CAMBRA

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COVER ILLUSTRATION | KRISTIN DIVONA

SCOTT KINGSLEY ALAN MUNNEY ALPERT MEDICAL SCHOOL ARCHIVE

Not Your Mother's ER

By the time I left the United States, in the 1980s, I had stepped on enough rusty nails and fallen off my bike enough times to know what a trip to the ER was like—endless, inexplicable waiting, a TV set playing without sound, and, invariably, lots of people who looked far more severely wounded than I.

When I moved back, in 1999, I was shocked when a receptionist in a doctor's office suggested I take my son, who was on his *n*th ear infection and simply needed an antibiotic, to the nearest emergency room. I didn't do it—it seemed inappropriate, if not dishonest. Wouldn't I have to pretend his condition was more serious than it was? Wouldn't I have to pretend I *thought* it was? I now understand that her suggestion was as good as she could give someone who, like me at the time, had neither a doctor nor health insurance.

Even as emergency medicine has come into its own as a specialty, the number and variety of jobs it is asked to perform in our society have grown daunting. These changes, as well as science and research, are explored in this issue through the impressive lens of Brown and its teaching hospitals. I've visited a Brown-affiliated emergency department (as ERs are now called) twice in the past 10 years and each time was so impressed with the care that I wrote the hospital CEO to say so. I hope you don't find yourself in one any time soon, but if you do, you'll be in good hands.



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EDITOR

Sarah Baldwin-Beneich '87

ART DIRECTOR

Kristin DiVona

STAFF WRITERS

Kris Cambra, Lisa Rowley

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INBOX



PROPS

It's been a cold winter here in New England, but two bright spots recently warmed our hearts.

Brown Medicine received a **gold medal in the Magazines – Best Overall** category of the Council for Advancement and Support of Education District I awards.

The article “Safekeeping” (Winter 2008), by Paul Christopher, MD HS’, **received an Award of Excellence** from the Association of American Medical College’s Group on Institutional Advancement.

COLLABORATION 2.0

I opened the fall *Brown Medicine* looking for the article on [narrative medicine and] the Doctoring course, which I am in my first year of teaching.

Fortunately I turned over the last page and saw some familiar names, which encouraged me to read the next article on bioengineering. It was fascinating for me, a clinician in the trenches, to see how experts from so many diverse disciplines are coming together to create exciting, “outside the box” advances in medical technology. Work on the intersects of different specialties—materials science, computer science, physics, orthopedics, radiology, and emergency medicine, for example—seems to be yielding extraordinary dividends. And thank you for also highlighting the complexities of uniting medicine with entrepreneurship and

intellectual property issues.

I hope this kind of reporting inspires more collaboration between clinicians, basic scientists, and engineers.

Joshua Gutman, MD P’02, P’06
*Clinical Assistant Professor of
Family Medicine
Alpert Medical School*

AND NOW FOR SOMETHING COMPLETELY DIFFERENT

I’m writing as a mere layperson to praise the quality of your magazine. I’m married to a doctor and therefore am exposed to many medical publications, most of which are on the dry side. But *Brown Medicine* is characterized by good writing, clear and arresting lay-

out, and an overall spirit of engagement and inquisitiveness. It makes for good reading—and thinking!

Henry Hammond ’87
Marblehead, MA

SPEAK UP

Brown Medicine welcomes readers’ letters, which may be edited for length or clarity.

Brown Medicine
Box G-S121-9
Providence, RI 02912
brown_medicine@brown.edu

THE BEAT

WHAT'S NEW IN THE CLASSROOMS, ON THE WARDS, AND IN THE LABS



Breaking Ground

\$6 million center for veterans care planned at VAMC.

HOSPITAL On a bone-chilling morning last November eight shovels went into the ground at the Providence VA Medical Center's main campus. The groundbreaking ceremony marked the spot of the future Rehabilitation Research Building at the main campus of the Providence VA Medical Center. Funded with \$6 million from the Department of Veterans Affairs, the building will comprise nearly 24,000 sq. ft. of basic science and clinical research space dedicated to comprehensive interdisciplinary rehabilitation research for veterans. As the site of the Brown University/VA Center for Restorative and Regenerative Medicine, it will house research programs to help veterans with amputations, traumatic brain injury, neurodegenerative diseases, and post-traumatic stress disorder.

All together now (left to right): William Gilbane, President, Gilbane Building Company; Pamela O'Neil, Associate Provost, Brown University; Representative James Langevin, United States Congress; Michael Mayo-Smith, MD, MPH, Network Director, VA New England Healthcare System VISN 1; Senator Jack Reed, United States Senate; Michael J. Kussman, MD, MS, MACP, Under Secretary for Health, VHA; Michael "Mickey" Selzer, MD, Director, Rehab R&D; and Vincent Ng, Director, Providence VAMC.

COURTESY PROVIDENCE VA MEDICAL CENTER

Let's Stick Together

Program will train, mentor minority researchers.

GRANT The National Institutes of Health has awarded a \$1.2 million grant to Professor of Medicine Timothy Flanigan to launch a new training program aimed at helping promising minority researchers develop successful independent research careers in HIV/AIDS prevention.

The five-year grant will create advanced training and mentoring opportunities for minority postdoctoral investigators and junior faculty members, with a focus on the African-American community. This multidisciplinary collaboration will gather researchers in behavioral medicine, infectious diseases, and community health from Alpert Medical School, The Miriam Hospital, and three historically black colleges and universities: Jackson State University and Tougaloo College, both in Mississippi, and Dillard University in New Orleans.

"Few minority students pursue clinical research careers, even though the incidence of HIV and AIDS continues to rise at a disproportionately high rate in minority communities," says Flanigan, who is also director of infectious diseases at The Miriam Hospital. "Minority researchers have an intimate understanding of the issues in their own cultures and communities that can influence HIV prevention efforts. If we hope to reduce racial and ethnic health disparities...we must increase the number of minority investigators conducting independent research in these areas."



KRISTINDIVONA ISTOCK



The Price of Freedom

It may be a handout, but is that sample safe?

FINDINGS Free prescription drug samples distributed to children may be unsafe, according to a study by physicians from Alpert Medical School, Hasbro Children's Hospital, and Cambridge Health Alliance, a Boston-area health system. The national study, the first to look at free drug sample use among children, appeared in the October 2008 issue of *Pediatrics*.

The authors found that children commonly receive free drug samples from their doctors. Among children who took at least one prescription drug in that year, nearly one in 10 got free samples.

The U.S. Food and Drug Administration identified significant new safety concerns for four of the 15 most frequently distributed samples in 2004. These four acquired new black box warnings or had significant revisions to existing black box warnings issued since 2004.

Although some physicians support free drug samples as a way of getting medications to poor patients, the study found that more than 80 percent of children receiving samples were insured, less than one-third had low family incomes, and minority children were less likely to receive them than white non-Hispanic children. The authors concluded that free sample distribution does not equalize medication access for needy children.

"Free samples encourage the casual use of medications in our children before enough is known about potential harm. As a mother of young children, I find that very concerning," commented lead author Susan Cutrona, a physician at Cambridge Health Alliance and an instructor of medicine at Harvard Medical School.

Senior author Neal LeLeiko, director of pediatric gastroenterology and nutrition at Hasbro Children's Hospital and a professor of pediatrics, added, "Previous findings in adults strongly suggest that free drug samples serve as a marketing tool. Our study shows that samples can pose a serious and unappreciated risk to our children."

Nearly one in 10 children taking prescription medication receives free drug samples.

Cry, Baby.

Smoking mothers make for cranky babies.

FINDINGS A new study by Brown researchers, published online by the *Journal of Pediatrics*, has found that babies exposed to tobacco in utero are less likely to self-soothe and are more aroused and excitable than newborns whose mothers did not smoke during pregnancy.

“A baby who is harder to soothe and more irritable could be more difficult to take care of and could potentially affect the developing mother-child relationship, especially for mothers who are already stressed and have fewer resources,” says lead author Laura Stroud, an assistant professor of psychiatry (research). “In combination with a high-stress postnatal environment and deficits in parenting, [the effects of maternal smoking] could represent early precursors for long-term, negative behavioral outcomes.”

Stroud, a psychologist with The Miriam Hospital’s Centers for Behavioral and Preventive Medicine, adds, “We need better treatment programs to help women not smoke during pregnancy, to keep them from starting smoking after the baby is born, and to help them take care of an excitable or colicky baby.”



Behold the Mighty Quahog

Common clam thrives in so-called dead zone.

FINDINGS Coastal dead zones, an increasing concern to ecologists, the fishing industry, and the public, may not be as devoid of life after all. Andrew Altieri, a post-doctoral researcher in the Department of Ecology and Evolutionary Biology, found that dead zones do indeed support marine life, and that at least one commercially valuable clam actually benefits from oxygen-depleted waters.

Altieri studied dead zones in Narragansett Bay, one of the largest estuaries on the U.S. East Coast. In a paper published in the October issue of *Ecology*, he found that quahog clams (*Mercenaria mercenaria*) increased in number in hypoxic zones—areas where dissolved oxygen in the water has been depleted. The reasons appear to be twofold: the quahogs’ natural ability to withstand oxygen-starved waters, coupled with their predators’ inability to survive in dead zones. As a result, the quahog can not only survive but, in the absence of predators, it can actually thrive.



Other species may benefit from dead zones.

A recent study shows that dead zones have been expanding rapidly due to climate change and human-caused pollution. Scientists have focused on documenting the death of species and loss of fisheries in these oxygen-poor areas, but they haven’t looked at how certain hardy species can persist and thrive—until now. There may be other commercially important species that persist—and perhaps benefit—from

dead zones in other regions.

“You’d be hard pressed to say dead zones are good,” Altieri says, “but with this study you just can’t say that dead zones are simply doom and gloom. Ultimately, it’s a silver lining on a very dark cloud.”

Yet Altieri does not advocate that hypoxic zones remain. The quahog is the only marine organism he found to benefit in this way. That means fishery managers, scientists, or others could misjudge the health of a coastal ecosystem by the abundance of a particular species, while failing to see the losses of other species in that system.

“You say ‘We’ve got this great fishery, what’s the problem?’ But the ecosystem underpinning it may be hanging on the fact that one species is doing great, and the others may not be,” Altieri says. “In the case of Narragansett Bay, if we lose the quahog because of further declines...we won’t have another species to turn to.”
—Richard Lewis

Pass the EVOO

Olive oil: good for the heart and the palate.

HEALTH When studies on cancer and heart disease showed that people in the Mediterranean have lower incidence of cancer and heart disease than their American counterparts, researchers wondered what was in their diet that might be protective. Was it the olive oil? The red wine? The fruits and vegetables? Turns out it's all three, according to The Miriam Hospital's chief dietician, Mary Flynn, PhD, RD.

"We know that people have less chronic disease the more olive oil they use," Flynn says. She advocates the plant-based Mediterranean diet, which includes no less than two tablespoons of extra virgin olive oil a day, usually incorporated into lunch and dinner, and little animal fat. It's beneficial for everyone, but especially for her patients, who are typically breast or prostate cancer survivors.

Flynn advocates a diet that is plant based, with plenty of extra virgin olive oil and little animal fat.

Olive oil also makes things that some people find hard to swallow, like vegetables, taste better. "And eating a healthy



fat at each meal helps you feel full, so you won't get hungry between meals," says Flynn. While the Mediterranean diet has been shown to be just as good as others, such as a low-fat diet, for losing weight, Flynn's current study will determine if it can improve maintenance and adherence.

"No diet will work if people can't stick with it," she says.

Flynn, an assistant professor of medicine (research), is on the board of the Rhode Island Community Food Bank and runs programs to teach people with fewer resources that they, too, can eat healthful meals. "There's nothing wrong with canned or frozen vegetables," she says. "Those veggies stay on the vine longer and thus are packed with more phytonutrients."

See for yourself with this tasty dish. And for more of Mary's recipes, visit www.rifoodbank.org/.—Kris Cambra

SPINACH, BEANS, AND WHOLE WHEAT PASTA

Ingredients

- 2 tablespoons of extra virgin olive oil
- 1 clove of garlic, pressed
- 1/3 cup cannellini beans (drained and rinsed well)
- 1/2 cup frozen, chopped spinach (defrosted and drained)
- 1 cup of "petite diced" or crushed tomatoes
- 2 ounces of whole wheat pasta (dry weight)

Optional

Fresh herbs, (rosemary, basil, and thyme) salt and pepper

Directions

Heat a large pot of salted water to cook the pasta. When the water boils, cook the pasta. Heat the olive oil on low. Add the pressed garlic and stir to combine. Heat for 2-3 minutes. Stir in the defrosted, drained spinach and heat for 3-5 minutes. Add the drained, rinsed cannellini beans. Season with salt and pepper and any herbs. Stir in the canned tomatoes. Heat until the pasta is cooked. You can add some pasta water if it dries out. Toss with cooked pasta and serve.

Per serving | 540 calories | 3 vegetables (2 tomatoes, 1 spinach) | 3 starches (2 whole wheat pasta, 1 legume)

More Accurate and Safer, Too

Possible new test for Down syndrome.

GRANT Down syndrome, or trisomy 21, is a genetic defect leading to physical and mental delays that affects about 1 in 700 babies born each year in the United States. The American College of Obstetricians and Gynecologists recommends that all pregnant women be offered a screening for Down syndrome using several available tests. But current screening tests are imperfect, and diagnostic tests are expensive, invasive, and carry a risk of unintended fetal loss.

Now, thanks to a \$4.5 million industry grant, researchers at Alpert Medical School and Women & Infants Hospital of Rhode Island are investigating a maternal blood test that may not only boost the Down syndrome detection rate, but also reduce the rate of false positive results. The new test could help move prenatal care to the point where invasive tests are no longer necessary.

Jacob Canick, professor of pathology and laboratory medicine at Brown and director of the Division of Medical Screening and Special Testing in Women & Infants' Department of Pathology, along with Glenn Palomaki, senior research associate in pathology at Brown and associate division director at Women & Infants, will serve as co-principal investigators of the "RNA-based Noninvasive Aneuploidy Study."

"We expect that the proportion of Down syndrome pregnancies detected by this test will be higher than what is currently possible with any other screening test, and the number of amniocentesis and CVS [chorionic villus sampling] procedures will decrease markedly," says Canick. "This could lead to safer diagnosis of Down syndrome and eventually other serious chromosomal abnormalities."



Home, Sweet Home

Many minds gather to devise a better nursing home.



STAT SHEET With 78 million baby boomers in the pipeline, experts on aging in Rhode Island are collaborating on design for the nursing home of the future. Their goal is to make nursing homes attractive destinations, not last-resort options. Richard Besdine, director of Brown University's Center for Gerontology and Health Care Research, is an adviser to the project.

R.I. NURSING HOME FACTS

Nursing homes: 92
Patients: approx. 8,400*
R.I. residents 65 and older: 149,775
R.I. residents 70 and older: 117,391
R.I. residents 75 and older: 82,292

*Based on 90 percent occupancy of 9,300 licensed nursing home beds
Sources: Rhode Island Department of Health, 2006 Census Bureau estimates

ASK THE EXPERT | *Brown Medicine* will soon feature a regular column in which an expert addresses a major topic in contemporary medicine. Are there any burning issues you'd like to see tackled? Let us know. Send your ideas to Brown_Medicine@brown.edu.

Ben Brown



The Interpreter

His own brand of translational research.

STUDENT It seems unlikely that a degree in Portuguese and Brazilian studies might land you in medicine, but that's exactly where Ben Brown '08 MD'12 is today — using his background in languages to improve medical interpreter services at local hospitals.

Brown's project and a handful of others are made possible by a grant from Area Health Education Centers, a national organization that provides health care access to underprivileged and vulnerable groups by connecting university science resources, local clinics, and health care providers.

The Rhode Island branch of AHEC, one of more than 50 nationwide, is based at Alpert Medical School, giving its students the opportunity to experience the challenges and rewards of working in the community health field. Students undergo primary health care training while using AHEC grants to plan and execute their own community health projects.

With his foreign language background, Brown is currently conducting research at Rhode Island Hospital in conjunction with its Interpreter Service Department to analyze whether or not clinicians there are using medical interpreters and if not, why they choose not to. Brown hopes to use the data to create programs that train clinicians to effectively serve patients with limited English proficiency.

"The idea is to create a model for institutions to assess their foreign language services, and then to respond with an interdisciplinary workshop that's targeted to the particular strengths and weaknesses of that institution," says Brown.

Brown adds that the experience has benefited his formal medical education through Doctoring, a required course for all first- and second-year students. In the course, students join a community mentor physician once a week to see patients and practice clinical skills, such as taking vital signs and performing patient interviews.

Doctoring "is the closest way I tie [my research] into my curriculum," says Brown. Along with improving access to medical care for disadvantaged patients, one of AHEC's major goals is to encourage medical students to pursue primary health care fields. While Brown is still somewhat unsure whether he hopes to pursue primary care as his specialty, Lauren Goddard MD'11 says she is almost certain she will.

Goddard's project is in conjunction with the Stanley Street Treatment and Resources organization, a group that pro-

In the course, students join a community mentor physician once a week to see patients and practice clinical skills, such as taking vital signs and performing patient interviews.

vides mental health and substance abuse treatment. Goddard worked with the organization's Birth program, a live-in facility for chemically dependent pregnant and postpartum women and their children.

Goddard appreciates the opportunity to interact with patients and provide health education through her AHEC project.

"I think those are important skills—patient education is a huge part of being a doctor," she says.

Goddard says the chance to work with chemically dependent individuals reflects the real types of patients she will see in her professional career, and adds that her work with AHEC will help her become a more effective physician when treating people with drug addiction.—*Jyotsna Mullur '12*

Where Do Broken Hearts Go?

To the new chief of cardiothoracic surgery.

ELEVATOR PITCH Score another for Alpert

Medical School and Lifespan:

Frank W. Sellke, MD, FACS, is the new chief of the Division of Cardiothoracic Surgery. Sellke comes to Brown from Harvard, where he was the Johnson and Johnson Professor of Surgery and chief of both cardiothoracic surgery and cardiothoracic research at Beth Israel Deaconess Medical Center. He is a nationally and internationally acclaimed cardiothoracic surgeon recognized for superior clinical skills, commitment to excellence in patient care, and seminal and cutting-edge National Institutes of Health-supported cardiovascular research.

Brown Medicine talked with Sellke just after he began his appointment on December 1.

Why did you decide to join the Brown/Lifespan academic medical center?

The goals of Brown University's medical school and Lifespan were similar to mine with regard to increasing the academic stature of the institutions. I was disappointed by the diminishing emphasis and appreciation for traditional academic activities at my former institution. The vision and support of Arthur Klein, George Vecchione, and William Cioffi make my current job a pleasure.

The announcement of your appointment mentioned a "newly structured academic/clinical Division of Cardiothoracic Surgery." Can you describe what that structure is?

It is a not-for-profit organization which will allow a unified emphasis on outstanding clinical care, clinical and basic research, and education. This is a major change from the prior situation, and is instrumental for the implementation of new programs and educational and research programs.

Do you have specific goals for the Division?

While the clinical care performed at the Lifespan and Alpert Medical School-affiliated institutions has been very good, there is always room for improvement. In addition, we hope to increase the scope of clinical services provided. These include an increased emphasis on aortic surgery, heart failure surgery, and the treatment of heart arrhythmias.

Could you talk about the research projects you will bring here?

My research program deals in many areas, including collateral vessel development and the role of therapeutic angiogenesis for the treatment of inoperable coronary artery disease. In addition, I perform research on vascular changes that occur after heart surgery, microvascular physiology, and pharmacology. We also perform preclinical and clinical trials to test the effects of various pharmacological agents.

What in your previous experience has best prepared you for this role?

I was the chief of the Division of Cardiothoracic Surgery, director of the cardiothoracic surgery residency training program for seven years, and director of the NIH-funded cardiovascular surgery research training program for five years prior to moving to Lifespan and Brown. In addition, I hold leadership positions in various cardiothoracic surgical organizations such as president of the Massachusetts Society of Thoracic Surgeons, vice chairman of the American Heart Association Council on Cardiovascular Surgery and Anesthesia, and chair of the Advisory Council of Cardiothoracic Surgery for the American College of Surgeons. —K.C.



Frank Sellke

ADAM MASTOON

Above the Influence

Students tackle touchy issue of pharma-physician relations.

STUDENTS Congress is not the only place where controversial ties between physicians and drug companies are a hot topic. Students and administrators at Alpert Medical School are working closely to explore the implications of pharmaceutical marketing, speakers' bureaus, and other industry-related topics, as well as to design policies that effectively address them.

Spearheading these efforts on the med student side is fourth-year Jack Rusley, who two years ago established the Brown Pharm Policy Task Force, and second-year Nitin Aggarwal, its current chair. Rusley decided to start the group after his experience at a student leadership institute hosted by the American Medical Student Association (AMSA). "I was troubled by the access I saw drug reps have to physicians," Rusley says. "Brown has an opportunity to lead our peers in pushing for conflict-free, evidence-based medicine and education."

The Task Force met last September with Dean of Medicine and Biological Sciences Edward Wing and Associate Dean for Medical Education Philip Gruppuso to find out how such conflicts of interest are addressed at Brown. Wing reported that he and his administration have been researching the policies of the School's seven affiliated hospitals and comparing them to the

"Brown has an opportunity to lead our peers in pushing for conflict-free, evidence-based medicine and education."

Association of American Medical College's recommendations. They are also looking at other institutions known to have progressive industry interaction policies. Improvements to Brown's financial disclosure policy are under active consideration as well.

More difficult than designing strong policies, however, is effective implementation—especially at Brown, whose teaching hospitals have their own guidelines and more control over faculty. "Unlike most other academic medical centers, where the medical school owns the hospital or directly employs the faculty, our affiliated hospitals are independent entities and our faculty members are employed either directly by them or by a physician practice foundation," explained former Special Assistant to the Dean Pamela Ring. "Our challenge is persuading our affiliates to comply by demonstrating that there is a strong self-interest to do so."

Encouraged by Wing and Gruppuso, Task Force members are working to draft a policy addressing student interactions with industry representatives at community mentor sites and during third- and fourth-year clerkships. Students interested in contributing ideas should be in contact with its leadership. —Krista Hachey '07 MD'11, AMSA President



Don't Stop Now

Starting to exercise is one thing. Sticking with it is another.

FINDINGS A new study by researchers at Alpert Medical School and The Miriam Hospital offers some insight into the role of social and environmental influences on physical activity behaviors.

According to the study, published online by the *Annals of Behavioral Medicine*, a person who is *starting* a physical activity program is influenced by different psychosocial factors than a person who is trying to *maintain* such a program.

Analyses revealed that access to home exercise equipment was more predictive of physical activity adoption, whereas self-efficacy and perceived satisfaction were more important in predicting exercise maintenance.

"What influences an individual to become physically active may not necessarily help them maintain their activity level over time, and vice versa," says lead author David Williams, PhD, an assistant professor of psychiatry and human behavior. "A better understanding of these variables will help us design more effective interventions that encourage individuals to initiate, and stick with, a physical activity program."



A young subject uses the Manipulandum, which controls computer games used to assess improvements in arm function.

All Inclusive

Engineering elves make toys that are fun and therapeutic.

COOL TOY Who says therapy can't be fun, too? A cross-disciplinary and multi-institutional team has devised first-of-their-kind play things that will assist children with cerebral palsy (CP).

The project was launched when Clinical Assistant Professor of Clinical Neurosciences (Neurology) Karen Kerman '78, director of the pediatric rehabilitation center at Hasbro Children's Hospital, wanted to find a way to incorporate physical therapy into children's play activities.

She approached the CVS Caremark Charitable Trust and explained her idea—to create toys that would allow children with CP to obtain vital therapy in a fun way. Kerman says, "The CVS Caremark Charitable Trust was wonderful, im-

They approached Khipra Nichols, BID, professor of industrial design at RISD, and in the fall of 2006, the students in Crisco's class were challenged to design therapeutic toys.

Crisco says, "There were a lot of design iterations, but in the end, there were about 15 prototypes and concepts that came out of the class." The efforts then focused on designing a hand-held control that could be used by the patients with CP as both fun and therapeutic and would increase the use of the affected limb, helping to strengthen the muscles. At the same time, the researchers wanted to be able to obtain information from the use of the toys. So the controls are equipped with data logging capabilities that enable the researchers to study the extent of use and the arm movements and also

The controls are equipped with data logging capabilities that enable researchers to study arm movements.

mediately seeing the advantages of such a project, and their support allowed us to go ahead with our idea."

With funding available, she approached her colleague, Joseph (Trey) Crisco, Henry Frederick Lippitt Professor in Orthopedic Research and director of the bioengineering lab at Rhode Island Hospital. Crisco was teaching an engineering course that combined industrial science students from the Rhode Island School of Design (RISD) and engineering studies students at Brown. Combining the expertise of the group, Toys and Technology for Rehabilitation was born.

measure the outcome.

The project has now reached its study phase, during which 20 children with CP between ages 5 and 12 will be enrolled.

Kerman and Crisco believe that this is a big step in physical therapy for patients with CP. They also believe that the information obtained for this study may even have future implications for other patients, including those who have suffered a stroke. Kerman says, "Our goal is not only to provide rehabilitation, but to reshape the brain after injury to improve function. We believe we can do that."

Surf Ace

It's a bird, it's a plane...it's an ophthalmologist!

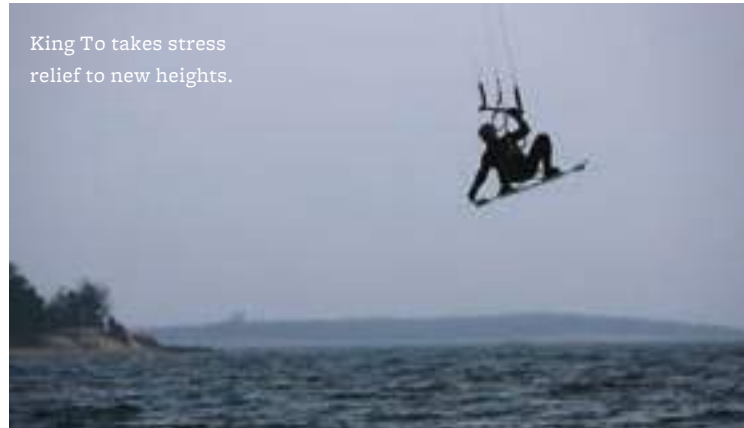
WHO KNEW? Take a predawn walk on Barrington Beach and you're likely to see sandpipers, gulls, maybe even a cormorant — and, dipping and soaring over the waves, a wetsuit-clad figure with neoprene gloves and booties dangling from a giant, inverted-U-shaped kite.

This is what King To, a clinical professor of surgery (ophthalmology), does for fun.

Kitesurfing, one of the latest developments in extreme sports, uses wind power to pull a rider across the water on a small surfboard. Despite the practitioner's risk of being dashed upon the rocks or blown out to sea, says To, "it's much more dangerous to go skiing."

For this fan of sailing, waterskiing, and wakeboarding, kitesurfing was the next logical step. And he's no dabbler, as his store of equipment attests. "After a while you become a collector," says To, who admits to being the owner of between 15 and 20 different boards and as many kites. "The more you do it, the more you get."

A native New Yorker, To "can't imagine not living on a coast." He takes to the water every chance he gets—which sometimes means leaving loved ones in the lurch. "When the conditions are



King To takes stress relief to new heights.

right, you have to scramble to take advantage of them. People can get annoyed."

The upside, To says, is the effect flying over the waves has on his stress level. "At work you have good and bad days. Tension can take a toll. But kitesurfing makes you forget. I always come off the water more pleasant than when I went out."

—Sarah Baldwin-Beneich

Future Patients, Take Heart

Program will focus on tomorrow's researchers.

GRANT The National Heart, Lung and Blood Institute has awarded a \$2.5 million grant to fund the Cardiopulmonary Research Training Program, which trains physicians and scientists in basic science and its application to the understanding of cardiovascular and pulmonary diseases and the outcomes of prevention and treatment of these diseases.

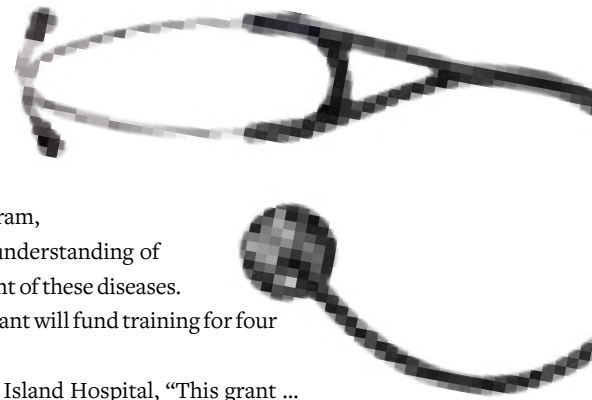
Co-directed by Professors of Medicine Gideon Koren and Sharon Rounds, the grant will fund training for four to eight MD and/or PhD post-doctoral fellows each year for the next five years.

According to Koren, director of the Cardiovascular Research Center at Rhode Island Hospital, "This grant ... differs from most fellowship programs that focus on training clinicians to directly care for patients. Through this grant, we will position ourselves to become a premier training center in the country."

"Because cardiovascular disease is the leading cause of death and chronic obstructive pulmonary disease is the fourth leading cause of death in the U.S.," adds Rounds, chief of the medical service at the Providence VA Medical Center, "we need more researchers who can work to find the cures for these diseases. We also must train professors who will teach tomorrow's medical students in this world of evolving technology. Having that link between clinic, classroom, and lab is crucial."

The program is now recruiting appropriate trainees. Interested potential applicants are encouraged to contact MaryAnn Machado at mmachado@lifespan.org.

A newly funded program will increase understanding of two leading causes of death.





BIG SHOT “WHEEL WELL” BY ALAN MUNNEY



STAY FOCUSED

Unlike his photographic subjects, Alan Muney '75 MD '78 is not easy to pin down. A pediatrician by training, he has served as executive vice president and chief medical officer of Oxford Health Plans and is currently an executive director of The Blackstone Group, a private equity firm. He's also no slouch at photography. Muney's perspectives range from a pigeon's-eye view of a busy Manhattan intersection to a close-up of an upturned boat so sculptural as to be abstract. His colors undulate. His textures practically hum. Some works, such as a Southern California Ferris wheel or Frank Gehry's Disney Concert Hall, are vertigo inducing. Others, like his landscapes, are downright painterly. And there are monochromatic scenes of sailboats at anchor that will make you feel the chill of a raw November day on the East Coast.

Visit alanmuney.com to see his work.

— S.B.B.

ZOOM

BY SUSAN HSIA LEW

UP CLOSE AND PERSONAL WITH CHARLES CARPENTER

Gentle Giant

Don't be fooled by Chuck Carpenter's slender physique and relaxed, soft-spoken manner. In the world of infectious diseases, the professor of medicine is a heavyweight champion of patient care, academic medicine, and public health.

In 50 years in medicine, he has helped save millions of lives in the face of cholera epidemics, trained and inspired some of the world's leading medical researchers, and served as a determined advocate for patients from the streets of Calcutta to the prisons of Rhode Island. Everywhere he goes he leaves a lasting impact. And he's not done yet.

Carpenter came to Brown in 1986 and served as physician-in-chief at The Miriam Hospital from 1986 to 1998, having previously been chief of medicine at both Case Western Reserve University (CWRU) and Johns Hopkins University medical schools. Alpert Medical School recently hosted a Festschrift symposium highlighting Carpenter's contributions to the world of infectious disease research. Former colleagues and students from throughout his career shared lively stories of the many ways in which Carpenter influenced their lives and careers. The research presentations covered topics from cholera treatment in the field to the microbiology of HIV to the challenges of women with HIV surviving to experience menopause, all of which Carpenter has had a hand in making a reality.

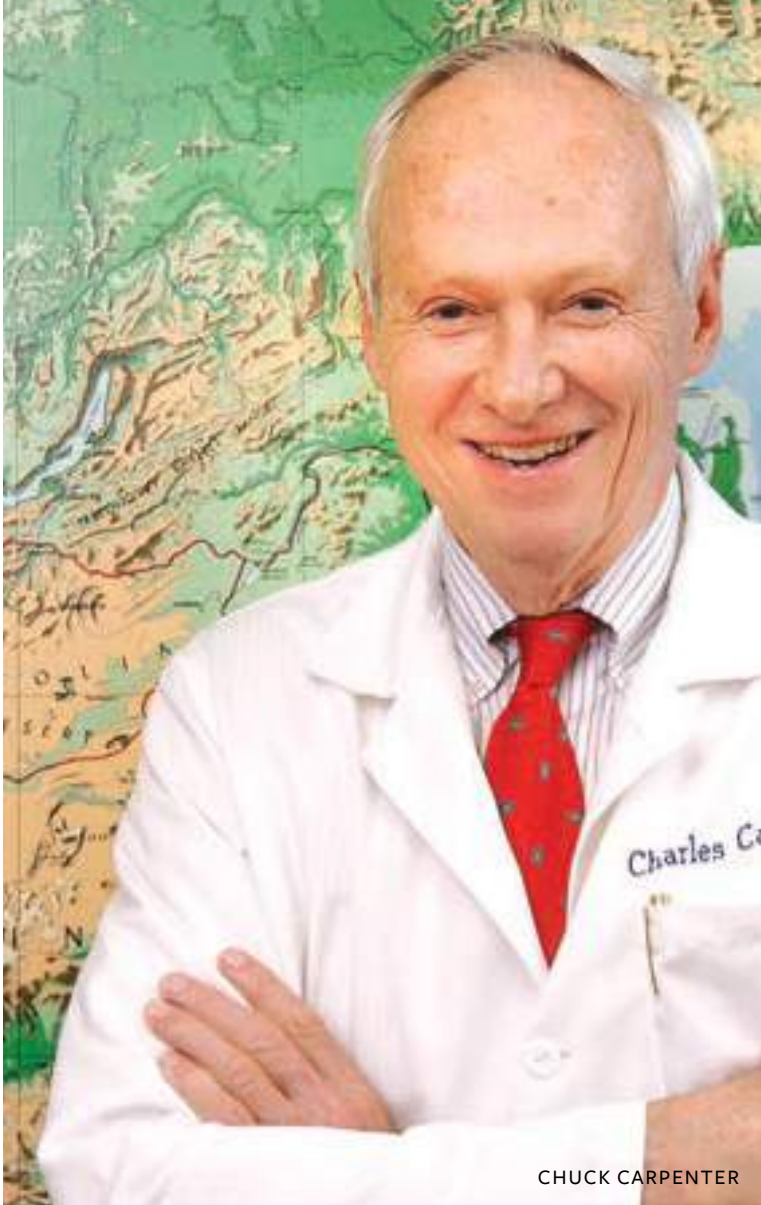
Carpenter talks about his medical career with a combination of casualness and enthusiasm. "I'm not quite sure how it happened. I was a junior in college and I was reading and thinking and I just decided that's what I wanted to do," he says. And infectious disease? "Oh, that's a hobby. My wife and I wanted to do some work in a developing country, and when we went to Calcutta, the biggest problem was infec-

tious diseases. So I started working in that, and enjoyed it tremendously. I still consider myself to be a general internist, but I really enjoy infectious diseases."

Passage to India

Following his unique intellectual and moral compass has been Carpenter's secret to success. In the early 1960s, John F. Kennedy challenged young Americans to live and work in developing countries around the world. A newly minted Dr. Chuck Carpenter and his wife, Sally, took the President's challenge seriously. "[Kennedy] suggested that India would be a place where, if we did well there, it would be helpful to the rest of the world. So we decided to try the Peace Corps [but] found out they weren't taking any married people." Mac Harvey, chief of medicine at Johns Hopkins, suggested going to Calcutta anyway. "This was July of '62, and it was during a huge cholera epidemic. I could see we could do a lot for those patients," recalls Carpenter.

Chuck and Sally and their two young sons spent the next two years in Calcutta, establishing the Johns Hopkins Cholera Research Center. Another researcher, Brad Sach, and his family joined them. "We learned all we could learn about clinical research there," says Carpenter. "As many as 300 people a day came through the Infectious Diseases Hospital during the cholera epidemic periods. We thought they could all be salvaged if they got IV fluids, so Brad and I worked largely on making sure we had the right fluids to



CHUCK CARPENTER

give. At Brad's request we looked to see if antibiotics would help. They were marvelously helpful, but nobody had known it before because people were going to die within the next 24 hours without fluids anyway. We found that if you gave fluids and gave antibiotics you cut down the loss of fluids by about 60 percent in the average patient, which made it possible, given a limited amount of fluids, to treat that many more patients." It was such a rewarding experience for Carpenter that he continued to bring students and faculty to India as part of their training and research. Among them was Nathaniel Pierce, who, under Carpenter's guidance, developed oral rehydration therapy, a revolutionary, cheap, and easy treatment for cholera that continues to save the lives of millions of children each year from death due to diarrhea.

In 1973, Carpenter became chair of the Department of Medicine at CWRU. Wanting to continue his involvement

in medical research abroad, and knowing the benefits of such an experience to students and faculty, he established the first Division of Geographic Medicine within a department of medicine in the U.S. Recalls Carpenter, "I made a decision to concentrate only on basic care and teaching as chair of the department. So I didn't personally do much research, but I watched them do it." In fact, he did more than watch. At the recent Festschrift symposium, former residents and faculty from CWRU credited Carpenter's guidance, enthusiasm, and support as having been indispensable to their success. Jerry Ellner, a world renowned tuberculosis expert and former colleague at CWRU, remarked, "Chuck Carpenter created an environment where faculty could dream."

Without Prejudice

When Carpenter came to Brown in 1986, he brought his dedication to patient care, global medicine, and teaching with him. During his first year at The Miriam Hospital, he received an urgent call from the Rhode Island Department of Corrections (RIDOC). "That was when I first saw a patient with HIV infection in the prison. She was an Ivy League dropout

who got dabbling in intravenous drugs. They were so afraid of it, they treated [her] like dirt. They had her in an orange jumpsuit with 'biological hazard' on the back, and they took me to a shack away from the place for me to examine her. They didn't know what they were going to do with her after that. They didn't want to have her with the general population. It was God awful. That's why we developed the prison program."

Concerned that prisoners with HIV would not receive proper care, Carpenter began visiting the Adult Correctional Institute regularly, and brought faculty members and medical students with him. One of those faculty, Professor of Medicine Josiah (Jody) Rich, observed that "Chuck Carpenter always treated jailed patients with dignity and respect." Carpenter's involvement with the prison inspired many others to get involved, and the relationship between prison and

ZOOM

university grew. In 1988, Carpenter made an agreement with RIDOC that Medical School faculty would provide care for all prisoners with HIV. Since then, the partnership has expanded beyond HIV/AIDS, and now covers all prison health care.

“One thing I’d like to get done sometime in the next few years is get to most states’ prison systems connected to academic medical centers,” says Carpenter. “People in prisons have a higher incidence of all kinds of medical problems than in the general population, and the care can be pretty bad. I think that having a university medical school involved with a prison increases the quality of patient care enormously. Being in prison is terrible, and it can be improved a lot by having someone, a physician or medical student, who is interested in you and who can help you with your health problems.”

Brown is that of principal investigator of the Brown/Tufts/Lifespan Center for AIDS Research (CFAR), one of only 18 interdisciplinary AIDS research programs funded by the NIH. CFAR fosters both local and international collaborations on AIDS research, ranging from community-based AIDS prevention and treatment to retrovirology studies in the lab, and recently won its third round of funding through 2012. “There’s a lot of competition,” says Carpenter. “One thing that keeps us getting funded is that we probably have the best program for women.”

Susan Cu-Uvin, professor of obstetrics and gynecology, leads CFAR’s Women and AIDS Core. At the Festschrift, Cu-Uvin mused: “I often refer to Chuck Carpenter as the Warren Buffett of HIV. He saw, back in the 1980s, that

“One in four persons in this country with HIV rotates through the prisons. And because one in three persons with HIV doesn’t know they have it, it’s a chance to make the diagnosis earlier and treat the patient so that he or she is not going to transmit it when they leave the prison.”

In addition to creating a more humane experience for the patient, there are tremendous public health benefits to bringing university-quality medical care to the prisons. “One in four persons in this country with HIV rotates through the prisons. And because one in three persons with HIV doesn’t know they have it, it’s a chance to make the diagnosis earlier and treat the patient so that he or she is not going to transmit it when they leave the prison.”

Despite Carpenter’s promotion of the benefits of such partnerships in peer-reviewed studies and through speaking at medical conferences, the idea has not yet been widely embraced. “Logistically, it seems a bigger problem than it really is,” he says. “You have to have people see how rewarding it is. It does take a group of people to start it, but medical students and undergraduates, too, in general, are pretty altruistic, and if they start early, they tend to continue with it.”

Passion for the People

Brown’s prison partnership is only one example of Carpenter’s passion for patient care and his own brand of medical acumen. Among many leadership roles he holds at

HIV would eventually hit women heavily.” In fact, Cu-Uvin believes that Rhode Island was chosen to be a site for the first NIH-funded HIV Epidemiology Research Study (HERS) because Carpenter had, at the time, written the only major peer-reviewed paper on women with HIV.

Adel Mahmoud, who succeeded Carpenter as chief of medicine at CWRU, describes his predecessor’s passion for patient care as “simply infectious.” From his early cholera research in India to his current mission to improve the quality of care for imprisoned patients, Carpenter has made his own impact while continuing to inspire others to take on his causes. At the end of the day, patients are what drive him.

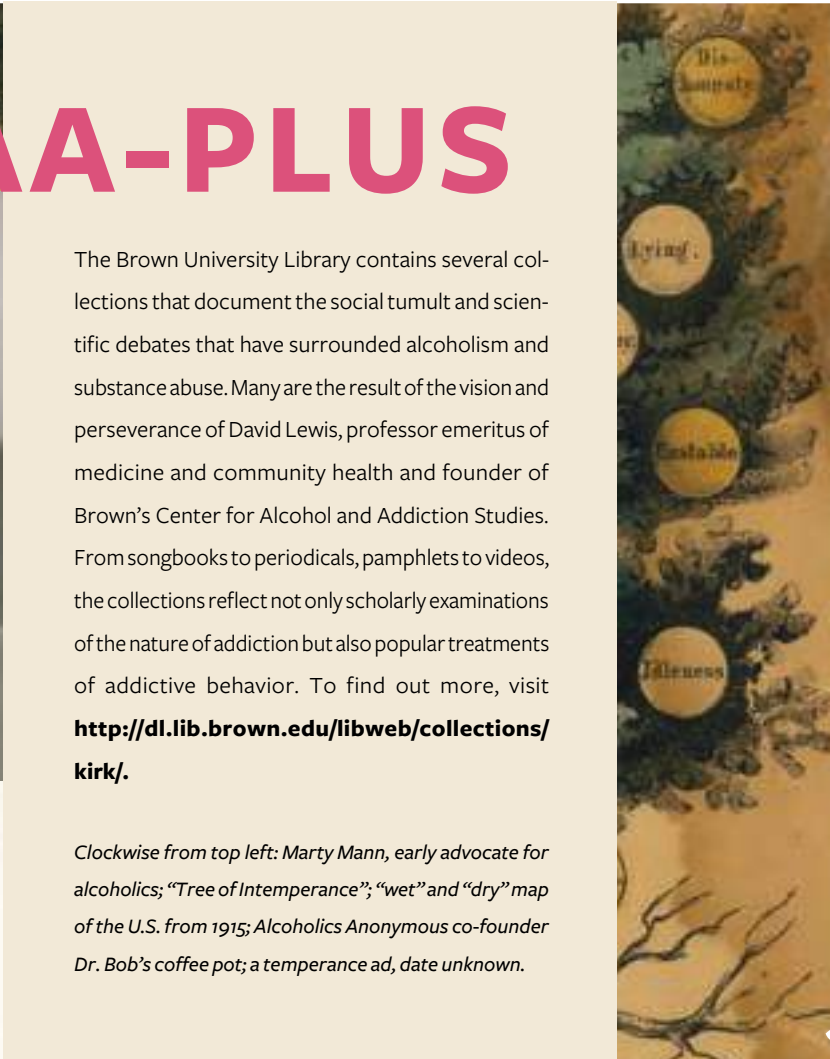
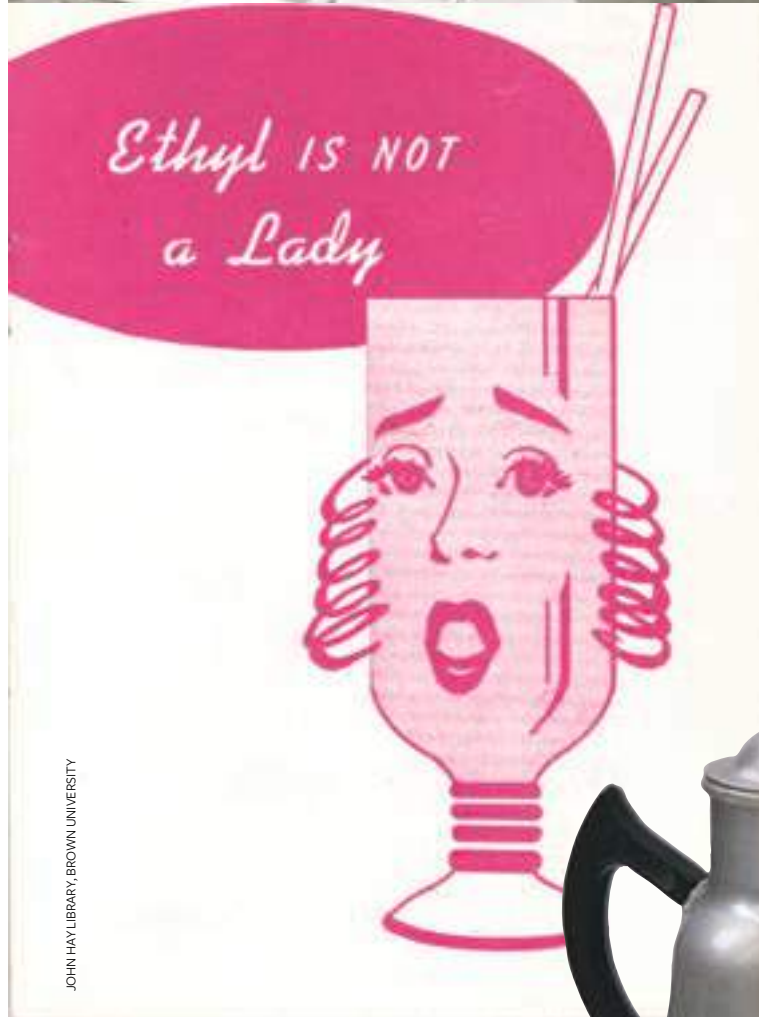
“It’s probably just part of my personality. I really enjoy interactions with patients. You can usually find out what’s wrong with a patient pretty well if you talk to them. Every patient is different. Every family is different. Every patient has a different environment within which he and we have to work. I really enjoy that tremendously.”

Susan Hsia Lew '07 currently resides, reads, and writes in Pawtucket, RI, and is a frequent contributor to Brown Medicine.

AA-PLUS

The Brown University Library contains several collections that document the social tumult and scientific debates that have surrounded alcoholism and substance abuse. Many are the result of the vision and perseverance of David Lewis, professor emeritus of medicine and community health and founder of Brown's Center for Alcohol and Addiction Studies. From songbooks to periodicals, pamphlets to videos, the collections reflect not only scholarly examinations of the nature of addiction but also popular treatments of addictive behavior. To find out more, visit <http://dl.lib.brown.edu/libweb/collections/kirk/>.

Clockwise from top left: Marty Mann, early advocate for alcoholics; "Tree of Intemperance"; "wet" and "dry" map of the U.S. from 1915; Alcoholics Anonymous co-founder Dr. Bob's coffee pot; a temperance ad, date unknown.



Les Incurables

A visit to London's Bethlem Hospital reveals that the cure for some forms of mental anguish remains elusive.

In early January, Charles Harold Wrigley, a 22-year-old gas engineer, was brought by his family to the psychiatric hospital. "The patient is extremely depressed," the evaluating physician wrote. "He sat with his hand on his forehead as if in pain during my interview. He says everything he does is wrong and that he is very miserable." A second doctor's note adds, "I am informed... that the patient has suicidal tendencies and since he has been [at] this hospital has attempted to strangle himself."

Notes like these are familiar to me. Since beginning my psychiatric residency three years ago, I have seen many patients in emergency rooms, inpatient units, and my own outpatient office that I might have described in nearly identical terms. But if the symptoms are not striking, their familiarity is: the patient described was evaluated and treated at London's Bethlem Hospital in 1890.

Bethlem was founded in 1247 as a priory; it became a hospital in 1330, and took in its first patients classified as "lunatics" in 1357, making it the first and oldest recognized institution to give care to the mentally ill. By the end of the 14th century, the hospital functioned exclusively as a "hospital for the insane." Over the centuries, the hospital—and the demand for the care it provided—grew, but for nearly three hundred years, Bethlem housed only twenty patients at a time, and operated as an institution for so-called "short-stay patients."

Today my colleagues and I use this term for hospital admissions whose duration is less than 48 hours, but by early Bethlem standards, a short stay was one in which the patient

was discharged within 12 months or less. Even a full year of treatment proved to be inadequate for many patients at Bethlem, as the hospital archives reveal. Consequently, the hospital developed a means of classifying patients as either "curable" or "incurable."

"When a patient, after sufficient trial, is judged incurable," an 18th-century Bethlem document explains, "he is dismissed from the hospital, and if he is pronounced dangerous either to himself or others, his name is entered into a book, that he may be received...[into] the house whenever a vacancy shall happen." Despite the dangerous conditions in which these patients were deemed to be, the number of patients in need of longer term care far exceeded what Bethlem could offer. "There are generally more than two hundred upon...the incurable list," the document continues, "and as instances of longevity are frequent in insane persons, it commonly happens that the expectants are obliged to wait six or seven years after their dismissal from the hospital before they can be again received."

TOURIST ATTRACTION

In response to this great need, Bethlem expanded again in 1730, adding two wings for the "incurables" who were now permitted to stay until the moment when—or if—they recovered. One such patient was Richard Dadd, an artist who began suffering from paranoid delusions at the age of 25. Dadd said he received messages from the Egyptian god Osiris, and was admitted to Bethlem after he stabbed his father to death in a park, believing him to be the devil in disguise. In passing, the hospital documentation mentions that Dadd remained in Bethlem until his death, at which point he had been a patient on the "incurable" ward for 42 years.

The expansion of Bethlem Hospital to treat—or at least

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The expansion of Bethlem Hospital to treat—or at least

contain—patients whose struggle with mental illness was chronic and severe was not one entirely characterized by altruism. The sheer number and concentration of (often visibly) ill patients made Bethlem a major 18th-century London tourist attraction, with visitors buying tickets from the hospital to gawk at the spectacles of both frenzied psychosis and brutal physical restraint. Visitors entered the Bethlem gates beneath two reclined, sculpted figures called “Raving and Melancholy Madness.” Once in the hospital, they processed past the patients, many caged or shackled, some with iron bits protruding from their mouths. The witnessing public soon morphed Bethlem’s name to coin a new word that described the conditions they observed: bedlam.

In retrospect, “bedlam” seems an apt description both for the scenes of madness in Bethlem’s early halls and for the torturous insanity that characterized the range of “therapeutic” treatments whose efficacy was tested on the captive patients. Each spring, under the orders of one particular hospital physician, there was a prescribed bloodletting for every patient in the hospital. At other times, depending on the psychiatric treatment in vogue, patients were subjected to any number of horrific measures: some were restrained in cages and then submerged in water in the hopes that the near-drowning experience would shock the ill mind into a new outlook on life; others were strapped to seats that spun for hours at great speed, and treating practitioners marveled at how well the induced nausea would calm the most agitated patients into far more placid behavior.

Even in that earlier era, a patient’s finances could determine the type of treatment he received. Bethlem’s 18th-century hospital physician, Thomas Monro, was called before a House of Commons Committee to discuss the use of gothic fetters, the iron restraints to which hospitalized patients were frequently riveted. Monro reassured the Committee that the fetters were “fit only for the pauper lunatics,” explaining that, “if a gentleman was put in irons he would not like it.”

Though the treatments I can offer to my patients today are, thankfully, far more humane than those I find documented as I page through the Bethlem casebooks, I am struck by the

disquieting fact that 22-year-old Charles Harold Wrigley, with his exact symptoms and story, might just as easily have walked into the emergency room during one of my shifts today as to Bethlem Hospital in 1890.

I could likely guarantee him more dignity, more comfort, and more privacy than he would have received at the time in “Bedlam.” But in spite of the fact that surefire treatments have been found in the last three centuries for countless other medical conditions, I am not at all sure that I could guarantee that the modern treatment which I would prescribe to young Charles Wrigley would be any more likely than that which he received to bring him relief from his anguish, or cure. That persistent and frequent inability to bring lasting solace to a patient’s deep suffering is sometimes enough to make a young psychiatrist bring her hand to her forehead, as if in pain.

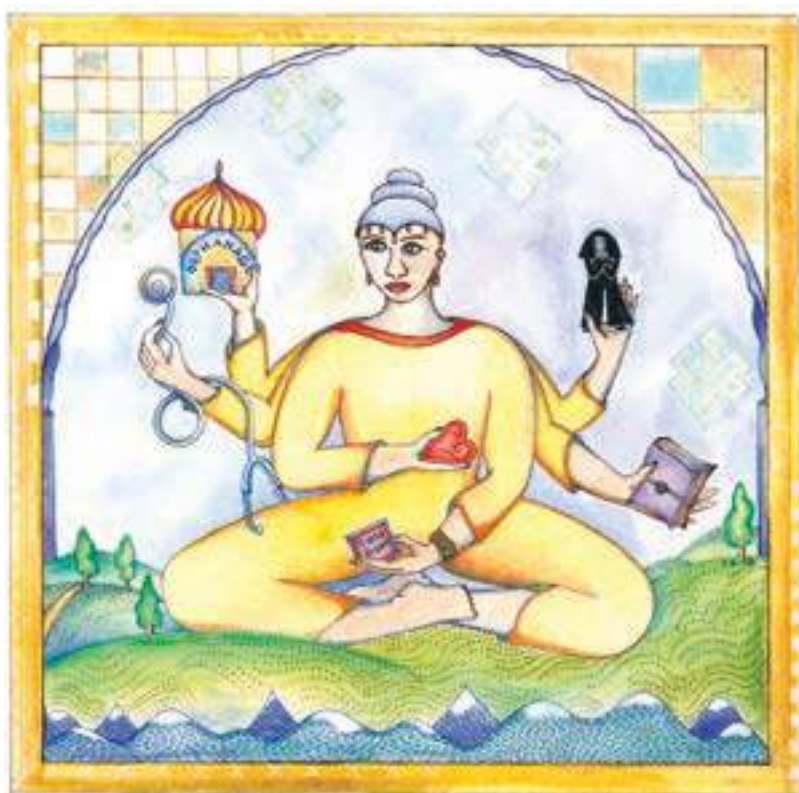
Christine Montross is a third-year Brown psychiatry resident and the author of the nonfiction book, Body of Work: Meditations on Mortality from the Human Anatomy Lab.

This still is from the 1946 RKO film “Bedlam,” produced by B-movie master Val Lewton. The film was reportedly inspired by the renderings of the asylum by 18th-century artist William Hogarth. Lewton, who also made “Cat People” and “I Walked with a Zombie,” gave Hogarth a writing credit on the film.



High Contrast

A medical student meets two local heroes in Burma, a country where more is spent on the military than on health care.



Even from the simple bird's eye view of the plane window, the disparities of modern day Burma are inescapable. Dirt roads, showing no trace of cars or movement, traverse the brown, still countryside. As I scan the landscape, a green oasis comes into view—a lush golf course surrounded by large homes, likely the residences of military officers.

At one point Burma (now called Myanmar) was the richest country in the region, known as the “rice basket of Asia” for its fertile paddyland, renowned also for its timber, minerals, rubies, and jade. Today, despite its resource wealth, it is an isolated and impoverished third-world country, its infrastructure crumbling in disrepair.

Rangoon, the former capital, has been left to accelerated decay since the military established a shining new capital in

Naypyidaw in 2006, taking with it money and business as well as the government bureaucracy. Rangoon's once beautiful colonial buildings stand with paint peeling and stucco facades deteriorating. Rangoon University, formerly a premier academic institution, is now closed to all but a handful of graduate students, its locked gates guarded by sentries carrying machine guns. Satellite towns, probably better described as shanty villages, stretch out along the outskirts of the city, and swollen-bellied babies rest on the narrow hips of women so emaciated it seems impossible they could have borne a child.

Against this backdrop of oppression and crushing poverty, the work of two individuals I met last spring seems heroic. One, a Burmese Roman Catholic nun named Sister Claire, set out singlehandedly to shelter and care for children orphaned by HIV and ignored by the government. The other, a former orthopedic surgeon named Win Tay, retired from

medicine to pursue the broader goal of creating a Burmese educated class.

A DOCTOR FOR EVERY 7,500 PEOPLE

In this country that values military might over the health of its universities, civic buildings, and citizens, the Burmese public health system is essentially nonexistent. While generals' daughters are married off in silk gowns and diamond-encrusted chignons, the government spends roughly 60 cents per person per year on health care. In contrast, Burma maintains an army of 450,000, spending more than 40 percent of the country's budget on the military—despite the fact that it has been at peace with its neighbors for decades. With 6,300 doctors working in the public sector to care for 57 million people, Burma's

health sector ranks 190th out of 191 nations in leading health indicators. Only war-ravaged Sierra Leone ranks lower.

To make matters worse, while infectious diseases such as dengue and malaria have always been endemic in tropical Burma, HIV is now a serious and growing problem. In fishing villages, where kids can buy Thai sex tapes in teashops, couples marry in their teens since premarital sex is not accepted. Young husbands are lured across the Thai border to find work, often acquiring multiple wives and bringing HIV back to their Burmese spouses.

In the ruby-mining towns, not unlike the mining towns of the American West, men eke out a living in dismal conditions far from their families. There, rampant intravenous drug use and prostitution lead to rapidly increasing rates of HIV among the men, who then carry the infection back to their home communities. In the cities, prostitution and drug use are also responsible for the majority of infections, with nearly one in two intravenous drug users and one in three sex workers sero-positive.

In 2005, the Burmese government spent less than half of one cent on HIV care per person infected. Meanwhile, 20,000 Burmese die each year from AIDS. Moreover, the government actively discriminates against HIV-infected persons and cracks down on HIV advocacy work of any kind. Until recently, a woman found carrying a condom could be arrested as a prostitute, and drop-in centers that provide health care to sex workers are often raided by police.

In addition, numerous AIDS activists have been arrested for their work. While organizations such as Doctors Without Borders (MSF) and the 3 Disease Fund (3D Fund) still struggle to provide HIV care, many others have pulled out because of restrictions imposed by the military, leaving Burma to receive among the lowest levels of humanitarian aid worldwide.

SAVE THE CHILDREN

It was in this context that Sister Claire took up the fight against HIV. She knew nothing about the disease when she first encoun-

tered HIV-positive children living in the streets, kicked out of their homes by frightened relatives. Despite their obvious suffering, the stigma of their disease prevented other nuns from helping them. Horrified, Sister Claire began to boil down chicken bones and deliver broth by bicycle to as many of the kids as she could. She had no medical training, no money, and no support. “I had nothing but my will,” she said.

In 2002, the year the government declared there was no AIDS in Burma, Sister Claire built her orphanage. Her fellow nuns told her she was forsaking the discipline of her order by taking off her habit and addressing such a stigmatized disease with methods that opposed church doctrine. Still, Sister Claire stood by her belief that true spiritual work is found in helping those most in need.

The orphanage began as a thatched roof hut with a dirt floor and 13 very sick children. By 2003 all but one had died from AIDS. Slowly Sister Claire improved the building and gathered donations of milk powder and food. Despite the anti-contraception views of the church, she started going out to villages on her motorbike to hand out condoms and dispel the local belief that they are only used by prostitutes. Recognizing women’s lack of empowerment as a key factor in promoting

With 6,300 doctors working in the public sector to care for 57 million people, Burma’s health sector ranks **190th out of 191 nations in leading health indicators**. Only war-ravaged Sierra Leone ranks lower.

safer sex, she tries to teach village women about their own importance by saying, “We wouldn’t have Buddha if it weren’t for his mother. You can give life. No man can do that!”

This year the orphanage has 34 kids, 17 of whom are on anti-retrovirals donated by a foreign NGO. But medical help remains scarce, as the government limits foreign aid in many areas. “They want the people to die,” a colleague commented grimly. But for the first time, six months had passed with none of the children dying. “I can’t save their parents’ generation, but I can fight to save these children,” Sister Claire says. Her newest

FIELDNOTES

project is finding the money to build a fence to keep out the stray dogs that come in and frighten the kids, since “the government is too busy controlling the people to worry about controlling the dogs.”

While Sister Claire ministers to the most urgent health needs of the youngest generation, Win Tay, the former orthopedist, sees education as the path to change. Initially he studied medicine after his mother told him, “The only way to earn both merit and money is to become a doctor.” After struggling for years with the limited medical resources available, he became frustrated with feeling he could not do enough. “I had only a hammer and screws, and the results were not satisfactory,” he says. And so he left medicine and invested the money and merit he’d earned in a school.

A FEW GOOD SCHOOLS

In a country where private schools are prohibitively expensive for all but the children of military leaders and a small elite, Win Tay’s is unique. While expensive by local standards, the tuition is low enough to be affordable for the children of the small class of Rangoon residents who live in comparative comfort. Unlike the private programs that teach exclusively in English, these teachers educate children to read and write in both English and Burmese. “We must have self-respect,” the school’s founder says, remarking on the practice of English-only schools. “Many of our children can’t even read the street signs.” In addition to his school, Win Tay, who is also a writer and publisher, started a printing press where he translates the works of writers from Einstein to Thich Knat Han to Dr. Seuss into Burmese.

Along with the growing library and cheerful classrooms, the school has a recreation room where older children learn traditional Burmese dances; it also has a bright kitchen and lunchroom that open out onto a garden where soon the students will begin growing plants. Upstairs is the founder’s favorite space, a Breathing Room, empty except for a simple Buddhist altar in one corner. “It is important for the children to learn to sit quietly,” he says.

Win Tay describes himself as a “socially engaged Buddhist.” In contrast to the common belief abroad that Burma’s freedom from the junta’s oppressive rule lies in outspoken activism and international intervention, his roadmap is more restrained. While Win Tay believes whole-heartedly in the importance of

supporting the poor, he is wary of relying solely on aid organizations, or what he calls “the endless heart syndrome,” predicting that “no matter how much money the NGOs give, in five years it will be gone.” What the country needs, he argues, is a few good schools, one solid university, and a Burmese-speaking educated class that will resist the pull of life abroad and stay

Sister Claire began to boil down chicken bones and deliver broth by bicycle to as many of the kids as she could. She had no medical training, no money, and no support. “I had nothing but my will,” she said.

to fight for the country’s future. “We must strengthen the educated class if we are to create sustainable change,” he says. Despite the oppression and hardship, Win Tay has faith in the deeply rooted Buddhist principles of the Burmese people. “We will not be like South Africa, we will not need UN help with reconciliation,” he says. “We are forgiving and loving, and after all this is over we will walk forward together.”

I left Burma at the end of March 2008, overwhelmed by the depth of suffering I had witnessed, and awed by the passion and gentle spirit still alive in those who bear such tremendous sorrows. Tragically, a month later, the 155-mile-an-hour winds of Cyclone Nargis carved a new path of destruction, leaving an estimated 84,537 dead and 53,836 missing. It is impossible to imagine a country more ill-equipped to deal with such a natural disaster—or a people more undeserving of a whole new level of calamity.

Despite the initial outpouring of international compassion, Burma has stopped making headlines, though the devastation, the despair, and the decay remain. Quietly, out of the ruins, people of courage and conviction are ministering to young AIDS victims, repairing schools, nurturing a new generation, and passing on the Buddhist belief in *metta*, or loving kindness.

As Gandhi said: “When I despair, I remember that all through history the ways of truth and love have always won. There have been tyrants, and murderers, and for a time they can seem invincible, but in the end they always fall. Think of it—always.”

Sarah Wakeman lived in China as a child and has a strong interest in Asia and international health. In March 2008, she traveled to Thailand and Burma to learn about the region’s pressing public health issues. She will spend March 2009 working in a refugee clinic on the Thai-Burmese border.

MOMENTUM

CAMPAIGN FOR ACADEMIC ENRICHMENT

BEST OF BOTH WORLDS

Donor's gift supports Brown-China exchange. | By Kris Cambra

When Zhejiang University School of Medicine in Hangzhou was chosen by the Chinese government as one of six elite Chinese medical schools to become “globalized” and provide an eight-year education for the future physician leaders of China, its Brown-educated president looked to the Program in Liberal Medical Education (PLME) as a model. But what began as a fact-finding and consultative relationship blossomed into a full exchange program at both universities.

A formal memorandum of understanding between the schools was signed in October 2007. In the program, two students from Zhejiang come for two-month stays at Brown three times a year. Typically they come for clinical electives. Brown students, either undergraduates in the PLME or medical students, go to Zhejiang for four to eight weeks, primarily to learn more about traditional Chinese medicine (TCM), but there is also opportunity for other rotations. Medical students are usually there for a one-month clinical elective.

SHOT IN THE ARM

The exchange program received a boost last year when Zhejiang alumnus and Brown parents Sheldon and Hong Chang Pang P'11 established an endowment to support it. The Sheldon and Hong Chang Pang Endowment provides funding for both Zhejiang and Brown students to help them participate in the program. Sheldon graduated from Zhejiang in 1981, earning a degree in engineering, and Hong Chang is a graduate of the Zhejiang University School of Medicine.

Jack Crossman '10 MD'14 will go to Zhejiang this summer with three other PLME students – Tong Liu '10 MD'14, Kevin Liou '10 MD'14, and Grace Chow '11 MD'15 – who all completed a Group

Independent Study Project in TCM. “Our GISP gave us a foundational understanding of TCM ... We heard from many practitioners (acupuncturists, herbalists, and so on), but still it was hard to piece together all the components and ideas that define TCM,” he says. “Given this wonderful and free opportunity to go to China, we’ve all decided to head over and hopefully get a more thorough introduction to TCM.”

Faculty and administration from each school have also had opportunities for exchange. Zhejiang administrators have come to Brown to observe and learn U.S. methods for the eight-year combined degree program, the Doctoring course, and clinical hospital administration. Another visit is planned for spring 2009, when they will come to learn more about the core clerkships.

“I think medical education and training and the research at these schools can be complementary,” says Sheldon Pang. “The advantage of a large medical center like Zhejiang is you have access to a huge patient database, and at Brown you have the advances in instrumentation and research. I would like to see closer interactions going forward.”

FAIR TRADE

Associate Dean of Medicine for PLME and Visiting International Medical Students Julianne Ip '75 MD'78 will go to China this spring to teach a short course on medical terminology, medical abbreviations, the patient-oriented medical interview, and pharmaceutical brand names.

“I feel totally committed to this exchange partly because it is a way for me as a Chinese-American physician educator to share my knowledge and expertise with those who share a cultural bond with me,” says Ip. “The more



Juli Ip (front row, far right) with members of the Brown faculty, Zhejiang faculty, and representatives of the Luke Charitable Trust, which provided early funding for the exchange.

we learn globally about ways to provide effective, efficient, and ‘integrative’ medical care, the better the U.S. health care system will be. Conversely, through such exchanges, the Chinese health care system will benefit from U.S. technological advances and our educational delivery system.”

Since this is a University-wide exchange there are several areas of research in the basic sciences, such as engineering and biomedical engineering, that are ripe for collaboration as well. Vice President for Research Clyde Briant and Professor of Engineering Huajian Gao are spearheading this effort.

For Pang, who came to the U.S. with \$18 in his pocket for graduate studies at Vanderbilt and then MIT, supporting this educational opportunity is about giving back. “Education changed my life. I’m grateful for the scholarship support I received from both schools, and it’s only fair that I pay it back in any way I can.”

Lessons of Loss

A dying loved one teaches a medical student more about doctoring than any lecture.

A little over a year ago, the old CD of holiday carols, the same collection of songs my family had used for years, provided the comforting soundtrack to our Christmas morning. This was a special Christmas: my grandparents were with us. It was a week after my grandmother had had an emergency colon cancer surgery — the same day as the last exam of my first semester in medical school. Although she recovered quickly from the surgery, we found out a few weeks later that five out of seven lymph nodes tested positive for cancer cells. She was diagnosed with Stage III cancer and was advised to start chemotherapy.

The next eight months challenged me in more ways than I could have ever imagined, from adjusting to living back home to learning Chinese terminology for anything related to my grandma's cancer so that I could translate for my grandparents. At the beginning of 2008, with my own health scare, I had decided to take a year off from medical school. At the same time I began my unanticipated role as a part-time caretaker, since both of my parents worked and my younger sister needed supervision at home. I would accompany my grandma on all her appointments since she couldn't speak English. We would often share stories in the car. That became our weekly routine for the next four months. And always, I was amazed by her courageous spirit and optimism. You could see the will to survive on her face along with the gentle kindness in her eyes, which seemed undeterred by her difficulties.

By July, she began experiencing intense leg pain, which MRI scans confirmed to be metastases in her sacrum and nerves. With platelet counts too low for chemotherapy, we turned to radiation therapy, but it offered little relief from the pain. What was more painful was seeing the radiation oncologist's apathy toward my grandma. When asked about her prospects, his blunt answer was, "It's end-stage cancer. That's all." He rarely made eye contact with her, and focused only on whoever was translating. It was infuriating and insulting.

I watched my grandma slowly wither away. While she tried to stay strong, the pain she felt in her bones became increasingly evident on her face. She no longer wanted to eat or move.

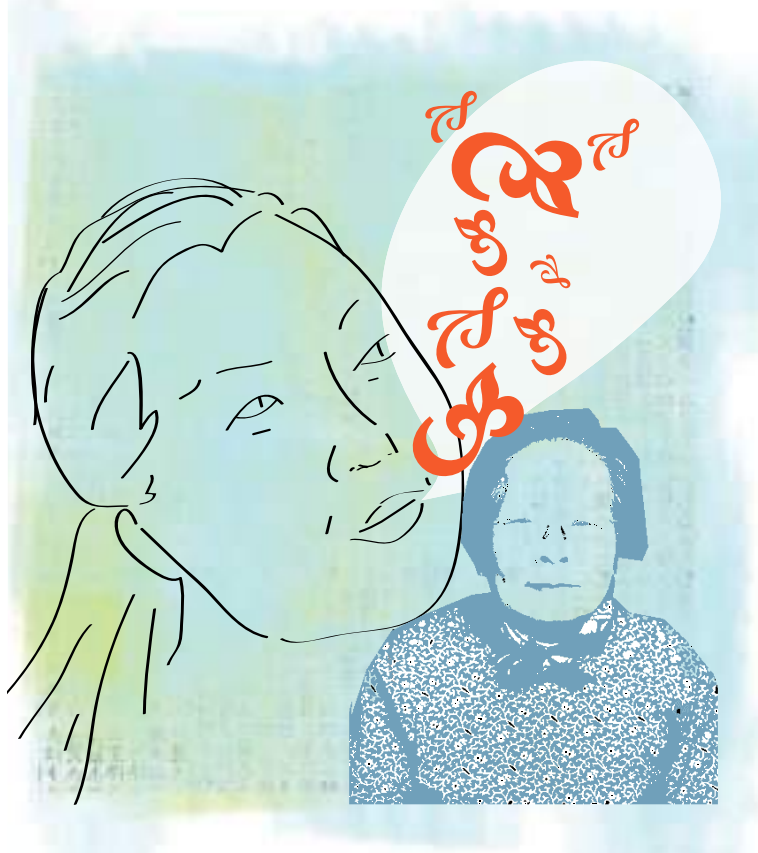
START LOW, GO SLOW

Three days before she was supposed to board an airplane to return to her home in China, she became delusional and was rushed to the hospital for severe dehydration. Three days later, an oncologist who was on call doubled her pain medications and she fell into a coma. A week later, August 4, 2008, she was gone.

What prompted a licensed doctor to double three different kinds of pain medication for an elderly, Asian woman who weighed less than 90 pounds, I will never understand. Even first-year medical students are taught "Start Low, Go Slow" when learning about pharmacology for the aging population.

Yet at the same hospital, my grandma was cared for by one of the most compassionate doctors I've ever met. This oncologist always made eye contact and was honest but comforting. In stark contrast to the radiation oncologist, who simply categorized my grandma as a patient with little chance

Caring for my grandma, I learned the importance of evaluating quality of life versus length of life, and what it means to practice humanistic medicine. I wonder what it must be like for patients who may not have access to interpreters, or who are not informed about how treatment may affect their life in their last few months.



for survival, this oncologist would explain to us, “It’s a highly aggressive cancer cell that might be difficult to treat.” The way she spoke to us, with patience and empathy, was like an invitation to manage the illness together. Neither one of the doctors ever promised a successful cure, and that was OK — we didn’t expect a miracle. But only one gave us a sense of hope and comfort, treating my grandma as a human being.

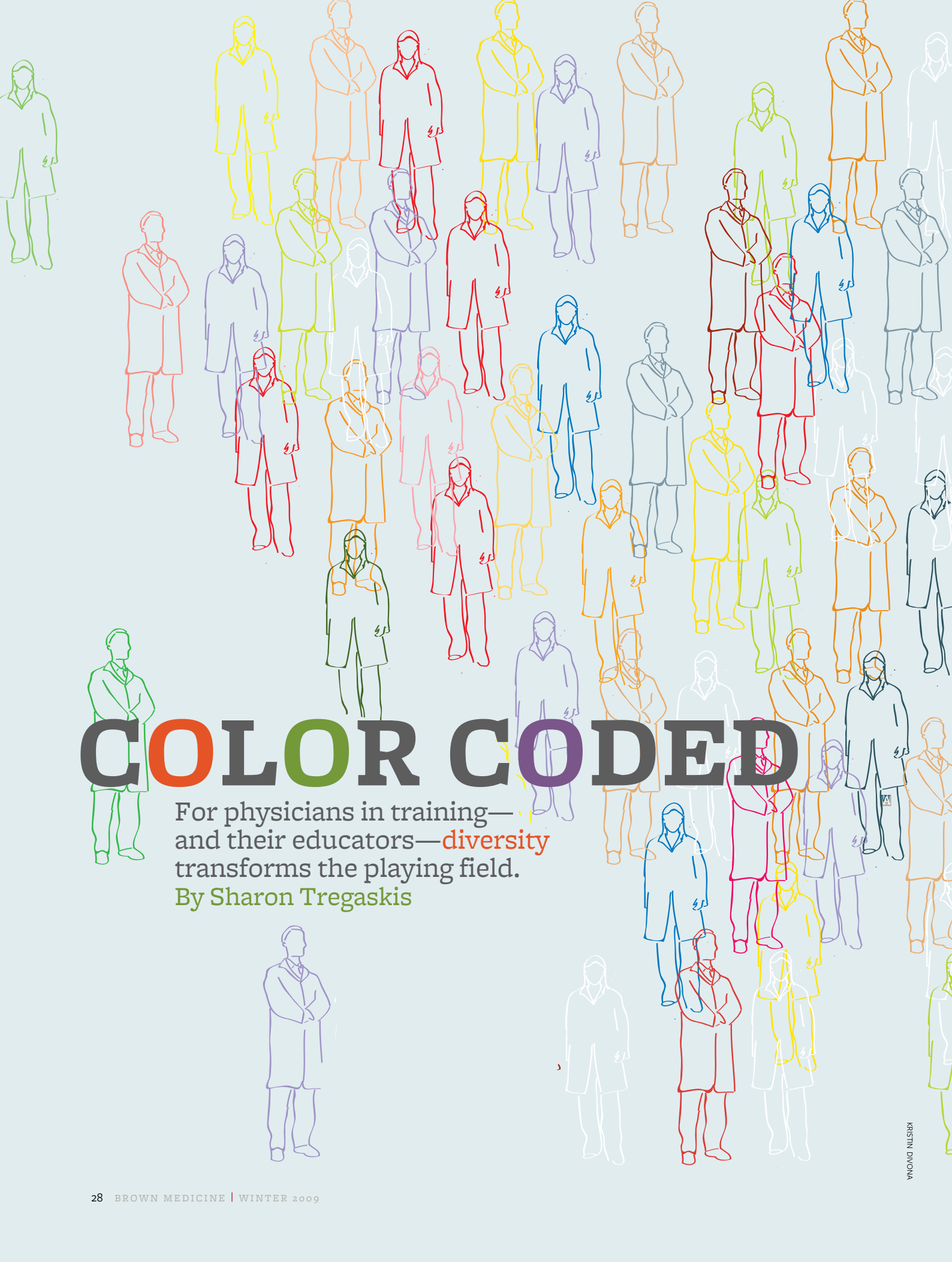
I still debate whether using chemotherapy and radiation therapy did more harm than good. Caring for my grandma, I learned the importance of evaluating quality of life versus length of life, and what it means to practice humanistic medicine. I wonder what it must be like for patients who may not have access to interpreters, or who are not informed about how treatment may affect their life in their last few months.

Certainly, there are days when I feel empowered by my experience, since it has undoubtedly shaped how I view the

practice of medicine and how I envision myself as a future physician. As much as I am relieved to know my grandma no longer suffers, I still miss her. There are those days when feelings of sadness overcome me. Being her caretaker was a part of my identity and losing her led to a feeling of loss that I’d never experienced before. Some days I just want to forget; some days I choose to remember.

And now, a year after it all began, I find myself back in class. It feels surreal, but somehow right; I am certain that the field of medicine is my calling. I feel ready to continue learning, not only for myself or in memory of one of my greatest inspirations, my late grandma, but also for my future patients.

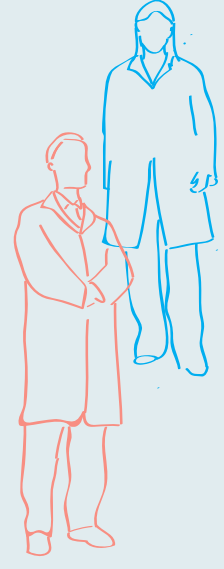




Annie Wang is currently a first-year medical student who joined the MD class of 2012 in January. This article is dedicated in loving memory to her grandma.



COLOR CODED

For physicians in training—
and their educators—**diversity**
transforms the playing field.

By Sharon Tregaskis



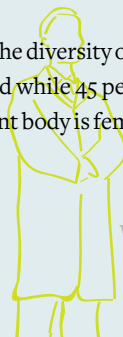
There may be a black family presiding in the White House, but from Marshala Lee's perspective, academic medicine still has some heavy lifting to do in redressing the racial inequities of the past. **The 23-year-old African American isn't the first in her family to pursue a career in medicine—but she is the first to train as a physician.** “My grandmother worked as an RN in a hospital; she was the head nurse at night, but because of her race, they never let her work during the day,” says the Greenwood, MS, native. **“Medicine and science run in my family, but no one has been given the opportunity of becoming a doctor.”**

During her time at Alpert Medical School, Lee, an aspiring infectious disease specialist with an interest in HIV/AIDS, aims to make good on the opportunities she had as an undergraduate at historically black Tougaloo College in Jackson, MS. Her career after graduation will honor the support her hometown in the Mississippi Delta has provided. “When I came to medical school, people at church gave me money for books,” says the second-year-student, who recently interviewed for a scholarship intended to bring young physicians back to the region. “It’s a community sending me to medical school. I feel obligated to return there.”

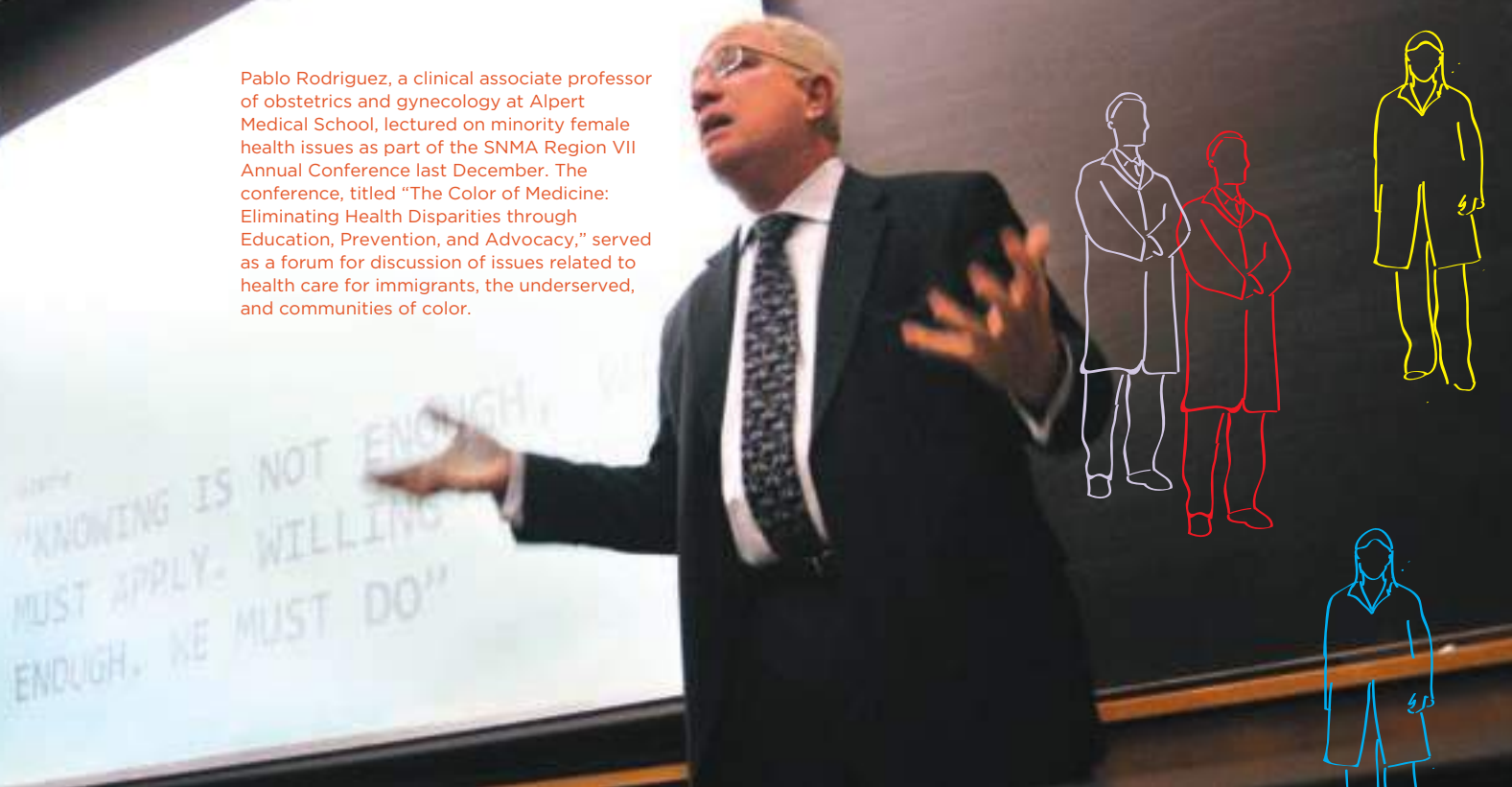
Minorities currently comprise one third of the U.S. population and, according to U.S. Census Bureau projections, by 2042 white Americans will be the new minority. Among younger generations, the transition will happen even faster, with non-white working-age Americans outnumbering their white peers in the 18- to 64-year-old category by 2038.

Yet according to the Association of American Medical Colleges (AAMC), minorities enroll in medical schools at just a fraction of their percentage in the general population. And as they work through the ranks of graduates, residents, and fellows and on into clinical and academic appointments, their numbers thin further; among NIH awardees, fewer than 1.5 percent identify as African American. Meanwhile, minority patients suffer worse medical outcomes than their white counterparts, with higher rates of avoidable hospitalizations, increased chances of dying of HIV, and a greater chance of being diagnosed with late-stage cancer, among other disparities.

“We don’t have a diverse enough student population to reflect the diversity of this country,” says Dean of Medicine and Biological Sciences Edward Wing. And while 45 percent of Alpert medical students identify as minorities and 55 percent of the student body is female, says Wing,



Pablo Rodriguez, a clinical associate professor of obstetrics and gynecology at Alpert Medical School, lectured on minority female health issues as part of the SNMA Region VII Annual Conference last December. The conference, titled “The Color of Medicine: Eliminating Health Disparities through Education, Prevention, and Advocacy,” served as a forum for discussion of issues related to health care for immigrants, the underserved, and communities of color.



the school still has room for improvement. “We have 8 percent black students; the population in the country is at least 13 percent. Only 3 percent of medical faculty members are black. That percentage is nowhere near adequate.”

In September, Wing appointed Assistant Professor of Family Medicine Emma Simmons MD’91 MPH’04 to head the Medical School’s Office of Minority Medical Affairs. While the assignment includes support for diversity of all kinds, Simmons puts a high priority on improving recruitment and retention of historically under-represented minorities: African-American, Hispanic and Latino, Mexican and Native American students. “Published studies have shown that it makes a difference if you have a more diverse medical school in terms of student satisfaction and how well they do in the real world, with their patients,” says Simmons, whose own research addresses the role of race in HIV testing and AIDS treatment programs.

HEALTHY RESEMBLANCE

Perhaps even more important than the effect of diversity on the educational experience, says Simmons, is the effect of a diverse population of physicians on the patient experience. “Under-represented minorities are more likely to practice primary care in areas where people do not have private insurance; they’re on public insurance, unemployed, uninsured, or minorities.” Minority physicians are also more likely to delve into the scientific underpinnings of such diseases as hypertension, diabetes, and heart disease, which disproportionately

affect their communities. Ultimately, says Simmons, racial concordance among patients and their doctors boosts patient satisfaction and may improve health care outcomes—and with a growing minority population, this country can’t afford to exacerbate health disparities.

When she completes her training as an ob/gyn, 30-year-old Brownsyne Tucker Edmonds ’00 MD’05 expects to work with vulnerable populations. It’s what she watched her father, also an ob/gyn, do throughout his career. “My dad always worked with underserved folks, Medicaid patients,” says the Atlanta, GA, native. “It was a distinct set of values around community, faith, and service that pointed me toward seeing medicine as an opportunity to serve.”

In medical school, Tucker Edmonds led the local chapter and later served on the regional and national boards of the Student National Medical Association, a professional society for African-American and other under-represented minority physicians which owes its founding to the American Medical Association’s 20th century whites-only policy. She also assisted in the development of the cultural competency training that now factors prominently in the first-year Doctoring course. “I’m definitely not one to think you need to be a person of color in order to identify with and connect with patients of color,” she says, “but I do think you need to be able to see your patients as part of your community, somehow. There’s often a distance there because people see the person in front of them as an other, not an extension of their community—a sister or friend

or neighbor whom they might care about in some other circumstance. That's where the unintended differences and disparate ways we give care emerge, whether to the drug-addicted, or mentally ill person, or homeless person. The way we care for patients is an extension of the way we care for our community."

This past summer the AAMC incorporated consideration of student body diversity into the re-accreditation process for all med schools. The new standard requires that each institution articulate its own goals for diversity—whether along racial and ethnic lines, financial means, spiritual or sexual identity, or even geographic region—and report on its progress toward those ends, as well as its success in cultivating applicants. "This concept doesn't speak explicitly to any one kind of diversity," says Dr. Dan Hunt, senior director of Accreditation Services for the AAMC and co-secretary of the Liaison Committee on Medical Education. "It's up to the school in its strategic process to determine what would enhance its learning environment."

Transforming the learning environment won't be easy, says Hunt, and challenges will vary from class to class and by institution. "It's a complicated business when you get people from a lot of different backgrounds and our problem is that we assume too much, then stumble across an assumption we don't even know we made."

Marshala Lee is president of the School's SNMA regional chapter.

WEB OF SUPPORT

The Leadership Alliance, a national consortium of research institutions based at Brown, aims to increase the pool of under-represented minorities pursuing PhDs by cultivating connections among aspiring young scientists and more established scholars. This summer, the organization celebrated the 100th PhD awarded to a program participant. "We're talking about what a person does with a PhD, what a person does with an MD, and what a person does with an MD/PhD, so students have a clear idea of how those career paths align with their interests," says Leadership Alliance Executive Director Valerie Petit-Wilson, a former National Institutes of Health administrator.

The Alliance's summer research early identification program injects a dose of reality into the mystique that can surround careers in medicine and science by assigning college undergrads to one-on-one faculty research collaborations at member institutions and hosting seminars to address the mechanics of pursuing a PhD. Says Petit-Wilson: "It's important for students to feel like they're part of a large enough group to make connections, build a network, and find those people who will be moving along through their same critical career path."

Malo Hutson, a Robert Wood Johnson Foundation health and society scholar and professor of city and regional planning at Berkeley, credits his Leadership Alliance summer at Brown with introducing him to the public policy questions that form a centerpiece of his current research. "I had a love of education, but it wasn't a given that I had this network," says Hutson, the first in his family to attend college or graduate school. "Mentorship is critical to success."





The SNMA conference drew medical students from across New England.

POSITIVE EXPOSURE

Marshala Lee tells a story of a lecture on skin tones that posited four categories: one for dark complexions, and three variants for Caucasians. “Are you saying black skin is only one type?” she asks, noting that minority lecturers have been few and far between in her two years at the School. On another occasion, a lecturer discussing HIV mentioned that some Africans believe that their governments have caused the disease. The students burst out in gales of laughter. Afterward, Lee confronted her classmates, explaining that Africans’ distrust of their governments runs deep and noting that many older African Americans have a similar distrust of medicine and government, a legacy of the Tuskegee Syphilis Study. “I was making them more conscious,” says Lee. “I think some of the gay students have the same problem. People laugh, initially, but they don’t understand what’s going on. People came up to me later and apologized.”

Hunt advocates a concept he calls “cultural safety.” “It’s OK to ask a dumb question,” he says describing the well-intentioned student who might inadvertently offend a classmate from a different background, “if you’re willing to listen and understand. You have to be explicit in the learning environment with this safety concept not to be judged as racist but as uninformed.” Brenda Allen, a psychologist and Brown’s director of institutional diversity, says the pedagogical benefits of such an approach are obvious. “I’m sold on the literature that links the exposure to diverse opinions to academic excellence,”

says the associate provost. “When people have to grapple with multiple perspectives, they think more deeply about a problem, think more creatively. If you’re in a room with six people coming at a problem from all different ways and taking into consideration all of those different ideas, you really learn. People’s lives, their experiences, their exposures create those points of view. The more points of view in an academic environment, the greater the challenge for everyone.”

That challenge extends even to faculty, says Associate Dean of Medical Education Philip Gruppuso, who notes that while the first-year Doctoring course, which combines clinical and classroom instruction, engages explicitly and frequently with the challenges of cultural competency, he found himself grappling with the challenges of diversity in the classroom in the introductory nutrition section he taught this past fall. “A small but significant number of our students have had problems with eating disorders or obesity,” says the pediatric endocrinologist. “A student told me that a lot of the content made these students with eating disorders very uncomfortable. The question was whether this should be openly discussed.”

Similar challenges emerge in the context of discussions of the genetics of race, inherited disease, ethics, and abortion. “Incorporating [this material] into the curriculum isn’t so easy and assessing whether you’re doing it effectively is really hard,” says Gruppuso. “Cultural competency starts at home. If you display insensitivity to your own students, you’re not doing a very good job.”

Ultimately, Gray says, the effect of socioeconomic background on who pursues medical training and the trajectory of their careers seems far more powerful than any consideration of race.

Biochemist Levi Adams joined Brown's medical school administration at its inception and stayed for nearly three decades, ultimately retiring as vice president of government and community relations for the university. Throughout his time on campus, he served as an informal elder statesman of minority affairs for the Medical School. "We're doing better than we did in 1965," he says, "but there's more we need to do." Financial aid needs work, he says, and nationwide, the quota-style thinking that yields complacency after a few minorities have been recruited must be confronted. But perhaps most important, says Adams, minorities must weave the same tapestry of contacts and mentors that facilitates career advancement among other groups. "We [African Americans] don't have as extensive an old boy network who can pass along information, or people with enough former colleagues in enough critical places in the country that you can refer a bright young student or resident," he says. "We need to build that up."

REACH OUT AND NETWORK


Rob Gray '01 MD'05 credits his grandfather and great-grandfather, both physicians, with blazing the trail he now follows. Three years ago, Gray became the first African-American resident in his orthopedics training program at Rush University Medical Center. Today, there is one other black male surgical

resident among the 600 housestaff. "Odds are if you see a young black man, he's not a surgeon," says the 29-year-old. "It's frustrating, annoying, and a residual of the unfairness that started this country, but far from the biggest problem we've got going on."

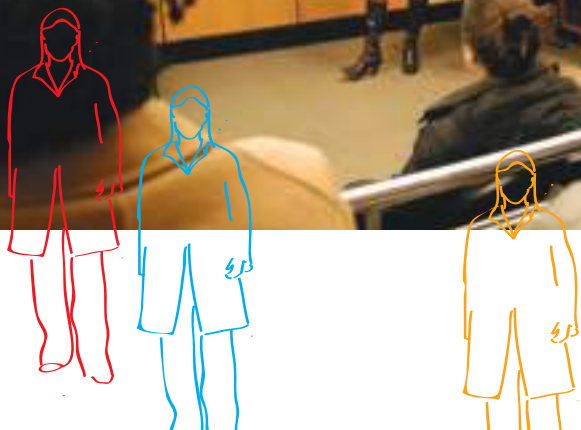
Ultimately, he says, the effect of socioeconomic background on who pursues medical training and the trajectory of their careers seems far more powerful than any consideration of race. "The real minorities in medical school are people who don't come from professional households," says the Chicago native, noting the dauntingly high cost and foregone income associated with a medical degree. "The education cost structure and the physician remuneration structure are completely out of line. You ask somebody, no matter what community they come from, who spends a lot of time and money training to be a doctor, to go someplace where they're going to have to work really hard and not make good on the debt they've incurred and then wonder why there's a shortage in those areas? Unless they have an overwhelming sense of obligation, it's really difficult to convince somebody to do that."

As the current president of Brown's SNMA chapter, Marshala Lee has made a point of reaching out to other minorities. In December, with funding from the Office of Minority Medical Affairs, the group hosted a conference on racial disparities in

health care that brought together Alpert medical students and Brown faculty with scholars from Harvard and minority clinicians from throughout New England. Earlier in the semester, outreach programs included a meet-the-cadaver event for high school students and an MCAT-prep session for college undergrads. Throughout the year, when prospective students visit, SNMA members meet them for lunch and to answer their questions about life as a medical student of color. "As a minority student, I feel like I have to be more civically engaged," says Lee, "and sometimes I have to balance that with the demands of being a medical student." ■



Dr. Nicole Alexander delivered a talk titled "HIV Screening, Advocacy, and Legislation."



25

Things to Do Before You Graduate

When it comes to advice, our medical alumni don't lack for insider knowledge or wisdom. We asked the last five classes for their take on how to have the quintessential Alpert Medical School experience before leaving Providence. You can send us some of your own ideas at med.brown.edu/alumni/filling.html. (And, alumni, if you didn't do it all when you were a student, come back and do it at Reunion!)

Photograph by Jeremy Harmon
Illustrations by Robert B. Brinkerhoff

1

GO BACK IN TIME.
Take in a movie at the Rustic Drive-In on Route 146.



2

STAND UNDER THE HEATED VENT outside the Biomed Center in winter, breathe deep, and contemplate the anatomy lab below.

3

VISIT THE ANNE S.K. BROWN COLLECTION of 6,000 miniature lead soldiers on the third floor of the John Hay Library.

4

GET OFF COLLEGE HILL. Volunteer at Rhode Island Free Clinic. Round at the Adult Correctional Institution.

5

MANGIARE! Eat a homemade prosciutto and broccoli rabe sandwich from Venda Ravioli on Atwells Avenue.



8

ORDER A SOFT SERVE at the 30-year-old Dairy King on the West Side between April and October.



10

HEAD TO MYSTIC, CT, for a slice of heaven from Mystic Pizza. Recommended toppings? Mushroom, olive, pepperoni, and Italian sausage.

7

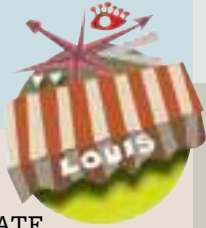
CLIMB FRANCONIA NOTCH in New Hampshire and admire the view from the top.

6

DATE an undergraduate.



11 DIG THE NEWPORT JAZZ FESTIVAL in the summer.



12 CELEBRATE GRADUATION with champagne at Louie's Restaurant on Brook Street.

16 RIDE THE BIKE PATH to Colt State Park in Bristol.



17 CHANNEL POE'S GHOST as you attend a poetry reading at the Providence Athenaeum.

21 SUSPEND DISBELIEF: go to a play at Trinity Repertory Company.

22 WATCH THE SNOW FALL during afternoon class, then head to Wa-Wa-Wachusset Mountain for some night skiing.

13 OGLE A WARHOL at RISD's Museum of Art in the new Chace Center.



18 GIVE YOURSELF A DAY OF TRANQUILITY. Hop on the ferry to Block Island, with its lighthouses, bluffs, rolling roads, winding paths, and 17 miles of pristine beaches.

23 TUCK INTO SOME GOOD, AUTHENTIC, CHEAP Portuguese food at the Portuguese Social Club in Pawtucket.

14 SEE A MOVIE—any movie—for \$2.99 at Patriot Cinemas in East Providence.

19 RIDE THE WAVES at Narragansett Beach.



24 BUY LOCALLY GROWN tomatoes and sunflowers at the Hope High Farmers' Market on a Saturday morning in summer.

15 TREK TO INDIA POINT PARK to watch the sunrise.



20 HEAR A PRE-COLUMBIAN OCARINA at the Museum of Fine Arts in Boston, whose collection contains 1,100 instruments from around the world. Lectures and demonstrations occur every month.

25 GO TO YOUR BREATH. Take an ashtanga class with Tom at Eyes of the World Yoga Center.



EXPECT THE UNEXPECTED

BY KRIS CAMBRA

Headaches, heart attacks, and everything in between. A look at the complex and growing role the emergency department plays in American health care.

PHOTOGRAPHS BY SCOTT KINGSLEY

Ludi Jagminas with a patient at Memorial Hospital in Pawtucket, which opened a redesigned and expanded emergency department in October 2008.





At left, Susan Duffy explains treatment options to Juan Carlos Martinez, 8, who has an injured finger. His mother and sisters listen in. **Center,** Ludi Jagminas inspects a patient's shoulder. Physician's assistant student Tina Chin of Arcadia University observes. **Far right,** Brian Zink stands in the ambulance bay of the new Anderson Emergency Center at Rhode Island Hospital.

As a Brown medical student, Liudvikas Jagminas MD'87 was heading toward a career in surgery when emergency medicine caught his eye. His advisers were chagrined. Emergency medicine had a bad reputation for early burnout. "Have a back-up plan," they cautioned.

"Those words were spoken in 1986. Here it is, 22 years later, and I'm still doing it," says the medical director of the Memorial Hospital of Rhode Island emergency department. "And I don't have a back-up plan. This is my career."

Back in the 1980s, emergency medicine was still a fairly new specialty, since board certification only began in 1979. Most of the physicians staffing hospital emergency rooms were not residency trained in emergency medicine; often they were late career internists and surgeons passing time until retirement, or younger docs waiting for the job they really wanted to open up.

Today, emergency medicine is as academically rigorous as any other specialty. It is notable for developing new technologies and pushing the envelope with existing ones to meet the need for ever-faster diagnosis and treatment. It's been charged with planning the health system response to every imaginable and unimaginable disaster in the age of "mass casualty events." And because it touches every other area of medicine, emergency medicine research is multidisciplinary and multifaceted, crossing basic science, public health, and clinical research.

At the same time, the American emergency department, or ED, has become a clinical provider of last resort, the stop-gap in our health system where anyone can find help, anytime.

EVOLUTION OF A DEPARTMENT

Jagminas followed his gut and completed an emergency medicine residency in New York. Then, in 1991, he came back to Brown and Rhode Island Hospital's emergency department as part of the core faculty for a nascent residency program. He was an integral part of the start-up operation, and the program admitted its first residents in 1992.

With no academic department of emergency medicine, the faculty were given appointments in other departments, typically surgery, community health, and internal or family medicine. They engaged in teaching and research, amassed publications, and climbed the academic ranks so that they had enough faculty represented at the assistant, associate, and full professor levels. "We had to show Brown that we were worthy of becoming an academic department of emergency medicine," Jagminas says.

Finally, in 2004, it all paid off. The Brown Corporation approved the proposed department, and Robert H. Woolard, then-professor of emergency medicine, was named its interim chair.

The crowning event was the recruitment of Brian J. Zink, from the University of Michigan, as the Department of Emergency Medicine's inaugural chair in 2006. He oversees



a faculty of more than 80 and the emergency departments at Rhode Island Hospital, Hasbro Children's Hospital, and The Miriam Hospital. His charge is simple: build a department that is academically stellar, patient oriented, and set on clinical excellence. Brown's is just the second academic department of these emergency medicine in the Ivy League, and Zink's agenda is Ivy League-caliber.

"Our mission is to provide exceptional emergency medical care, education, research and service to the people of Rhode Island and beyond," says Zink. "We have a vision for each of these components ... where we think they should rank nationally, where they need to develop. We set everything down to give ourselves a strategic plan and also a timeline because many of things we want to accomplish in five years."

For example, he says, the residency program should be number one in the country within five years. "We are already ranked very highly and we recruit very well. If we don't have the best emergency medicine residency in the country, we'll feel that we haven't performed up to our expectations. We want to be thought of as one of the premiere residencies."

Zink has recruited 15 new faculty members in various areas of emergency medicine, to cover the major aspects of the field and create a full-service department. Among them are two board-certified toxicologists, including an alum of the residency program, Kavita Babu '96 MD'00, to build an education program for residents and medical students. Other faculty have interests in women's health and cardiovascular disease, and still others are expert in ED management, quality, and safety.

"With the new faculty we've added great fire power with people who can help us meet our mission," Zink says.

His vision resonates with the existing faculty, those who were part of the early building and shaping of the department long before Zink arrived. Susan Duffy '81 MD'88, who completed fellowship training at Brown and is now medical director of the Hasbro Children's Hospital ED, says Zink came with enormous respect for the existing program and with a true commitment to the local community.

"His vision," Duffy says, "has attracted dynamic young faculty to this department."

Zink's strategic plan covers the traditional benchmarks of academic medicine: increasing extramural research funding and the number of scholarly publications, and clinical care excellence. But what he can't stop talking about are the departmental programs that are already distinguished. Programs like Rhode Island Hospital's Medical Simulation Center, which grew out of emergency medicine initiatives.

The Sim Center's faculty, like co-directors Frank Overly and Leo Kobayashi '94 MD'98, are major players in the national push to integrate the use of high-tech mannequins that can simulate real patients into training for physicians and allied health professionals.

"Now we're to the point where we can make it a regional resource to be used by other hospitals," Zink says. Simulations can be used for everything from med teams training to teaching medical students procedures. Zink is working with Associate Dean for Medical Education Philip Gruppuso to make

Frantz Gibbs oversees the Anderson Emergency Center, a carefully designed facility that features a Chest Pain Unit, a decontamination center, and “surge capacity,” the ability to expand for a mass casualty event.



simulation more integrated into undergraduate medical education at Brown.

Another area of excellence is the international emergency medicine fellowship, which typically enrolls two fellows per year. The main focus is the African country of Liberia, where Brown works with the Global Health Alliance, a group of physicians and other leaders from a number of institutions such as Harvard and Yale. The program tries to put a physician or fellow on the ground in Liberia 12 months a year.

“The goal is not relief work,” Zink says, “but to teach people in Liberia how to provide good medical care, especially emergency care. They have almost no doctors left. They are rebuilding, and hopefully more will come back. They have many people who need to be trained, as nurses, nurse practitioners, and more.”

Emergency medicine faculty have also taken on a greater role in undergraduate medical education at Alpert Medical School, particularly in the first two years of the curriculum. Traditionally, they had been more involved in the clinical clerkships in the third and fourth years. Assistant Professor of Emergency Medicine Jay Baruch has assumed directorship of the ethics curriculum in the Medical School, while Assistant Professor Deborah Gutman is director of the pathophysiology course in the second year. The department also makes a major contribution to the Doctoring course, with almost 25 percent of its faculty serving as physician-mentors to first- and second-year students. The high volume of patients in Brown’s affiliated hospital EDs provides an excellent environment in which

to practice the history-taking and physical exam skills taught in the course.

PLAYS WELL WITH OTHERS

Like emergency departments all across the country, those served by Brown emergency medicine faculty are busy. At the spanking-new Andrew F. Anderson Emergency Center at Rhode Island Hospital, they are 101,000-patients-a-year busy.

Opened in 2007, the Anderson Center is “visionary,” says its medical director, Assistant Professor of Emergency Medicine Frantz Gibbs. “Administration and leadership worked hand in hand to address the flow of patients, the organization of resources, and the movement of staff.”

Gibbs is focused on advancing clinical care at the center, such as capitalizing on advances in ultrasound technology in order to make faster diagnoses at the bedside and to guide certain procedures. Ultrasound can be used innovatively in the emergency department, he says, especially for patients who are too critical to undergo traditional imaging.

As medical director, his research interests now focus on improving processes within the department and providing higher levels of service. “My sense for the foreseeable future,” he says, “is we’ll just see more and more patient volume.” He believes studying flow dynamics and talking with colleagues from other industries who specialize in customer service can identify creative ways to address patient needs in the ED. “Efficient care is good care at all levels.”

In his 11 years in the field, Gibbs says he’s seen greater

SYMPTOMS OF A GREATER ILL

Why are emergency departments so busy?

Last December, the nation's emergency care system got its report card from the American College of Emergency Physicians, and its grade was nothing to write home about: "C-."

But there was better news for Rhode Island. The state ranked second in the nation, tied with the District of Columbia for a "B-" grade overall.

The ACEP's grim report warned that because demand for emergency care is only growing due to the economy, an aging population, and the failure of the health care system, overcrowding in EDs could be "catastrophic" in the near future. Indeed, in the hospitals served by the University Emergency Medicine Foundation, the clinical practice overseen by department chair Brian Zink, self-pay or uninsured patients have gone up by about 3 percent over the past year. Rhode Island has the second highest unemployment rate in the country (behind only Michigan). And because federal law mandates that no one can be denied service in an ED due to an inability to pay, emergency medicine is often called the "health care safety net," or "the provider of last resort."

It's Not So Simple

According to Zink, however, "all payer classes are using the ED more, and ED utilization is particularly high here in Rhode Island compared to other states. [B]ut actually it's a myth that it's uninsured or homeless or people who can't find other care that accounts for it." Everyone who needs health care is using the ED more, and that points to an access to care problem rather than a lack of health insurance.

Ludi Jagminas, medical director of the ED at Memorial Hospital of Rhode Island in Pawtucket, explains: "There are fewer primary care physicians, and those who are still practicing are booked solid and can't hold slots open for same-day visits. All they can say is, 'Sorry, you have to go to the emergency department.'"

"You hear a lot about people 'abusing' the emergency departments. The conditions in health care—the reimbursement system, the time pressures—all those things have contributed to the increase in emergency visits around the country. You can't see it changing without real radical change, where we resource primary care or look for alternative care sites for things that are not emergencies," Zink says.

"It is a global challenge," Jagminas says. "How do you meet the needs of people who need episodic but not true emergency care, but also respond to people who have true emergencies, and how do you serve both populations equally well?"

And how do you define a "true" emergency? Zink offers this guiding principle: "We always say, 'The patient defines the emergency.' You don't second guess why anyone is there. You just see them and treat them and help solve their problem. If that's just a prescription refill, or pain medication, or helping them withdraw from alcohol, or to protect them because they are a victim of domestic violence, then we view that as our role. There has to be a place within a community that people can turn to when they are having a crisis, whether it's medical, psychological, or social. And most EDs are set up to do that."

Zink finds that these aspects of emergency medicine are often what lure new doctors to the field. "We're attracting a lot of people who believe strongly that the ED should be the safety net and that's an appropriate and honorable thing about emergency medicine."



emphasis on coordination of care between the emergency department and other medical specialties. One example is cardiovascular care. A cardiac catheterization lab is located within the Anderson Emergency Center. Rhode Island Hospital has been nationally recognized for low door-to-balloon times—the time it takes for a heart attack victim to be assessed and brought to the cath lab.

Zink says that the low door-to-balloon times are the result of careful planning and cross-team training. “We couldn’t do that alone. We have to work closely with cardiology, with EMS services, nursing, radiology—everyone has to come together to expedite care for these patients, where time is a very critical part of their initial presentation,” he says.

Another example of that collaboration is the Level 1 trauma center at the hospital, the only one serving a large geographic area. The Anderson Emergency Center serves as the intake point for a high trauma volume.

“We’re situated near major roadways and with a fairly significant number of penetrating injuries or violent trauma, a Friday or Saturday night can just be breathtaking the number of trauma patients we see,” says Zink.

“Emergency medicine, we always say, is part of the acute care spectrum but we’re totally intertwined and interdependent with the other components of that care. So we have to be pretty good at getting along with others.”

THE CHILDREN’S PLACE

On a typical weekday afternoon, the waiting room in Hasbro Children’s Hospital’s emergency department is empty. Gurneys are lined up and nurses staff the triage station, awaiting all comers. “It’s not the middle of the day where we see the volume,” says Susan Duffy. “It’s the nights and weekends.”

The “volume” is some 50,000 children and adolescents

each year. The hospital serves a wide catchment area, from Connecticut to southeastern Massachusetts, and that’s partly what makes it such a rich teaching environment, Duffy says. “We are everyone’s emergency department: for the suburbs, for the inner city, for those new to this country. They all come through here,” she says, sweeping her arm toward the 24 exam rooms that surround a glass-enclosed command center.

She, too, came into emergency medicine as it was still defining itself. “When I was a medical student at Brown, I rotated through the pediatric emergency department that was a little offshoot of the adult department. I met Bill Lewander, who is vice chair of the Department now. Bill is pediatric emergency medicine at Brown. He was really inspiring—a great clinician, very intelligent, and great teacher, and has a lot of balance and perspective on life. That was my first introduction to pediatric emergency medicine.”

After completing her pediatrics residency at Massachusetts General Hospital, she decided to do the pediatric emergency medicine fellowship at Brown. When Hasbro opened in 1994, she was one of the ED’s first attending physicians.

Today, she says, emergency medicine has grown professionally and academically, but the number of patients has also grown, and what they expect from their doctors has changed.

“It’s based more on the professional agenda encounter than it is on the longitudinal relationship,” she says.

Consequently, her greatest challenge as medical director is to meet the demands of a very diverse population of patients. “How do you be attuned to patient satisfaction when you have to meet the needs of a suburban population, a tertiary care population, an inner city population? We constantly struggle with that.”

Parents also have an astute understanding of what the Hasbro ED can provide: pediatricians fellowship-trained in



Duffy's research is on the detection of child abuse. She's working with Brown engineers to use spectroscopy to determine the age of bruises, which can help police prosecute abusers.

emergency medicine, subspecialists in every discipline just a call away, and immediate access to a bevy of tests and diagnostics.

“People have the perception that they need a test and the pediatrician will say, ‘Let’s wait a few days,’ and the patient doesn’t want to wait, so they come here. And a lot of people come here by referral from their pediatricians,” Duffy explains.

That overwhelming pediatric and adult population seen in the Rhode Island Hospital/Hasbro EDs provides a great environment, however, for students “to learn and practice their clinical exam skills and form differential diagnoses,” she says. She and her colleagues mentor every third-year medical student who goes through the pediatrics clerkship, and also teach students who do a fourth-year elective. In addition, every resident in pediatrics spends time in the Hasbro ED. Since 60 percent of the hospital’s admissions go through the ED, it is closely intertwined with the Department of Pediatrics.

Duffy says the department is always looking for more efficient and innovative ways of providing care to the community, such as a new effort to use nitrous oxide (laughing gas) sedation for patients who need procedures.

They also struggle to fulfill their responsibility as the clearinghouse for all acute child psychiatry in the state. Children and adolescents with mental health crises are brought to Hasbro to be medically cleared. With budgetary cuts on the mental health centers, mental health providers have not been able to meet the needs of the community the way they would like to, Duffy says. “If you have an acute mental health need, it’s hard to wait for care.”

Hasbro’s ED has a strong collaboration with the child psychiatry program and has developed a stellar child psych resource that uses social work clinicians and psychiatrists to see children with acute needs. But because mental health issues take a long time to work through the system and find beds for admissions, patients often wait in the ED a long time. “We are in the midst of opening a department collaboratively with psychiatry at the hospital that offers four beds for children,” Duffy says. “The hope is to initiate psychiatric care, keep them out of the hos-

pital, and provide some acute crisis services. It’s been years in the works, and I’m pretty passionate about it.”

Tackling these types of thorny and interwoven issues is exactly what drove her into emergency medicine, Duffy says, something she realized after residency, when she worked with a largely indigent population in Chelsea, Massachusetts. “I thrived taking care of people with complicated medical and social problems; I had a lot of empathy for people with complex social issues.

“We get to see the best and the worst of the world ... people’s kids are sick, and they’re very stressed. You go home and kiss your children and thank God they’re healthy.”

STRETCHED THIN, BUT SATISFIED

The American Board of Emergency Medicine has been tracking career satisfaction among emergency medicine physicians in a longitudinal survey since 1994. In an analysis published last year, 77 percent of respondents expressed high levels of satisfaction with their careers. While not as dire a career choice as predicted in the 1980s, 31 percent of the respondents did report that burnout was a significant problem.

“[Y]ou have to have the right personality and the right mindset, because some people don’t like the unpredictability,” says Jagminas. “I find it continually refreshing and fun because I never know what I am going to see when I start my day. I can walk in and see anything from a childhood injury to a heart attack to someone with a stabbing to who knows what. I find that invigorating.”

Duffy agrees that it takes a certain kind of person to do her job, someone who can simultaneously listen for and respond to people who come to you with questions, alarms sounding overhead, children crying, and more, but also focus intently in critical situations.

“You have to delve into people’s complaints and find out what the true issues are. And the psychiatric patients have just as important issues as the patients who have no food. We all have to do a little social work.

“I think that’s the most challenging part of working in emergency medicine. The medicine is fun. The stresses that come along with the environment are challenging.” ■



Ambulances stand ready outside the Rhode Island Hospital “Accident Room” on October 21, 1938.

ALUMNI ALBUM

CHECKING IN WITH BROWN MEDICAL ALUMNI

CLASSNOTES

1979

Preston C. Calvert '76 was recently voted president-elect of the North American Neuro-Ophthalmology Society, following several years of service on the Society's board of directors. He remains in neuro-ophthalmology private practice in Alexandria, VA, and is on the part-time faculty of the Department of

Neurology at Johns Hopkins School of Medicine. His wife, Margaret E. Guerin-Calvert, is vice chairman and senior managing director of Compass Lexecon, an economic consulting firm. Their daughter, Kate, just graduated cum laude from Kenyon College, making her parents very proud. Kate was an intern with

the FBI for the summer. Preston writes: "Our family enjoys boating on the Chesapeake Bay and other outdoor activities. I still keep in touch with my good friend and freshman and medical school roommate, **Michael W. Cropp** '76 MD'79." Contact Preston at pcc@neurophth.com.

LALA SALAMA

A Brown pediatrician wants sleep added to the list of basic human rights.

The simple phrase “sleep well” took on new meaning for pediatrician and sleep specialist **Judy Owens, MPH '77 MD'80** after her trip to Tanzania last August.

Until then, the customary good-night wish served as a succinct expression of the goal of all physicians in her field; much of her work at the Pediatric Sleep Disorders Clinic at Hasbro Children’s Hospital in Providence, where she has served as director since 1993, involves helping kids sleep well. When the natural balance between sleep and wakefulness is disrupted, insomnia, sleep apnea, or insufficient sleep can result. Her work focuses on restoring that balance.

But after two weeks in East Africa, the phrase *lala salama* (the Kiswahili equivalent of “sleep well”), uttered hundreds of times over to children beaming their appreciation, became something like a prayer. Owens volunteered for the trip with the Canadian nonprofit Sleeping Children Around the World, which gives kids (mostly in developing countries) the essentials for a good night’s sleep. In August, she helped distribute 7,000 bedkits to impoverished Tanzanian children, whose families, in return, pledged to recognize the value of a healthy night’s sleep.

“The mothers’ patience in waiting hours for bedkits in the mid-day heat of East Africa, the children’s delight in receiving them, and the heartbreaking disappointment of all too many families for whom we did not have enough bedkits,” Owens says, “are all testimony to the strength of this partnership.”

Donations to SCAW, run entirely by volunteers, provide a mattress and bedkit, whose contents typically include blankets, pillows, mosquito netting, and clothing. These are produced locally to boost employment and the economy and to reduce transportation costs. Every child who receives a bedkit is photographed and pictures are sent to donors in Canada and the U.S. Since its founding by Murray and Margaret Dryden in 1970, SCAW has provided bedkits for just short of one million children living in poverty in 33 countries and raised more than \$20 million.

Unfortunately, in the 24/7 culture of Western countries,

Owens notes, sleep too often is considered optional and lack of sleep, a badge of honor for the industrious. For the less developed world, it is often viewed as a “luxury” when compared to other basic needs such as food, shelter, and sanitation. Her experience in Tanzania, “a privilege” in her words, was testimony to the value that families place on healthy sleep and their recognition of the clear benefits that sleep has for the health and well being of their children.



A Tanzanian woman sits behind a mosquito net.

With so many in poorer nations lacking the basic tools and conditions needed for even the rudiments of healthy sleep, Owens says, “it is critical that we all work toward a universal acknowledgement of sleep as a basic human need—and thus a basic human right—on equal footing with hunger and thirst, with dire consequences if ignored. The goal must be to ensure that all people, regardless of available resources, have equal access to the basic building blocks of good sleep—a dry, safe, and comfortable sleeping environment, protection from disease-carrying insects, and in colder climates, the provision of warmth.” For more information, visit www.scaw.org.

—Lisa Rowley

Update Status

What are you doing right now?

Post

Take a moment to contact us at med.brown.edu/alumni/ (click on “fill us in”) or send your updated contact information, including email address, directly to us at Med_Alum@brown.edu.

To treat soldiers with PTSD, a physician sends them back to the front — but only in their mind.

“We send people off to war to either kill or be killed,” says Colonel **Mike Roy** ’84 MD’88, an internist with a master’s in public health who runs the Virtual Iraq treatment program at Walter Reed Army Medical Center in Washington, DC. “We’re not equipped as human beings to do either of those things, no matter how much training we’ve received. It’s only logical there will be significant psychological repercussions.”

For those presenting with symptoms of PTSD, the standard treatment involves talk or imaginal exposure therapy: patients typically close their eyes and describe in as much detail as possible the sights, sounds, smells, and sensations associated with the traumatic event. For those willing and able to repeatedly relate such memories, the treatment is promising. But Roy estimates that at least 20 to 30 percent of PTSD patients can’t or won’t talk about the trauma; avoidance, he points out, is a defining characteristic of the disorder. And for many military personnel, seeking help for mental illness still holds the stigma of weakness or incompetence.

Enter Virtual Iraq, a computerized simulation program—which recently received broad media coverage, including in *The New Yorker*—whose early development dates to 1999. At the time, Roy was investigating the combined safety of nerve agent prophylaxis and insect repellents, whose widely reported side effects led many military service members to avoid taking their medication, putting them at risk for malaria. Researchers at Emory University and elsewhere had been using virtual reality to simulate physical and psychological stress—one of the alternatives Roy was studying that might account for the side effects—but its early iterations looked inauthentic. So Roy made a montage of combat scenes from Hollywood classics like *Apocalypse Now*, *Saving Private Ryan*, and *The Deerhunter*, which he showed on a bigscreen as subjects were made to run uphill on a treadmill carrying heavy backpacks and computing mathematical problems shouted at them in rapid succession. The simulations were lifelike, and Roy’s findings concluded that the drugs were in fact safe.

“It feels good when our results get people to take medicine that will help protect them,” says Roy, who is also professor of medicine at the Uniformed Services University of the Health Sciences in Bethesda, MD. He says that the work showed him the potential of virtual reality not just for research, but also for treatment. “After that, all we had to do was get it ready for prime time.”

Today’s version of Virtual Iraq includes a series of high-tech sensory reproductions of a Middle Eastern city and desert: images of city streets, a marketplace, a bridge overpass; sounds of helicopters overhead, gunfire, explosives; smells of trash, body odor, lamb, and spices; vibrations of riding in a jeep

Colonel Roy, left, demonstrates the conduct of virtual reality exposure therapy using the Virtual Iraq environment with a veteran of deployment to Iraq.



toward a checkpoint. These aim to dredge up the traumatic memories that many soldiers keep locked shut—and with them the hopes for successful treatment of PTSD symptoms. “Especially for the younger vets, who are used to playing video games and may be resistant to therapy, Virtual Iraq can be really helpful,” Roy explains.

Roy is currently comparing the effectiveness of imaginal exposure therapy with virtual reality exposure therapy using Virtual Iraq. He also is studying whether virtual reality can be used to predict who will have trouble re-adjusting to the home front. Many soldiers experience a delay of several months between their homecoming and the onset of their PTSD symptoms. “If we could start those individuals in early treatment,” he says, “maybe we could head off the worst of the full-blown symptoms.”

With 20 years in the service under his belt, the Colonel has just re-enlisted for another four. “This is a pretty good place to be,” he says. —L.R.

ALUMNI ALBUM

husband, Mark '74, moved from Westport, CT, to Seattle in 1996. They are now empty nesters. Their son, David, graduated from Reed College in 2006; daughter Anna is a senior at Swarthmore; and daughter Elizabeth is a sophomore at MIT. Roberta is a perinatologist in Kirkland and Bellevue, while Mark is a lawyer in Seattle. For recreation, Roberta skis and hikes. They look

“We pray she will have **Anu’s looks** and **Navin’s luck.**”

forward to attending reunion festivities in the spring.

1982

Michael Migliori '79 and his wife, Marianne, still live in Providence with their four children. Two of their children attend Brown, and their twins are now seniors in high school. Michael is finishing his term as program chair for the American Society of Ophthalmic Plastic and Reconstructive Surgery and has been active in the American Medical Association's House of Delegates. Contact him at mmigliori@eyeplasticri.com.

1987

Carol Kessler '83 is a child and adolescent community psychiatrist who has worked with the underserved popula-

tion in New York and Central America. She recently contributed to and co-edited a book, *Mental Health Needs of Young Offenders: Forging Paths Toward Reintegration and Rehabilitation*, published by Cambridge University Press.

1993

Alison Monds Ward '85 writes: “I recently had the pleasure of returning to campus after many years to drop off our daughter, Kirsten, a member of the class

of 2012. The campus is more beautiful and busier than ever, and we were inspired by President Simmons's welcoming address to the incoming class. Our eldest, Nicholas, graduates from Harvard in the spring. Not to worry, we have no empty nest, as we live with three 7-year-olds who just began second grade. We are still in Germany.” Contact Alison at ali_mward@yahoo.com.

John M. Montgomery '83, a family physician from Jacksonville, FL, was awarded the 2008 Robert Graham Physician Executive Award by the American Academy of Family Physicians at the academy's annual meeting in September.

Navin K. Singh '90 and Anu Mehra Singh (UVA MD'99) welcomed daughter Simrin Arya Singh on March 8, 2008. Navin writes: “We pray she will have Anu's looks and Navin's luck. If Simrin's Apgar scores are any indicator, she will find a shorter proof of Fermat's last the-

orem, help enact legislation for a four-day work week, require restaurants to serve breakfast all day, and through a reworking of the general theory of relativity with eigenvectors prove conclusively that you can have your cake and eat it too.”

1994

Rex Chiu '89 left academics after spending 11 years at Stanford Medical School in the faculty practice. He started a new internal medicine practice called Beyond Basics Medical Practice in Menlo Park, CA. His son, Wayland, 12, and daughter, Kaitlin, 9, are enjoying sports in the local Palo Alto leagues. Rex has started doing endurance mountain bike races and came in eighth for his age group in the Solo 24 Hours of Adrenaline Mountainbike World Championships. He looks forward to seeing old friends at the 20th reunion in May.

1998

Keri Davison Lawrence '94 currently lives in Chapel Hill, NC, with her husband, Tom (Penn State '92), and their two children, Jacob, 5, and Sophie, 2. She is part owner of a medical practice, Carrboro Pediatrics Internal Medicine. Contact Keri at keri_lawrence@yahoo.com.

2000

Kavita Babu '96 has returned to Brown's Department of Emergency Medicine as an attending physician and a key member of its nascent Toxicology

GOOD HOUSEKEEPING

A psychiatrist helps women get the rooms of their life in order.

In July 2004, psychiatrist **Catherine Birndorf MD'95** agreed to a request from the public relations department at Weill Cornell Medical Center, where she was founding director of the Payne Whitney Women's Program. "The Today Show" had called looking for an expert in perimenopause for a segment with Katie Couric scheduled to air the next morning, and PR wanted her to go on.

With so little time to prepare, says Birndorf, "I was hoping mostly not to embarrass myself." Apparently, her television debut was a success. Later that day, she received a phone call from Lucy Danziger, editor-in-chief of *Self* magazine, who had watched the show during her morning treadmill routine. Ever since, Birndorf has been the mental health expert at *Self*, writing a monthly column in which she answers readers' questions about work, relationships, family, and personal issues.

Birndorf's unexpected career move isn't the first time she's surprised herself. The fourth generation in a long line of physicians, she initially resisted the pull of medicine, graduating from Smith College with a degree in economics. But her experience working in a half-way house for the mentally ill led her first to medical school at Brown, then to the emerging field of reproductive psychiatry. "You can't fight your destiny," she says.

Established in 2002, the clinic Birndorf helped create offers psychiatric services for women along the full hormonal spectrum, specializing in issues from infertility, PMS, and pregnancy to post-partum, post-miscarriage, and perimenopause. Patients typically are referred from

is not intimidated by the legal climate surrounding her field. "I don't see my job as risky," she says. Rather, she views her role as empowering women to make the choice that's right for them. "What I do is lay out and legitimize alternatives, help them weigh risks and benefits... [W]e try to find a compromise that will maximize maternal health while minimizing risk to the fetus.

"That's the reason I love what I do: for every woman the answer is different, every case unique."

Recently, Birndorf relinquished her directing duties at the clinic, though she continues to see patients, to free up more time for writing. She and Danziger are collaborating on a self-help book for women, tentatively titled *The Nine Rooms of Happiness*, after a conversation Birndorf had long ago with Brown pediatrician Mary Arnold. The book will help women explore their own "psychological architecture"—the



Catherine Birndorf

"That's the reason I love what I do: for every woman the answer is different, every case unique."

ob-gyns, though increasingly from other psychiatrists reluctant to treat pregnant women in the face of liability fears.

"No one wants to prescribe medication for a pregnant woman," Birndorf says, lasering in on the essence of the rapidly growing specialty. "But pregnant women who are anxious, depressed, or bipolar often need their medications, and studies show that risk to the fetus results from maternal mental illness," she explains. "How sick can a pregnant woman allow herself to get?"

While no advocate of medication as a panacea, Birndorf

emotional dimensions connected to their personal, professional, family, and other facets of life.

"For most of us, most of our rooms are in order," Birndorf explains, "but it's the little things that bring us down. So we need to figure out which rooms are leaking, which doors need to be closed so we can enjoy meaningful, productive, and contented lives. I'm not talking about being blissful or ecstatic," she adds. "That notion of happiness is so oppressive. It's really about finding ways to help us learn about ourselves."

—L.R.

A MYSTERY UNFOLDS

An award-winning scientist explains the mechanism of the chaperone system.

EYE
ON
ALUMNI

“I remember being a student at Brown when Christian Anfinsen won the Nobel Prize in Chemistry in 1972,” says **Art Horwich** '72 MD'75. “I was totally blown away when I heard about his astonishing experiment.”

Anfinsen had taken a protein, the enzyme ribonuclease, in a test tube, unfolded it with denaturant and a reductant, and then asked if it could find its way back to the native active form on its own when the agents were removed. It did, explains Horwich, and in so doing Anfinsen had demonstrated that all of the information needed for a protein to fold into its characteristic three-dimensional active structure is present in its linear sequence of amino acids.

Currently the Sterling Professor of Genetics and Pediatrics at Yale School of Medicine, Horwich could never have known then that Anfinsen's discovery would provide a foundation for his own groundbreaking career in protein folding.

In the late 1980s, Horwich and his fledgling team at Yale were investigating how proteins newly made in the cell's cytosol are imported into the mitochondria, organelles that provide energy for the cell. Previous research indicated that proteins making up the inside of mitochondria passed through its membranes as unfolded chains and, then once inside, folded into active forms on their own. But one night while screening a library of yeast mutants, the group asked if there might not be a mechanism of some kind to assist such refolding. Within days they had found a mutant in their library consistent with such a notion: a test protein had entered the mutant's mitochondria but failed to fold into active form, instead forming insoluble aggregates.

This result was so contrary to accepted thinking—“heretical,” says Horwich—that the team spent the next year testing the mutant's mitochondria with many different proteins, before at last becoming convinced of the broad nature of the folding defect. To their great surprise, the defective gene in their mutant was for a large double ring assembly, the hypothesized machine-like structure that played a role in mediating folding of polypeptide chains to their native state.

Through a series of subsequent genetic, biochemical, and structural studies, Horwich's team and others have discovered how relatives of this ring machine, called chaperonins, provide the last step of information transfer from DNA to folded active protein.

The chaperonins provide “kinetic” assistance to protein folding, Horwich explains, without changing the folding route or final structure of proteins. “In particular, the chaperonin allows the folding protein to use Anfinsen's principles,” he

says, “but in a context that prevents an off-pathway step of protein aggregation, which is what occurs in a number of neurodegenerative diseases.”

To prevent such aggregation, the chaperonin ring functions in two sequential ways, Horwich continues: “First it binds unfolded or misfolded proteins, one at a time, in an open ring, capturing and masking the exposed greasy surfaces to which others can stick or aggregate. Next, the chaperonin binds ATP and a ‘lid’ structure called a cochaperonin to release its captive protein into an encapsulated version of the cavity, where it folds in solitary confinement, with no other protein to aggregate with. Then ATP hydrolyzes, and like a jack in the box, out pops the folded protein, ready to do its job in the cell.”

Horwich's studies of the mechanism of the chaperonin system have received increasing recognition. An HHMI Investigator since 1990, he was elected to the National Academy of Sciences in 2003 and to the Institute of Medicine last fall. He and close collaborator Franz-Ulrich Hartl, noted German biochemist, have shared multiple honors, including the Protein Society's 2006 Stein and Moore Award, the 2007 Wiley Prize in Biomedical Science, the 2008 Lewis S. Rosenstiel Award, and Columbia University's 2008 Louisa Gross Horwitz Prize.

Continued on next page.



Art Horwich

Horwich remains genuinely excited about the process of scientific inquiry and respectful of the predecessors whose work laid the foundation for his own. “Now the real magic takes place...” he says—for example, describing co-chaperonin activation of folding in the chamber. He delights in pointing out that Anfinsen’s notions of protein folding were correct all along. When the protein folds in the chamber in isolation, he explains, “it follows Anfinsen’s original rules. There’s no contradiction at all with Anfinsen’s work.”

Horwich’s current research is exploring the mechanism of protein misfolding and aggregation in disease. Characteristic aggregates are formed in the nervous system in more than 20 different neurodegenerative diseases, including Alzheimer’s, Parkinson’s, and Huntington’s. In particular, Horwich is studying why in one familial form of ALS (Lou Gehrig’s Disease), a cytosolic enzyme misfolds, despite the presence of chaperones. “We would like to gain an understanding of why the chaperone system—designed to prevent aggregation—is unable to prevent misfolding and aggregation in this context,” he explains.

“We have good tools today,” he says with optimism, “and in that respect, science is in a really good place.” — *L.R.*

ALUMNI ALBUM

a key member of its nascent Toxicology Program. After completing her emergency medicine residency at Brown, Kavita went on to a medical toxicology fellowship at the University of Massachusetts. She and her husband, **James Carroll MD’06**, welcomed Declan Anil, on November 21, 2008. James is a surgical resident at UMass Medical Center.

2001

Valerie Weiss ’97 writes, “We just had a second child, Kyra, who is 3 months and a very happy little girl. I am teaching anatomy and physiology full time at a local university. I transitioned out of doing medical illustration after having my son two years ago. I hope to get back to drawing some day but in the meantime, I show my students as many illustrations as possible!”

2002

Sumona Saha ’98 writes: “I married Vivek Prabhakaran (Stanford PhD’01) in April 2006. We have been long-distance while finishing our fellowships,

he at Johns Hopkins and me here at Brown. After four years apart, we’re moving to Wisconsin to begin faculty positions at the University of Wisconsin-Madison, where I’ll be joining the division of gastroenterology. We would love to hear from Brown alums in the Madison area.” Contact Sumona at sumonas@hotmail.com.

2003

Christopher Dodson ’99 and his wife, Cara, announce the June 11 birth of their son, Connor Christopher Dodson. Chris finished his residency in orthopedic surgery in June and started a fellowship in sports medicine/shoulder surgery at the Hospital for Special Surgery in New York City. Cara is in her fourth year of private practice in obstetrics/gynecology in SoHo. They look forward to seeing old friends at the upcoming 10th reunion.

Minerva Perez has been named to the board of directors of the Natividad Medical Foundation in Salinas, CA. She completed the Natividad Family Medicine Residency Program in 2006, followed by an Obstetrical Fellowship at Santa Clara Valley Medical Center in San Jose. Minerva is now one of two family practice physicians at the Natividad Medical Group clinic which opened

its doors in 2007. She attended high school in Salinas, and Minerva says, “My educational background offered outstanding opportunities, but my goal has always been to return to the community that I know and love.”

Mark Zonfrillo ’99 and Nancy Cocchiarella (Holy Cross ’97) celebrated their first wedding anniversary on June 16. The couple met in New Haven during Mark’s pediatrics residency and Nancy’s graduate studies in nursing at Yale. They were married in Nancy’s hometown of Holliston, MA. The wedding party included groomsman **Brad Maron ’99 MD’03**. The couple lives in Philadelphia, where Mark is a pediatric emergency medicine fellow at the Children’s Hospital of Philadelphia and Nancy is an ob-gyn nurse practitioner.

2004

Jedediah Muir Hooper ’98 is the current first-year fellow of the Stanford-San Mateo County Community Child and Adolescent Psychiatry Fellowship. Stanford University and the San Mateo County Health Department’s division of Behavioral Health and Recovery Services are working to overcome a lack of well-trained child psychiatrists with this two-year fellowship program that focuses on work in community-based

pleted his residency training at San Mateo County General Hospital. He lives in Palo Alto, CA.

Lynn Sweeney completed the Brown emergency medicine residency program in 2008 and subsequently joined the University Emergency Medicine Foundation. She is a clinical assistant professor of emergency medicine at Alpert Medical School. She and her husband, George, live in Cranston, RI, with their children Elliot and Eve.

2005

Laura A. Capaldi '01 married Thomas F. Della Torre on July 12. She is completing the dermatology residency program at UMass Medical Center in Worcester. Her new husband is a graduate of Boston University School of Medicine, and he completed an ENT residency at Yale-New Haven Hospital.

2006

James Carroll (see Kavita Babu, 2000).

Beverly Johnson '01 married Patrick McCormick (Columbia MD'08) on June 7 in Basking Ridge, NJ. Bridesmaids included **Tonslyn Toure-Auguste** MD'05. The couple will reside on the Upper East Side of New York City where Beverly is finishing her medicine residency at NYPH-Cornell and Patrick is pursuing an anesthesia residency at Mt. Sinai. The couple met volunteering at the Columbia University Free Clinic while Beverly was doing research at Columbia College of Physicians and Surgeons. Beverly is social chair of the Brown Club of New York City. She

would love to see classmates at upcoming alumni events and can be reached at Beverly_Johnson@alumni.brown.edu.

OBITUARIES

MD'77

Alexander Balko, 57, died on September 16. He is survived by his wife, Ronnie, two sons, Alexander Jr. and Carson, and two daughters, Larissa and Sydney.

MD'92

Merry Jayne Haworth, 54, passed away on October 29, 2008, in Geneva, Switzerland after a one-and-a-half-year battle with cancer. She was born in Dallas, TX, and received a BA in music from the University of Nebraska before earning her MD from Brown Medical School.

An Iowa City resident from 1992-2007, Haworth completed a family practice residency at the University of Iowa and worked in the Mercy Hospital Emergency Care Unit, serving as medical director from 1998 to 2005. A music lover, she performed with the Iowa City Community Band and the Iowa City Community String Orchestra. She traveled on many occasions as a performer with the International Flute Orchestra. She was also instrumental in obtaining funds for a Steinway piano for Mercy Hospital's atrium.

In September 2007, Haworth moved to France to be near her daughter's family. She is survived by her daughter, Mackenzie Pitcairn-Renaud (Simon), and grandson, Henri Renaud, of St-Julien-en-Genevois, France, and her son,

Marshall Pitcairn of Hatboro, PA.

Friends and classmates may make a gift in Merry Jayne's honor by sending checks to the Merry Jayne Haworth MD'92 Memorial Scholarship to Brown University, Office of Medical Alumni Programs, Box G-S121-9, Providence, RI 02912 or by giving online at <https://gifts.development.brown.edu/Brown/>.

HS'84

Roger Ferland, MD, died suddenly at Rhode Island Hospital on December 1, 2008. He was 54.

After earning his BS and MD from Tulane University, Ferland completed his residency at Brown/Women & Infants Hospital in 1984. A clinical associate professor of obstetrics and gynecology at Alpert Medical School and the medical director of surgical services at Women & Infants', Ferland had practiced in Rhode Island for more than 25 years, delivering more than 2,000 babies during his career. He was an avid traveler, bicyclist, and sailor, and was an active member of Grace Church in Providence.

He is survived by his wife, Kimberley A. Cleary, and his children, Meredith, Benjamin, and MacKenzie Ferland.

Parents and Family Weekend

..... 2009

Save the Date
October 16 – 18

Parents and families of all
Alpert Medical School
and Program in Liberal
Medical Education students
are invited to campus.

We hope you'll join us!

Information packets
will be mailed in late
summer and posted at
<http://med.brown.edu>.





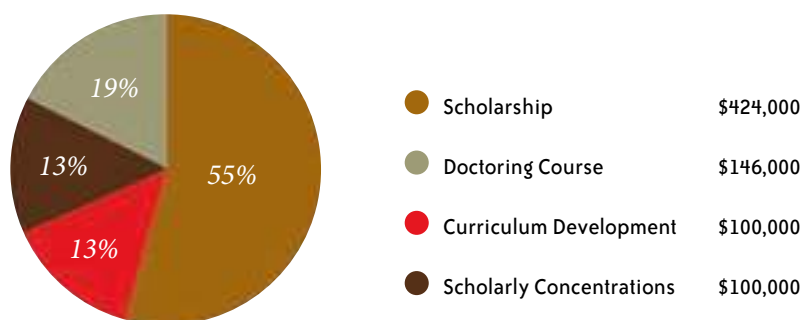
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Questions? Contact Bethany Solomon, director of the BMAF, in the Office of Biomedical Advancement at 401 863-1635 or Bethany_Solomon@brown.edu.

To learn more about the students and the medical education initiatives supported by the BMAF, visit <http://bmaf.brown.edu>.



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*dancing the night away at Campus Dance,
the excitement of Match Day, the joy of graduation
and the heartbreak of saying goodbye to friends.*

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remember the joys of life at Brown.*

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the reunion classes of
'79, '84, '89, '94, '99, and '04
are invited back to
Reunion Weekend 2009.*

*Watch your mailbox
in early spring for Reunion
registration materials.*

*Details will also be posted
at [http://med.brown.edu/
alumni/reunion](http://med.brown.edu/alumni/reunion).*

**save the date
may 22-24**

2004

