

BROWN MEDICINE

Volume 14 | Number 3 | Fall 2008

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

RECOGNIZE
ABSORB
INTERPRET
BE MOVED

REFLECTIONS ON DOCTORING

LETTER FROM THE DEAN



Aim High

I am honored and delighted to be addressing the Brown medical community as the sixth dean of medicine and biological sciences.

Alpert Medical School and its accompanying programs in Biology and Public Health contain some of the country's most talented scientists as well as outstanding

educators and clinicians. Our educational mission spans the teaching of undergraduates, graduate and postdoctoral students, medical students, residents, and fellows. The physicians in our hospitals and affiliated practices not only teach medical students but provide outstanding care for the citizens of Rhode Island and New England. We rank in the top quarter of medical schools in the country. But we aim higher.

In order to provide the most advanced, cutting-edge medical care and rank among the very top schools nationally, we need to invest in and grow our research programs, bringing in more top scientists and encouraging our students to take part in research. We will do this by 1) constructing a new medical education building close to our research buildings and hospitals; 2) investing with our hospital partners in new programs such as a cancer center; and 3) investing in the growth of our Program in Biology and our Public Health Program. We may also enhance our partnerships with other institutions, such as the Marine Biology Laboratory in Woods Hole, emphasizing our concerns about ecology and the environment. The Warren Alpert Foundation gift, not to mention the generous support we receive from so many others through the Campaign for Academic Enrichment, gives us the resources to invest in the construction and programs above, and resources for scholarships as well.

By investing in the medical education building and new programs, we will be investing in our future as one of the most dynamic and exciting schools in the country, a reputation that in many ways we already have.

I look forward to sharing in this success in the coming years and welcome your input at any time.

Edward J. Wing

BROWN MEDICINE

Volume 14 | Number 3 | Fall 2008

EDITOR

Sarah Baldwin-Beneich '87

ART DIRECTOR

Mindy Oswald

STAFF WRITERS

Kris Cambra, Lisa Rowley

PRINTING

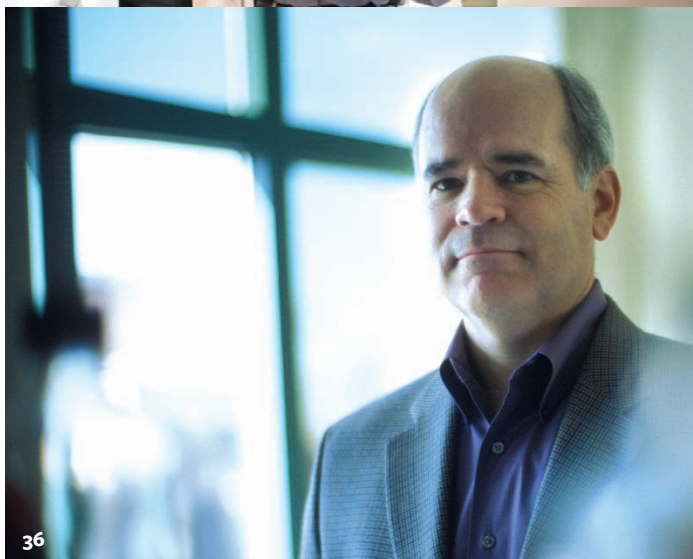
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Brown Medicine is published three times a year by the Office of Biomedical Advancement.
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NICHOLAS MCINTOSH; ADAM MASTOON; KAREN PHILLIPPI



**“I had such a strong safety net.
My worst case scenario was to work
clinically and have a nice life.”**

—Joel Selanikio MD’92

INSIDE

FEATURES

COVER
22
STORY

Reflections on Doctoring

BY EILEEN O’GARA-KURTIS

Think. Reflect. Write. The how and why of
narrative medicine.

28 The Road Also Taken

BY SHARON TREGASKIS

Divergent paths lead some docs away from
clinical medicine.

36 Imagine That!

BY KRIS CAMBRA

Engineering + biology = bio-ingenuity.

COLUMNS

Letters	3
The Beat	4
Peer teachers PLME Fulbright Dharma initiative	
Resident Expert	15
A pregnant pause.	
Zoom	16
From Carnegie Hall to the Brown campus.	
Field Notes	18
Bosnian amputees made whole through sport.	
Momentum	20
It was a very good year.	
Exam Room	21
Why students choose internal medicine— and why they don’t.	
Alumni Album	44
Commencement-Reunion in review.	
Obituaries	52
Linda Bozzario Sungman Cha	

ON THE COVER

Lettering by Ward Schumaker

LETTER FROM THE EDITOR



Dreams of Reality

A friend of mine recently drew my attention to a *Harvard Business Review* article titled “The Existential Necessity of Midlife Change,” on midlife and myths of the midlife crisis. As someone in the throes of both, I was intensely interested in what the authors had to say.

Surprisingly, though, rather than serving as a GPS to get me through what the authors coyly term my imminent “midlife transition,” the article instantly reminded me of the alumni described in “The Road Also Taken” in this issue of *Brown Medicine*.

Of course, the career changes these physicians made had nothing to do with midlife and everything to do with their sense that they could do more or do better if they did something other than practice clinical medicine only. I was reminded of them because each beautifully exemplifies the *HBR* article’s recommended approach for a successful transition: concentrate on the connection between your aspirations and your skills. “To be productive, dreams must be connected to our potential,” warn the authors. “Otherwise, they are idle fantasies.” Clearly, these alumni are in full potential-realizing mode, and the world is better for it.

INBOX

BIOBANK BUY-IN

As a medical researcher in genetics and oncology, I read with interest the story about the Rhode Island BioBank project (Spring 2008 issue). Similar projects in other countries—for example in Iceland, Norway, and Sweden—have made important contributions to science by matching data from nearly complete collections of the populations’ DNA with records of vital statistics. While the ethnic homogeneity of such countries has been advantageous for these studies, it has also been a limitation, because the results are hard to extrapolate beyond the European populations from which they were derived. The ethnic diversity of Rhode Island will allow for the elucidation of data that will be more generalizable and more useful than that coming from Scandinavia. The combination of ethnic diversity, a population that tends toward geographic stability, and a lead institution trusted by the people that it serves makes Rhode Island an ideal setting for the development of a BioBank.

In addition Rhode Islanders can expect benefits to themselves. This may be the only opportunity for many years to perform a detailed genetic analysis of some of the populations mentioned above...additionally, the collaborations developed will enhance the

SUGGESTION BOX

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



prestige of the medical school, allowing for the development of other cutting edge projects that will serve all Rhode Islanders. Collaboration will also facilitate the referral of Rhode Island patients to collaborating institutions.

The concerns of the public about medical and genetic privacy must be taken seriously, and appropriate safeguards must be in place to protect privacy. Dr. Hawrot's project will make important contributions to health care in general, with particular benefits likely for Rhode Islanders.

ROB SOKOLIC '91 MD'96
Bethesda, MD

COST OF AN MD

Our current residency selection process is threatened by excessive medical student debt (Spring 2008 issue). Historically, students have matched to specialties based on interest and aptitude, with future income a secondary concern. Society benefits, since training astute family physicians is as important as training skillful orthopedic surgeons.

As medical students (especially those from private universities like Brown) accumulate educational loans well into the six figures, laudable professional goals may need to defer to financial survival. One can

readily imagine a system where our brightest students (or those with the largest loans) gravitate to specialties based on remuneration. Inevitably, both our profession and society will suffer.

Alpert Medical School's administration and the Brown Medical Alumni Association recognize the seriousness of this problem and have jointly pledged 55 percent of the Medical Annual Fund to students and scholarships. Don't we want our future colleagues to choose their careers for the same honorable reasons that we chose our own?

PETER J. PANTON '79
MD'82

Chair, Brown Medical Annual Fund
Chicago, IL

HOLD YOUR BREATH

Your [article] on a non-invasive and quick method to detect CO in the ER (Spring 2008 issue) raises several conundrums. Widespread CO screening in emergency departments would dramatically increase the incidence of elevated CO blood levels. And this of course brings on the question, What is the appropriate follow-up?

Ideally, the clinical finding of elevated CO levels should trigger a public health response. Who is going to check on the source of exposure(s) and address the same? ...Over 60 percent of nonfatal CO poisoning visits to emergency departments are due to residential exposures; 10 percent of these are children under four.

Health agencies and advocates should convene a Carbon Monoxide Safety Collaborative to develop an approach that ties surveillance to an investigation of CO sources. And that, institutionally, calls for programmatic collaboration that includes health, EMS, and emergency response, police and

fire, housing and utilities, and environmental and occupational safety regulators.

J. CELENZA
Rhode Island Committee on
Occupational Safety and Health
Providence, RI

Dr. Suner responds:

The issues raised by Mr. Celenza are valid and require further action. It is true that universal screening will generate more cases of patients with elevated COHb levels. A portion of this population will be symptomatic and will require treatment. A larger portion will have no symptoms and this is the group which will pose a challenge to the public health system. First, cutoff levels for normal, abnormal, and borderline COHb levels will require re-definition. This will require further studies with long-term follow up. Separate norms for smokers and non-smokers will need to be developed. Then, system-wide response protocols to positive levels will also need to be constructed. Will the fire department check environmental CO levels in dwellings where the patients live and work in all cases? Should these patients and their families be screened for subtle neuropsychiatric disorders that can be caused by CO exposure? Should they undergo repeat testing, as delayed manifestations of CO toxicity are common?

As Mr. Celenza points out, there are many more questions than answers that our study has generated. I, personally, would welcome the creation of a Carbon Monoxide Safety Collaborative to further study these issues and develop procedures.

SELIM SUNER '86 MSc'87
MD'92
Associate Professor of
Emergency Medicine
Alpert Medical School



THE BEAT

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



Meeting of
the minds:
the Doctoring
Teaching
Academy
Fellows

SCOTT KINGSLEY



Sneak Peek

“People think **studying Buddhism** means you become peaceful and calm, and anybody who knows me knows that **nothing could be further from the truth.**”
Page 12



May I Help You?

First-years will surely thank members of this Academy.

Teaching Academy Fellows act as peer tutors for first-year medical students in the Doctoring course, mentoring them in the art of the medical interview, the physical examination, and professionalism. In the Doctoring course, students meet weekly in a group of eight to learn interviewing and physical examination skills with two faculty members. Two fellows are assigned to each small group, each responsible for four students.

“The Teaching Academy’s job is to give first-year students opportunities to hone and practice their clinical interviewing skills,” says Bryan Beutel MD’11, one of the fellows. “[Fellows] have already gone through Doctoring and we can give them tips on working with standardized patients, the OSCE [Objective Structured Clinical Exam], and other assessments of competence.”

Fellows were nominated by their own small group leaders from last year. While this is the third year of the Academy, the program was further refined and “formalized” this year. Nitin Aggarwal MD’11 serves as the student coordinator, with assistance from David Washington ’07 MD’11, Bridget Malit MD’11, and Jennifer Gao MD’11. The Fellows

have a formal training session in August and a semester calendar that outlines what skills the fellows will practice with the first-years and when.

Aggarwal says the fellows have a lot to offer. “With regard to vital signs and the physical exam, the fellows have had a lot of experience at their community mentor sessions; this allows the fellows to give tips on how to most effectively use these skills in an actual clinical setting, outside of a standardized patient setting,” he says. “Closer to the OSCE, the fellows provide

great advice on some of the things that evaluators are picky about—this helps calm the first-years as this is the first time they are being evaluated on such skills.”

They are selected for their outstanding performance as students in the first year of

Teaching Academy, second-year students learn and practice their own teaching and leadership skills, which may help them to decide early on if medical education is of interest to them in their careers,” she says.

With Taylor’s assistance, Aggarwal and Salma Faghri, a fourth-year student who helped with the training and development of the fellows this year, have been selected to give a presentation in

January 2009 about the Teaching Academy at the Annual Predoctoral Education Conference of the Society of Teachers of Family Medicine, a national academic organization devoted to medical education.

Taylor is now calling the Teaching Academy for second-year medical students the “Junior Teaching Academy” to distinguish it from the “Senior Teaching Academy,” which is new to the course this year. “Since the existing peer-teaching program is so popular with both first- and second-year students, I wanted to expand the concept to include some of Brown’s most experienced teachers and learners: senior medical stu-

dents and physicians in residency and fellowship.” The Doctoring course is piloting the addition of senior teaching fellows in the second year of the course by matching interested senior medical students and residents from internal medicine and family medicine with small group faculty pairs and student groups.

“My hope is that having senior students and residents participate in the course as often as their schedules will permit will have myriad benefits for everyone involved. Doctoring students will gain additional teachers, role models, and mentors. Members of the senior teaching academy will learn and practice formal teaching skills as well as gain some fundamental medical education faculty development skills. Experienced small group faculty can mentor students and residents interested in teaching in exchange for some assistance with the significant teaching expectations of the course.”

Taylor is also collaborating with the Medical School’s Scholarly Concentrations Program in the hope that in the future, participation in the Senior Teaching Academy may be routinely offered as an opportunity for fourth-year students in the Medical Education concentration. —**Kris Cambra**



Julie Taylor
(bottom right)
with members
of the Senior
Teaching
Academy.

“The senior students provide essential practice time outside of class and have a lot of practical advice to offer.”

the course. Nomination as a fellow is an honor, but fellows are asked to make a significant commitment of time to hold practice sessions and generally be available to their mentees over the course of the year.

“First-year students benefit from working closely in a longitudinal fashion with peer-teachers who have recently completed the course, since the senior students provide essential practice time outside of class and have a lot of practical advice to offer,” says Dr. Julie Taylor, associate professor of family medicine and director of curriculum for the Doctoring course.

What’s more, “As members of the

BOOK
SHELF

We Know What You Read Last Summer

Recommended books from readers
around Brown.

Christine Montross MD'06 MMS'07,
second-year psychiatry resident at
Butler Hospital: **THE CENTER CANNOT HOLD:
My Journey Through Madness** by Elyn Saks.

*"An utterly lucid and often poetic view into
the mind of a person with schizophrenia; both
haunting and inspiring."*

Tony Caldamone '72 MMS'75 MD'75, P'06, professor
of surgery (urology): **ROME 1960: The Olympics That
Changed the World** by David Maraniss.
"Fascinating—a cold-war Olympics."

Leonard Erickson, supervisor, Biomed mailroom:
THE PERSIAN BRIDE by James Buchan.
"Beautiful and emotionally devastating."

Gary Bryson, system administrator/project manager,
Biomed Computer Services: **BROWN BEAR, BROWN
BEAR, WHAT DO YOU SEE?** by Eric Carle.

*"A book I need to speed read before my youngest
flips the pages."*

Mercedes Domenech, MD, PhD, associate dean of minority
medical affairs: **LA CATEDRAL DEL MAR (Cathedral of
the Sea)** by Ildefonso Falcones.

*"A great historical perspective on life in the Barcelona of
the 14th century. Interesting and well documented."*

Kenneth R. Miller, PhD, professor of biology:
REVOLUTIONARY CHARACTERS by Gordon Wood.

*"An eye-opening character sketch of the founding fathers
you only thought you knew."*

Katy Thompson MD'12: **THE GLASS CASTLE: A Memoir**
by Jeannette Walls.

"A touching and thought-provoking look at homelessness."

Scott Turner, director of University web communications:
THE CONTRACT WITH GOD TRILOGY by Will Eisner.
"Remarkable—130 years of life on one Bronx street."

Men's Health: Not Just a Magazine

New center treats the man, not the symptom.

For the past few decades, women's health
has been all the rage. Enormous strides have
been made in increasing awareness, pre-
vention, detection, and treatment of
women's diseases. At
the same time, men's health has languished
out of the spotlight. Until now. Drs. Martin

LILLIS PHOTOGRAPHY/ISTOCK

Miner, clinical assistant professor of family
medicine, Mark Sigman, associate profes-
sor of surgery, and John Wincze, clinical
professor of psychiatry and human behavior,
are co-directors of the Men's Health Center
at The Miriam Hos-
pital, the first inter-
disciplinary health
center for men in
the country.

"When Viagra
became available in
1997, it brought lots
of social attention to erectile dysfunction
[ED] as a health problem," says Miner. But
in 2005, when the *Journal of the American
Medical Association* reported that men with
ED were 1.25 times more likely to have a car-
diovascular event than men without ED, "I
thought it would be on the front page of the

newspaper, or on the evening news," says
Miner, "but it wasn't." The idea for what is
now the Men's Health Center was born.

The center is designed to approach
men's sexual problems in a multidisciplinary
and holistic way, offering coordinated
consultations with Miner, Sigman, a urolo-
gist, and Wincze, a psychologist, including
couples therapy. "All the research shows
that ED is a warning sign. Let's deal with the

**The Men's Health Center at
The Miriam Hospital is the first
interdisciplinary health center
for men in the country.**

underlying condition causing the ED,
whether it be cardiovascular disease, meta-
bolic disease or a prostate issue, and the ED
goes away," explains Miner.

The center began seeing patients last
June, and the newly renovated facility is
slated to open this fall. —**Susan Hsia Lew**





Crawford (second from right) with women from her 2007 research trip to Indonesia.



A house in the Bajau village of Sampela.

Top Scholar

Indonesia or bust.

As a child, Camia Crawford '08 MD'13 contracted dengue hemorrhagic fever and was medevaced from a hospital in Indonesia to Singapore in order to receive a lifesaving platelet transfusion.

STUDENT

Even in her dire condition, the ten-year-old was acutely aware that the other children in her Indonesian hospital were not as fortunate as she. Crawford's first-hand experience as a very sick child in a developing country shaped her view of the world and what she wanted to do in it. Now, as a newly minted Brown anthropology graduate, Crawford is returning to Indonesia as a Fulbright Scholar to spend a year doing public health research before starting medical school.

"Brown is great about giving you one or two years to defer medical school, so I thought I would take advantage of the opportunity. I feel like there is so much I can learn from this experience that will make me a better physician," says Crawford.

She has a hefty itinerary in Indonesia that includes intensive language training and living with a group of "sea gypsies" called the Bajau. Crawford plans to observe and interview the Bajau people and identify challenges to the ecological sustainability of their land and water, disease prevention, and spread of disease. While her research will encompass many facets of scientific and anthropological research—from analyzing the Bajau water sources to learning about their spiritual beliefs and traditional medicine practices—it is all based on her strong belief that human health and a healthy environment are inextricably linked.

"If the environment is being degraded, people get sick, and when people are sick, they don't act in an ecologically sustainable

Her research is based on her strong belief that human **health** and a **healthy environment** are inextricably **linked**.

way," explains Crawford, who plans to work with local and international environmental and health organizations and share her findings with them to improve the health status of Indonesian people and their environment.

—S.H.L.

TO MEDICATE OR NOT TO MEDICATE?

In the July issue of *Pediatrics*, Brown graduate student Molly E. Waring and then-Associate Professor of Community Health Kate L. Lapane reported that children with ADD/ADHD who were not treated with medication were 1.5 times more likely to be overweight than children without either condition. Conversely, children with ADD/

ADHD who were treated with medication were 1.6 times more likely to be underweight than children without either condition. Waring and Lapane used data from

the 2003-2004 National Survey of Children's Health and conducted a cross-sectional analysis of 62,887 children and adolescents aged five to seventeen.

"In light of these findings, children and adolescents with ADD/ADHD should be monitored for overweight and underweight/weight loss," the researchers concluded. "By monitoring weight status of these youth, clinicians will be better prepared to prevent the development of childhood obesity and the negative physical health and psychosocial consequences. Future work is needed to better understand the longitudinal and pharmacologic factors that influence the relationship between ADD/ADHD and weight status in children and adolescents."

CUDOS TO YOU

In a commentary in the June issue of *Primary Psychiatry*, Rhode Island Hospital and Brown University researchers call on clinicians to adopt a standardized measurement of outcomes when treating depression. Led by Mark Zimmerman, associate professor of psychiatry and human behavior and director of the Rhode Island Methods to Improve Diagnostic Assessment and

COURTESY CRAWFORD

Services (MIDAS) project, researchers noted that quantified measurement of depression treatment outcome is necessary to determine effectiveness, but rarely done. To address the obstacle of the added burden of yet more paperwork for clinicians, the team developed a patient self-report tool called the Clinically Useful Depression Outcome Scale (CUDOS). Studies conducted by the research team found the CUDOS scale to be a reliable and valid measure of depressive symptoms that is sensitive to clinical change and can be used to determine whether depressed patients have remitted from treatment.

"We believe that...systematic outcome assessment will assume an increasing importance during the next decade, if for no other reason that payor mandates will require it," says Zimmerman. "Frankly, there is little downside to adopting this approach as part of an overall treatment plan for the depressed patient."

HOPE FOR KIDS WITH OCD

Children as young as five years old who have obsessive-compulsive disorder (OCD) can benefit from family-based cognitive behavioral therapy (CBT), according to a study published in the May issue of the *Journal of the American Academy of Child and Adolescent Psychiatry*. Researchers at the Bradley Hasbro Children's Research Center, led by Jennifer B. Freeman, PhD, assistant professor of psychiatry and human behavior (research), conducted a randomized controlled study involving forty-two children aged five to eight who were diagnosed with OCD. Children who received the CBT program showed significantly greater improvement in OCD symptoms than did children who did not receive the CBT program. In fact, 69 percent of the children who completed all fourteen weeks of CBT achieved clinical remission while only 2 percent of the control group did the same. Even those children who started, but did not complete, the

CBT program did well, with 50 percent achieving clinical remission. "An important takeaway from this study is that children in this age range can actively participate in and benefit from CBT that is appropriately tailored to their cognitive developmental level," Freeman says.

STOMACH SIGNS

Researchers at Rhode Island Hospital have identified two molecular markers that may better predict outcomes for stomach cancer patients. In the July issue of *Clinical Cancer Research*, Steven Moss, MD, a Rhode Island Hospital gastroenterologist and associate professor of medicine, reports that patients who had poor outcomes following surgery for stomach cancer also had extremely low amounts of two proteins, gastrin 1 and 2 (GKN1 and GKN2), which are produced by normal stomach cells. Moss and his team reviewed tissue samples from more than 150 stomach cancer patients who had undergone surgery and found that among patients with the intestinal variant of stomach cancer, very low levels of GKN 1 or GKN 2 at the time of surgery were associated with a significantly worse outcome. The median survival was about two years in these patients compared to a survival of more than ten years for patients with normal levels of GKN1 or GKN2. "If the potential markers identified in our study can help predict a patient's prognosis, we can decide right away which course of action to take and hopefully help patients live longer and more comfortably," says Moss.

WALK THIS WAY

Walking interventions work. In the July issue of *Medicine & Science in Sports and Exercise*, a research team reviewed fourteen

randomized controlled studies of interventions that promote walking as physical activity. The researchers concluded that individuals enrolled in walking interventions walked significantly more than individuals in control groups. Among the more effective strategies for increasing walking were frequent phone reminders to walk, encouraging participants to walk five to seven times per week rather than three to five times per week, and interventions that used pedometers as a motivational tool. Mass media interventions increased awareness of the benefits of walking, but were less successful at affecting individual behavior change without a

Children can actively participate in and benefit from CBT that is appropriately tailored to their cognitive developmental level.

supplemental intervention. David Williams, PhD, assistant professor of psychology and human behavior, and Bess Marcus, PhD, professor of community health and psychiatry and human behavior, were part of the research team, which included researchers from several universities. —S.H.L.

Weinstock Gives Us the Skinny

New ideas in skin cancer prevention.

More than half of all cancer diagnoses in the United States are skin cancer—more than 1 million cases annually, says Martin Weinstock, professor of dermatology and community health and a dermatologist at the Providence VA Medical Center. In a few years those statistics may change for the better: Weinstock has received

ELEVATOR PITCH

a \$10 million grant from the Veterans Affairs

Cooperative Studies Program to determine whether an easily available skin cream can prevent skin cancer.

Weinstock's study addresses basal cell and squamous cell carcinomas, which are not often fatal like melanomas but are potentially dangerous or disfiguring. The agent being tested—5-Fluorouracil—already is used in a topical cream for actinic keratoses, rough pink spots of skin that may turn into skin cancer.

Weinstock has proposed that applying the 5-FU cream to the face and ears twice a day for several weeks could actually prevent the appearance of skin cancer. "Perhaps, if people use the treatment every three years," he says, "their risk of skin cancer may be reduced by more than 50 percent. A million cases a year, cut in half? That's huge."

Below, Weinstock shares some tips on prevention.

Do adults and children need to wear different types of sunscreen?

No, adults and children can wear the same sunscreen. I recommend that people put on sunscreen before they go out, a half hour after being outside, and periodically thereafter.... It's just like painting a house. You paint a first coat. It doesn't look that great. You put on a second coat, and it starts to look good. It's the same thing with sunscreen. Reapplying makes sense.

What about the notion that "getting some color"—a tan, in other words—is healthy?

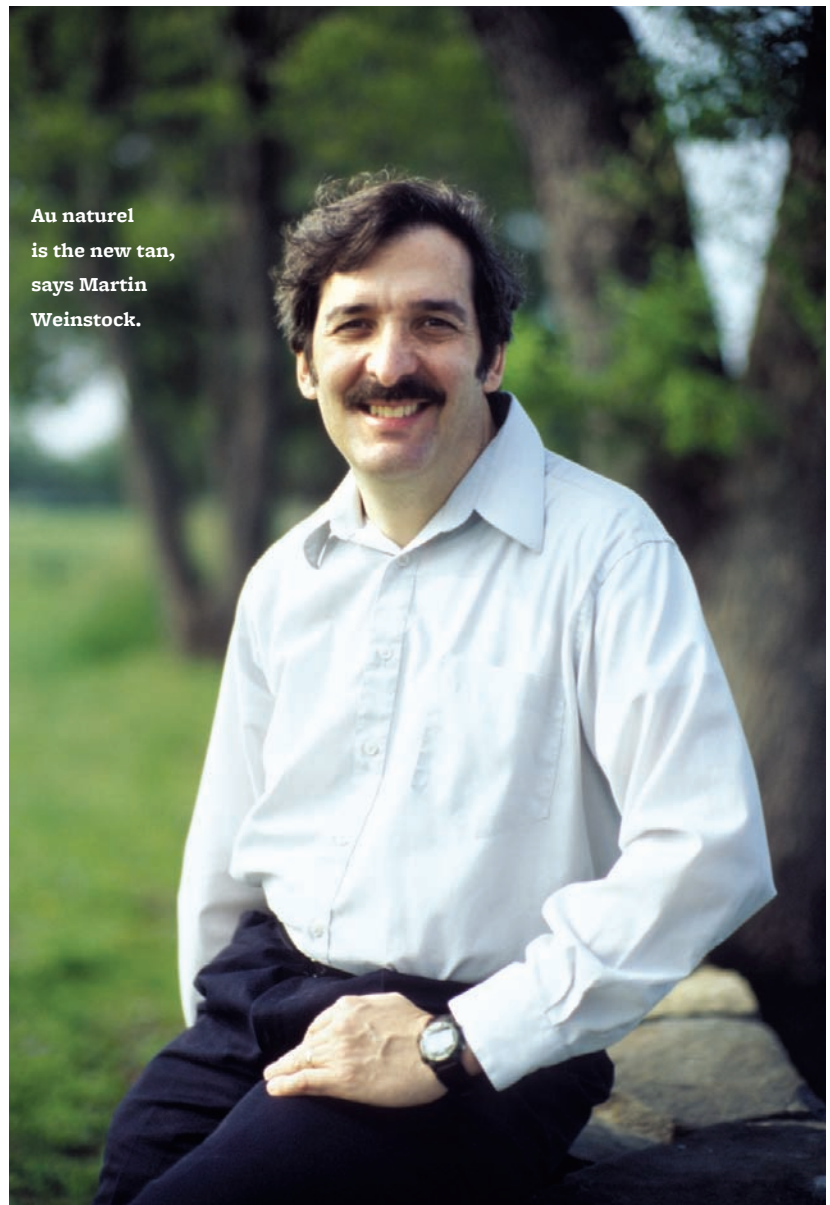
The healthiest color of your skin is the color you were born with. That's

The number of people with **melanoma** is rising faster than the number of people with other types of cancer.

your color. So if you were born with tan skin or brown skin, great, but if you were born with white skin and you start getting this idea that you're going to expose it to all this radiation so it can become tan or brown, it's no great surprise that you may be doing some damage there.

Research shows that the number of people with melanoma is rising faster than the number of people with other types of cancer.

KAREN PHILLIPS



Au naturel is the new tan, says Martin Weinstock.

Why?

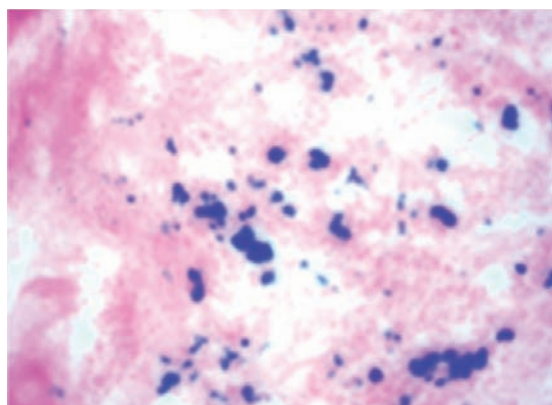
That's a complicated question. The primary reason for the rise in melanoma over the past sixty-five years—during which time it has risen about fifteen- to twenty-fold—is that people are getting more sun exposure and more intense sun exposure than they did in years past. Although sun exposure is not the only cause of melanoma, it is the major reason for this huge rise, in my judgment.

When is it advisable for people to see a dermatologist for a skin check-up?

If they have a spot on their skin that they're concerned might be skin cancer, they should make an appointment. The most important warning sign for skin cancer is change in a spot on the skin—that is, change in size, shape, or color—or new spots or sores that don't heal.

In general, I recommend that people perform a monthly skin self-examination in a thorough and careful manner, looking at all the different areas of the skin. ... To be thorough, a lot of people find it helpful to have someone else look at areas that are hard to see. For people who are at high risk of skin cancer, early detection is critical.

Edited from an article that originally appeared on Today at Brown (<http://today.brown.edu>).



The Smallest Particle

Big news for better cancer detection.

A team led by Professor of Chemistry Shouheng Sun has created the smallest iron oxide nanoparticles to date for cancer detection by magnetic resonance imaging (MRI).

FINDINGS When injected into the bloodstream, nanoparticles bind to cancer cells and emit radio signals that make it easier to detect tumors by MRI. The smaller the nanoparticle, the more easily it travels through the bloodstream and the less likely it is to be detected and interfered with by the immune system. The magnetic nanoparticles created by Sun and his collaborators are about 8.4 nanometers in diameter—some six times smaller than the size of particles currently used in medicine. In addition, the peptide coating (which enables the nanoparticles to attach to tumors) of their nanoparticle is extremely thin—just two nanometers in thickness, ten times thinner than the coating available in most popular MRI contrast agents. This thinner coating allows the particles to emit a stronger signal for the MRI to detect.

The researchers published their findings in the May issue of the *Journal of the American Chemical Society* and plan next to test the nanoparticles on various types of tumors in animals. —**S.H.L.**

Blue Ribbon Bard

Med student waxes poetic, places first.

Joshua E. Fischer MD'10 won first prize for his poem “The Whole Time You Lay Dying” in the fifth annual Michael E. DeBakey Medical Student Poetry Award, sponsored by Baylor College of Medicine. The competition honors the late Dr. Michael DeBakey, a renowned cardiovascular surgeon, scientist, educator, and author.

No tyro when it comes to the written word, Fischer also took part in the Physician as Communicator elective last year, run by Clinical Assistant Professor of Family Medicine Theresa Schraeder, an editor at the *New England Journal of Medicine*.

“Writing is just something I’ve always done in my spare time,” says Fischer. “Winning this award was an unexpected bonus.” —**Sarah Baldwin-Beneich**

Unstoppable

She’s building community, brick by brick.

Last August, Caitlin Cohen '08 MD'13 flew to Los Angeles to stroll down the red (or in this case, blue) carpet and into Fox Network’s annual Teen Choice Awards ceremony. Named one of the top nine activists under the age of twenty-five in the U.S., Cohen scored a \$10,000 Do Something Award for the Mali Health Organizing Project (MHOP), which she co-founded in 2006. At the ceremony, hosted by Miley Cyrus, one Do Something Awards winner (determined by online voting) received \$100,000 for his work as an anti-tobacco activist.

DO-ER Based in Sikoro, a slum of Bamako, Mali, MHOP helps residents develop their own health projects and advocate for themselves with government officials (see *Brown Medicine*, Winter 2008). Cohen’s next stop is Bogotá, Colombia, where she was invited to share her expertise on community organizing at a conference for developing-world medical schools and activists. The October conference is being held by The Network: Towards Unity for Health, a global association of individuals and institutions committed to improving health in the communities they serve.

As if organizing slum residents, building clinics, and presenting at international

conferences were a tad abstract for her, Cohen confesses, “I’m really looking forward to the practical knowledge I’ll get when I start medical school next fall, though I am dreading anatomy lab.” —**S.B.B.**

For more information about MHOP visit www.malihealth.org/.



High School Musical's Monique Coleman (left) hands over the Do Something Award brick.

COURTESY SUN AND PROFESSOR XIAOYUAN CHEN (STANFORD U.); KRISTINA SJISTOCK; COURTESY DO SOMETHING

Enlightened Intensive Care

Meet the man voted “least likely to be a Buddhist.”

Seeking greater access to your true self? Look to Mitchell Levy, MD, medical director of the Intensive Care Unit at Rhode Island Hospital by day, teacher of Shambhala Buddhism by, well, life.

A practicing Buddhist since 1971, Levy was appointed an Acharya (senior teacher) of Shambhala Buddhism, the most popular form of **WHO KNEW?** Buddhism in the Western world, in 2004. He currently teaches at the Providence Shambhala Center and travels widely as a representative of the Shambhala International organization.

Levy began studying Buddhism in the late 1960s while in college, when “everyone was reading Eastern thought,” he recalls. “A lot of people ask me how I converted to

Buddhism, because I grew up Jewish in Brooklyn. For me, it wasn’t so much a conversion [as] finding something that I already felt made complete sense to me.” His spiritual journey has taken him around the world; Levy served for ten years as personal physician to Trungpa Rinpoche, founder of Shambhala Buddhism.

As a teacher of this faith/philosophy, Levy helps people bring to the surface the inherent goodness and dignity that reside deeply within every human being and use these qualities in their daily pursuits. Buddhism enhances Levy’s own clinical practice as an intensive care physician and medical school faculty

member (see *Brown Medicine*, Fall 2003). His dedication to the subject of end-of-life care, for instance, is a convergence of his spiritual and professional interests. “Shambhala Buddhism creates an environment that wakes people up, sharpens their intelligence, and makes them more aware of what needs to be done,” says Levy. “You can see how that can be helpful in a hospital teaching environment.”

Intensivist and Buddhist does make for an odd combination. He adds, smiling,

“Shambhala **Buddhism...wakes people up**, sharpens their intelligence, and **makes them more aware** of what needs to be done.”

“People think studying Buddhism means you become peaceful and calm, and anybody who knows me knows that nothing could be further from the truth.” —**S.H.L.**

SCOTT KINGSLEY



Acharya Levy
at home.

Appellation Transformée

United they stand for LGBTQ patients.

Members of the student group formerly known as QueerMed enjoyed their first year working under a new name: GLAAM (Gays, Lesbians and Allies Advancing Medicine). The moniker is intended as a reminder that

regardless of sexual orientation, any student can be a member. It's also meant to reflect the group's professional and advocacy-related goals.

True to their group's name, this past year GLAAM members took part in community outreach efforts such as medical screening and counseling. They talked with physician mentors about caring for LGBTQ patients, selecting supportive residency programs, and finding allies within the medical community. They forged a partnership with Lifelines Rhode Island, a local organization dedicated to people of transgender experience, and co-organized a training session on transgender issues at the Medical School. They welcomed all students to a National Coming Out Day celebration. And they organized social events that connected the group's members with the greater Brown LGBTQ and ally community.

On GLAAM's docket for this year? Possibly developing a rapid HIV testing and counseling training program for med students with the help of experienced providers, working with the American Medical Student Association to develop an online guidebook for LGBTQ students applying to medical schools, and building more ties with area physicians as part of an LGBTQ mentor program.

—**Krista Hachey '07 MD'11**

To find out more visit <http://glaam.blogspot.com/>.

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COURTESY AESCULAP

Gloves. Scalpel. Computer.

Tom Brady, take heart.

Anterior cruciate ligament (ACL) injuries have come a long way from being the career-ending moment of high-profile

athletes of decades past. Today, ACL reconstruction surgery has made it possible for athletes and non-athletes alike to return to their pre-injury activity level with a success rate of about 80 percent.

But that is about to change. The Miriam Hospital has acquired a new computer navigation system that will bring GPS-like precision to the ACL reconstruction procedure, in which success

hinges on millimeters of difference. The only system of its kind in New England, the new technology provides increased precision of information and feedback to the surgeon, which in turn improves outcomes. Robert Shalvoy, MD, clinical assistant professor of orthopaedics, enthusiastically explains that not only does the

The new technology **provides increased precision** of information and feedback to the surgeon, which in turn **improves outcomes**.

computer provide super-human precision during surgery, it provides valuable pre- and post-surgery data as well.

"With the computer, as you manipulate the knee, it tells you exactly how many millimeters it moved in what direction, how many degrees it rotated," he says. "Before [computer navigation], it was all very subjective. This system gives you data that you can establish, reproduce, and document." Shalvoy notes that computer-navigated ACL reconstruction has been slow to be accepted in the U.S.

"It's harder. It costs more money. But it will improve the quality of life for those 20 percent of patients whose ACL reconstructions would fail without this technology. At 250,000 ACL injuries per year, that's a lot of people who could benefit from this," says Shalvoy. —**S.H.L.**



Natural Born Quitters

Want to stop smoking? Consult your genes.

Why is it easier for some people to quit smoking than for others? The answer, in part, may be in their genes. Researchers at the National Institutes of Health, Brown University, University of Pennsylvania, and Duke University have identified genetic markers that could someday help physicians tailor more effective treatments for patients who are trying to quit smoking.

Using a technique called genome-wide association scanning, the researchers compared DNA extracted from smokers who participated in three separate, placebo-controlled studies of bupropion (Zyban) and two types of nicotine replacement therapy (NRT) for smoking abstinence. They looked at more than 500,000 genetic polymorphisms (clusters of genes that have the most variation in the human genome) among the smokers and found that success with any type of pharmacologic therapy was associated with clusters of genes that involved the reuptake of dopamine in regions of the brain that control addiction. Individ-

uals with a gene for high numbers of dopamine receptors in these regions responded more successfully to bupropion, while those with a gene for lower numbers of dopamine receptors responded better to NRT. The findings are published in the June issue of *Archives of General Psychiatry*.

“This is the first study to use a pharmacogenetic approach to compare bupropion to NRT by identifying genes that may predict whether one or the other will be more successful in an individual,” says Sean David, assistant professor of family medicine and an author on the study.

According to David, such pharmacogenetic research could lead to a new dimension in clinical practice—using genotype as a deciding factor in which treatment to prescribe to a patient when several are available.

—S.H.L.



OVER HEARD

“[Relocating plants and animals to protect them from climate change] can probably be done in a way that is responsible and will not lead to environmental catastrophes. [But] there will be unintended consequences on occasion.”

—Assistant Professor of Biology **DOV SAX**, a conservation biologist whose research focuses on species invasions, particularly of non-native plants and animals. In a paper published in August in the Proceedings of the National Academy of Sciences, Sax contested the theory that introducing non-native species into a new environment spurs extinctions.

STAT SHEET

Brown

Rookie Line-Up

They're a young team, but they're all stars.

This year, entering medical students hail from twenty-four states—including Arkansas and Wisconsin, Massachusetts and Hawaii, not to mention the ten students who are Rhode Island residents. Their undergraduate institutions range alphabetically from Brown to Yale and geographically from Montreal (McGill University) to Tampa (University of South Florida) to Honolulu (University of Hawaii).

Below are more clues as to what the Class of 2012 is made of.

TOTAL STUDENTS		96
Female	55	(57%)
Male	41	(43%)
Program in Liberal		
Medical Education	63	
Postbaccalaureate	5	
Early Identification Program	4	
MD/PhD	2	
Standard Admissions	22	
AGE RANGE		20-34
ADVANCED DEGREES		3
UNDERGRADUATE INSTITUTIONS		27
Most students are from Brown, followed by Duke, NYU, and Yale.		
UNDERGRADUATE MAJORS		27
Humanities	52%	
Physical and Life Sciences	43%	
Computer Science, Computational Biology, Engineering	5%	

KONRAD LANGE/ISTOCK

RESIDENT EXPERT BY MICAELA HAYES, MD

A Dream Deferred

How do you mourn the loss of someone who never was?

This is a column that I wish I could not write. In the past I have written of emotional roller coasters, work-family balance, and the challenge of death. Now I must write of all three together, for over the past six months I have dealt with a challenge that is all too common for women everywhere: miscarriage.

It was a planned and welcomed pregnancy. We shared the news with our family and I began preparing for maternity leave. (Complicated when you are a resident!) We discussed the pros and cons of moving to a bigger apartment versus converting our study into a nursery. I made mental lists of things to get and things we already had from our first child. As the weeks progressed and the nausea never materialized, I sighed with relief—no morning sickness with this one. We came very close to telling our toddler she was going to be a big sister—she was going to be so excited! And then I started bleeding.

Some bleeding is okay in pregnancy; many women go on to carry full-term healthy babies after first-trimester bleeding. It was not okay for me. Ultrasound confirmed my worst fears. What should have been a twelve-week fetus with dancing arms and legs was the right size for six weeks with not even a heartbeat. A miscarriage was inevitable. Hoping to avoid the operating room, I declined the D&C and planned to tough it out at home. A week later—after a trip to the emergency room when the bleeding became frighteningly heavy—the physical portion was done. The emotional portion is more complicated.

As a physician, I am no stranger to death and loss. Many times I have helped families confront grave illness and withdraw life support. While many of these patients had lived long, full lives, others were shockingly young. And yet it is one thing to witness the death of a person who has lived; miscarriage is a person who will never be. It is your hopes and dreams and expectations that are alive one moment and gone the next. What should have been a baby becomes a tiny soul who never found its way into a body. How do you mourn a hope?

Thanks to early home pregnancy tests, the “late period” of my mother’s generation is now recognized as an early miscarriage. Indeed, about 20 percent of known pregnancies will end in miscarriage. Yet until I shared my story, I knew of very few women who’d miscarried. Then they came out of the woodwork: my Aunt Sally, my husband’s grandmother, my next-door neighbor, a new friend, a trusted mentor, a fellow physician. Yet awareness of its prevalence has not led to social change. Unlike other cultures, we have no ritual to facilitate mourning and closure. “Untelling” your pregnancy is still a process



“Untelling” your pregnancy is a process rife with embarrassment and awkward sympathy.

rife with embarrassment and awkward sympathy. In many ways, miscarriage is not even a polite topic of discussion. Each woman struggles to find her own way to understand this loss and somehow move on.

Thankfully I am young and healthy and had no trouble getting pregnant again. As I approach the twelve-week mark, I find myself full of trepidation, scared to be excited, scared to become attached, scared to hope and dream once again. To find a new equilibrium after loss is challenging enough. Daring to hope again is an act of courage, and I am not always courageous.

Initially I tried to write this column as a physician, to explore grief and loss and the potential for empathic growth. I thought I could show how my own difficult experience helped me become a better physician. But I was wrong. To make sense of this loss I had to set aside my stethoscope and remember that first I am a woman, a mother, a wife, a human. This lesson I never learned in medical school: I must first be a patient, and be patient with myself.

Micaela Hayes is a resident in Brown’s general internal medicine residency program.

ZOOM

BY LISA ROWLEY

UP CLOSE AND PERSONAL WITH NAIDA COLE

ENCORE

A thirty-something pianist adds medicine and motherhood to her repertoire.

Naida Cole MD¹¹ lays claim to a unique distinction among her medical school classmates. Last spring, the Canadian gave birth to a baby boy named Davin. She and her husband, a marine biologist, had hoped the pregnancy might last until closer to the end of the semester, but come March 13, in the midst of Cole's study of the brain, Davin refused to wait any longer.

In the time since, Cole has been able to make up enough academic work to continue on with her class—something “that was very important to me,” she says. “People were shocked that Brown was able to accommodate my needs, but it speaks to me of what the school is all about.” Such flexibility and openness to individual circumstances were some of the reasons she chose Alpert Medical School coming out of Columbia's postbac pre-med program. “I loved

“I am dedicated to this path and take the responsibility of becoming a physician very seriously. It's such a gift to have a second chance.”

the small class sizes, of course, but I also felt comfortable here. The communication seemed good, as if people were really listening to each other.”

A good ear is essential to another of her areas of distinction. Until a few years ago, Cole enjoyed an impressive career as a classical pianist and performing artist. She has played with symphony orchestras in Toronto, Montreal, London, Munich, Copenhagen, Warsaw, and Tokyo and released to wide acclaim two solo CDs on Deutsche Grammophon/Decca, featuring music of Liszt, Ravel, and Bartok, and Faure, Chabrier, and Satie. She has performed regularly with legendary violinist Gidon Kremer and his ensemble Kremerata Baltica, and appeared on its Grammy Award-winning CD, *After Mozart*. She holds a degree in music from the Peabody Conservatory of Music at Johns Hopkins University and a master's from the University of Montreal.

But years earlier, when she first decided to pursue a career in music, “my parents didn't think it was the wisest choice,” she says.

Rather, with an anesthesiologist father and an RN for a mother, medicine seemed a likelier choice. Cole convinced her parents that the chance to study with the great Leon Fleisher at the Peabody Conservatory was a once-in-a-lifetime opportunity not to be squandered. She could always try medicine later.

‘MUSIC WAS AFTER SCHOOL’

Cole's history with music dates back longer than she can remember. According to family lore, she began taking violin lessons at three, but her earliest memory is of her first piano teacher, at age four-and-a-half or five. “I remember the light in the room and her perfume and the gentle way she had about her,” she says of their initial meeting. “That was a lot of what made me fall in love with the piano.” The teacher has remained a friend, and served as maid of honor in Cole's wedding.

“Prodigy” is not a word Cole would use to describe herself. Talent-wise, she acknowledges, “I was ahead of my peers, but I wasn't the kid who at ten was touring on the world stage. My parents didn't push like that. They made sure my education came first.”

Cole attended “regular” schools in Toronto and though her parents stressed the importance of practice and discipline, “they never deprived me of playing with my friends or participating in sports and other

activities.” At one point, the family moved for a year to Saudi Arabia; there were no piano teachers, so Cole had no choice but to stop her lessons. “It was okay,” she recalls. “I missed the piano but took up the flute instead.”

Later, back in Canada, Cole resumed piano lessons—after school—at the Royal Conservatory of Music, where despite her well-grounded lifestyle, she was the second youngest ever, at thirteen, to complete the diploma program.

CURTAIN CALL

“Change is always painful,” Cole says of her decision to leave music to pursue a future in medicine. But after about ten years of performing and recording, “something just wasn't right.”

One of the things leaving her dissatisfied was that “musical life is so inward. It's narrowly focused, and it has to be, but you lose any sense of balance.” Plus, life on the road was difficult: the constant travel, the solitude. “You go on stage, and it's wonderful, but you

FIELDNOTES | BY NEDIM DURAKOVIC '07 MD'11

Re-birth of a Nation

Through sport, survivors of the Bosnian genocide are whole again.

“Sport has created an opportunity for an identity change,” Samir tells me. “A sense of emptiness and hopelessness has been transformed into possibility and energy that identify me as an athlete.”

Samir is a proud captain of a Bosnian sitting volleyball team created in 1996 following the war in Bosnia. He recounts countless friends who had amputations during the war and would hide at home for weeks on end, afraid to be seen in public. Then, he tells me how the ability to participate in this sport has been a vital link in the road to recovery for many persons with disabilities like him. Besides helping to improve physical strength, he emphasizes the importance that sitting volleyball plays in boosting self-esteem and providing camaraderie among war survivors.

Thirteen years after the war, members of a Bosnian sitting volleyball team are bound together by their shared wounds and success in this sport. Team photos and trophies line the entrance to the clubhouse, reminding the men of their achievements. As we sip Turkish coffee, they share jokes of when they lacked a player with an amputation for a match and asked the referee for a saw so they could qualify. When I tell them about my interest in Post Traumatic Stress Disorder (PTSD), they joke again that the entire country has that illness and that my sample size is way too big. But when I describe the survey that I developed for them to fill out, their smiles hide the grim reality of their suffering. I feel the burden of unspoken words at that table, the burden of tens of thousands of victims injured over the

pate on an equal basis by playing seated. The sport relies on a varied combination of arms and legs for movement on the floor, thus preventing vertical trauma associated with jumping on a prosthetic lower limb in conventional volleyball. It is played with a lowered net that reaches a player's extended arm length. In Bosnia, sitting volleyball has become so sophisticated that there are currently three leagues and even two professional teams. On the international stage the success of this program was recognized at the 2004 Athens Paralympic Games, when Bosnia defeated four-time champion Iran for the gold medal.

My own family experience of being forced out of our home, my father's internment at a concentration camp, and survival in refugee camps until we obtained refugee status in the United States, along with my exposure to the sport of rowing as a Brown undergraduate, had galvanized my interest in exploring the effect of sports on the mental health of individuals inflicted with war injuries. A summer-long experience in Bosnia prior to medical school had inspired me to bring to international attention the stories of the thousands of people with war injuries in my home country. With the hope of making academic circles aware of the impact of adaptive sports on mental well being of war victims in Bosnia, I constructed my project through the Global Health scholarly concentration with the help of my medical school advisors. My goals in working with war-injured amputees were twofold: to examine the effectiveness of the sitting volleyball program in improving the mental health of persons with disabilities, and to expand the sitting volleyball program to include adaptive rowing.

With the help of the Landmine Survivors Network in Bosnia I was able to watch practices, interview team captains, and conduct a survey with teams in Sarajevo on the impact

I feel the **burden of unspoken words**, the burden of tens of **thousands of victims injured**.

three-year period when the small Balkan nation became the scene of one of the modern world's worst bloodbaths. The eight men gathered around the table belong to the group of hundreds of thousands of Bosnian civilians who were targets of ethnic cleansing campaigns.

ADAPT AND OVERCOME

Following the end of violent conflict in the region in 1995, which left thousands of people injured, groups of individuals with war-time injuries organized sitting volleyball teams throughout the country. Sitting volleyball is an adapted sport that, unlike conventional volleyball, allows persons with various limb amputations to partici-

of sitting volleyball on PTSD symptoms after the war. From the survey I found that the PTSD symptoms were very dynamic. While some symptoms like ability to sleep and concentration improved, others, like avoidance, got worse. Avoidance in particular was a barrier in finding players in the period following the war, as many persons with disabilities stayed away from the public eye. The team captain described the hesitation and feeling of self-consciousness about having a disability with which new players approached the sport. However, this disposition could be transformed within hours of starting to play. This can be best appreciated from visiting a practice session as the gymnasium, filled with laughter, cheers, and



come back night after night to an empty hotel room. And you practice, alone, and after all that, maybe 10 percent of an audience truly understands what you've accomplished beyond a fleeting appreciation of some lovely music."

What Cole really wanted "was to help people. With medicine, you can see the results of your work and you make a difference in people's lives."

Music touches people, too, Cole acknowledges, but "I didn't feel I had the kind of talent that would be criminal not to share with the world." Maybe not, but she ended her career on top, playing a duo concert with Gidon Kremer at Carnegie Hall.

LIKE A KID IN A CANDY SHOP

One of the things Cole most enjoyed this year in medical school was learning about new advances in medicine. "A faculty member would


come in to class and say, 'The way you treat this disease will significantly change by the time you finish medical school.' It's so exciting to me that this field is changing so rapidly that you have to embrace life-long learning—it's not just an empty catchphrase.

"I don't mean to suggest that music is stagnant—it's not—but the fact is you are playing pieces that are hundreds of years old, written by people who have been dead for centuries. I know it's about finding new interpretations, about making the music your own—but that all gets back to the inward again. Medicine by contrast is a selfless profession. It's a great thing to be able to take care of people."

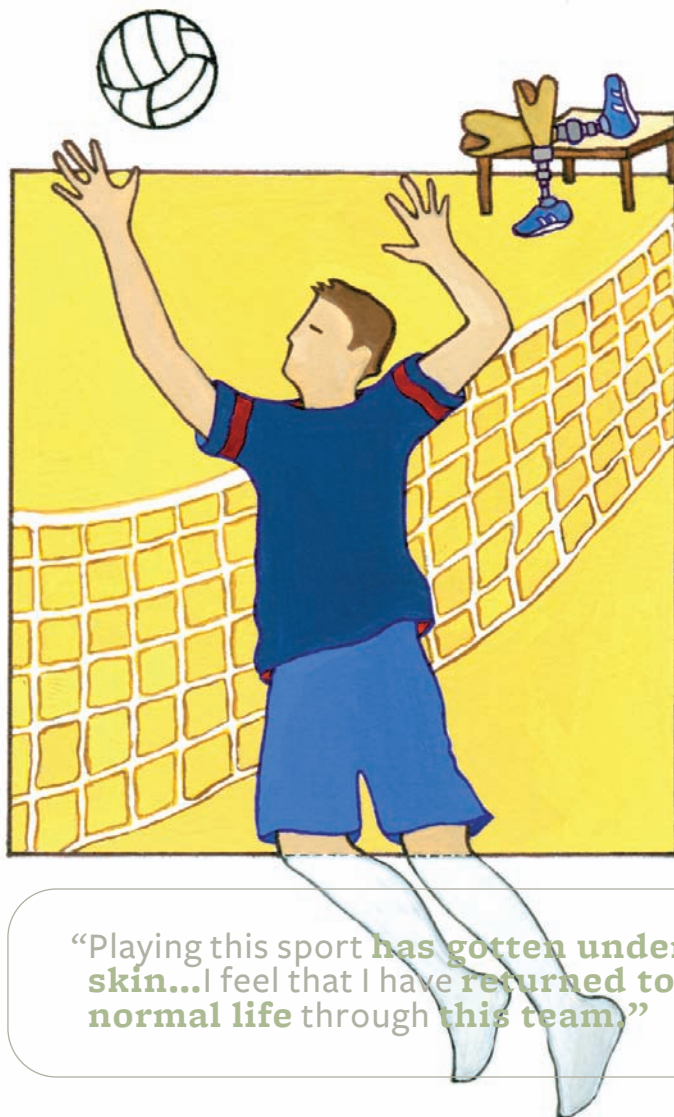
Cole thought she knew what field she wanted to pursue when she began medical school: something where she could use her hands, like ophthalmology, with its procedures and precision. But anesthesiology appeals to her as well, touching on all the body's systems, as does endocrinology, which she thought "was the coolest thing," dealing with all the hormones. Her placement for the Doctoring course was with a cardiologist, "and that was fascinating, too."

Whatever specialty Cole chooses, she knows the world of medicine is the right place for her—in part because there is room for music as well. Last December she played a concert of Mozart trios and other works with the Chamber Music Society in Fort

Worth, TX, and plans to play there again next Christmas. "Surprisingly, there aren't any great recordings of Mozart trios," she says, so Cole, the violinist, and cellist are looking into recording one of their own.

"It is a whirlwind," Cole says of a life that juggles medical school, a new baby, and part-time musical performance. The key, she says, is careful planning—bolstered by complete faith in her choice. "I have never faltered, never regretted my decision. I am dedicated to this path and take the responsibility of becoming a physician very seriously. It's such a gift to have this kind of second chance." 

Naida Cole:
Musician, med
student,
mom.



"Playing this sport **has gotten under my skin...** I feel that I have **returned to a sense of normal life through this team.**"

jokes, makes it hard to believe the challenges that this group of people faced during the war and in the post-war period. More than the physical exercise associated with the sport, it is this companionship that the players speak about most often.

Although I arrived wanting to learn about the relationship between PTSD, disability, and sport, speaking to team members I learned that PTSD is only one in a list of other difficulties that the team members face. With an excess of young, educated, and willing workers, persons with disabilities despite being qualified have a difficult time finding employment. This group also faces other health risks, including a high prevalence of hepatitis from tainted blood used in transfusions during amputations in the war period. At the logistical level even the sitting volleyball season requires an extended winter break period because most teams lack heated gymnasiums for winter practice. Only after hearing these and other challenges that team members face in post-war Bosnia can one appreciate their praise of how adaptive sports have offered one of the best community-level interventions for improving mental health

in the population. As one player puts it, "Playing this sport has gotten under my skin... the chance for camaraderie, traveling, meeting new people and forming friendships has been everything for my psychological health. I feel that I have returned to a sense of normal life through this team."

BOTH OARS IN

Following this summer's project, I plan to conduct a larger survey of the impact of sitting volleyball with the same research principles. In addition, I will continue to work on expanding the adaptive rowing program to complement sitting volleyball. Adaptive rowing has an advantage over other sports for persons with lower limb amputations in providing a workout for the cardiovascular system, back, shoulders, arms, legs, and abdomen similar to cross-country skiing or running, but unlike skiing and running rowing causes minimal

vertical impact to the joints. As a part of my project last summer, I traveled to the southern part of Bosnia and worked with three groups to form rowing clubs in Konjic, Jablanica, and Mostar. Right now, these clubs lack equipment so they are rowing clubs only in name. However, establishing

contact with the members and getting them started in planning the organization of the teams has been a vital first step in developing an adaptive rowing program in Bosnia. I hope that my efforts will eventually include a partnership with the International Rowing Federation to further develop adaptive rowing throughout Bosnia with equipment and coaching support. On a more global scale, I hope that adaptive sport intervention projects like these can be applied to similar post-conflict settings for persons with disabilities.

This field experience has meant a chance to give back to my community. I am privileged to work with the sitting volleyball team in Sarajevo, and I am thankful for the friendships that I have formed as well as many life lessons that I have learned through our meetings over this past summer. I look forward to many returns, with a hope that each visit brings more international support to the efforts of the teams in Bosnia as well as a deeper academic involvement in the field.

*Second-year medical student **Nedim Durakovic**, an undergraduate history concentrator, came to Brown via Carroll, IA.*

MOMENTUM CAMPAIGN FOR ACADEMIC ENRICHMENT

A GOLD OF OUR OWN

The Brown Medical Annual Fund racks up another record-breaking year.

Michael Phelps may have won eight gold medals, but the efforts of this year's BMAF supporters were little short of Olympian. The Fund closed the books on June 30 with \$770,000 given by alumni, parents, students, faculty, staff, and friends. Surpassing the fiscal year goal by \$10,000, the total represents an increase of nearly 7 percent over last year's giving and makes for the fourth record-setting year in a row.

Boldly | BROWN |

The achievement is all the more remarkable in a year that was by any measure a tough one economically. Despite declining housing markets, the collapse of subprime mortgages, and soaring prices for gasoline, home heating oil, and food, the Brown medical community stepped up its support in 2007-08, meeting two impressive challenges. The first, offered by long-time stalwarts Arte and Martha Joukowsky, earned a match of \$25,000 by successfully encouraging new

gifts of \$1,000 or more. The second involved Medical School parents, who as a group accounted for \$127,213 of the BMAF total—including \$30,000 in challenge funds offered anonymously—by reaching a participation level of 48 percent.

Complementing the success of the Annual Fund, overall giving to the Division of Biology and Medicine—including gifts of endowment or restricted funds pledged for a particular priority such as scholarship assistance or a specific research area—reached an impressive total of \$18.8 million, nearly \$5 million over the year's goal. Highlights from among the many generous contributions include the Saphier Family Lecture in Obstetrics and Gynecology, established by Carl J. Saphier '88 MD'92. The first lecture was given

Complementing the **success of the Annual Fund**, overall giving to the Division of Biology and Medicine **reached an impressive \$18.8 million**, nearly \$5 million over the goal.



Former student-turned-philanthropist Carl J. Saphier '88 MD'92 with Donald Coustan, MD, one-time mentor, now colleague, friend, and inaugural Saphier lecturer.

during Commencement-Reunion Weekend in May by Dr. Donald Coustan, Chace-Joukowsky Professor of Obstetrics and Gynecology and chair of the department from 1991 to 2008. He spoke about the evolution of perinatal care over the past forty years.

The medical community's giving prowess mirrors that of the wider University. The Brown Annual Fund, too, posted record-setting numbers for 2007-08, earning \$35.1 million from almost 33,500 donors. Six reunion classes raised more than \$1 million for BAF—another record—including two that raised more than \$2 million. The year's overall giving to the Campaign for Academic Enrichment approached an amazing \$240 million, bringing the Boldy Brown initiative at fiscal year-end to a total of \$1.24 billion, or 88.6 percent of the \$1.4 billion goal.

What's not to love about Olympic years? Bring on London. —**Lisa Rowley** 

ADAM MASTOON

EXAMROOM 1

MARK J. FAGAN, MD

What's up with New Docs?

A new study examines medical students, career choice, and the future of our country's physician workforce.

In response to the anticipated health care needs of an aging baby boom generation, the Association of American Medical Colleges has called for a 30 percent increase in the number of graduates of U.S. medical schools by the year 2012. For the first time since the 1970s, medical schools are

opening up in several states, and many schools, including Brown's, have increased their class sizes. This is a major turn of events for American medical education. As recently as fifteen years ago, forecasters predicted an excess supply of physicians that would require specialists to retrain as generalists due to inadequate employment opportunities. As medical schools embark on a terrifically expensive expansion, it makes sense to ask: Will the increase in the number of graduates really enable us to better meet the country's health care needs?

Opinions about this diverge wildly. Some suggest that an expanded physician workforce is necessary to fulfill an aging population's predictable need for treatment of age-related conditions. Others claim that an increase in physician workforce is the inevitable result of new medical treatments and devices, which create new patient demand. Still others, citing data from studies of geographic variation in health care within the U.S., argue that it is not at all clear that more physicians, particularly specialists, will translate into improved health outcomes. They point out that a high ratio of specialists to generalists may be one explanation for the fact that the U.S. achieves worse health care quality and lower efficiency than some other industrialized countries.

The specialty choices that medical students make will have a great impact on the extent to which the expansion of the U.S. physician workforce will or will not translate into improved health care outcomes. One trend is clear: student interest in internal medicine, especially general medicine, has declined substantially. The number of students matching into internal medicine residency positions declined from 3,884 in 1985 to 2,660 in 2008. The number choosing residency training in general


internal medicine declined even more steeply, from 575 in 1999 to 264 in 2008.

To better understand these career choices a group of investigators from Clerkship Directors in Internal Medicine surveyed 1,177 fourth-year students from the class of 2007 at eleven U.S. medical schools, including Alpert Medical School. Twenty-three percent of the respondents planned a career in internal medicine, and only 2 percent planned a career in general internal medicine. A factor analysis identified three clusters associated with a greater likelihood of choosing internal medicine: educational experiences in internal medicine, attitudes toward internal medicine patients, and lifestyle.

Older studies of medical students' career choices, performed at a time when student exposure to outpatient medicine was limited, suggested that greater clerkship exposure to outpatient settings might increase the appeal of general internal medicine. Our results do not support this. While 78 percent of our respondents agreed "I am satisfied with my core internal medicine clerkship," and 78 percent agreed that medical school provided them with enough experience to make an informed decision about internal medicine as a career, only 19 percent felt that their core internal medicine clerkship made a career in general internal medicine seem more attractive.

While students were satisfied with their medical school internal medicine experiences, they reported serious reservations about the quality of life and rewards of internal medicine compared to other specialties. Sixty-four percent cited the paperwork and charting as a factor that pushed them away. Our findings support an idea that has been around for decades but has not yet been realized: in order to attract stu-

Medical students reported **serious reservations** about the quality of life and **rewards of internal medicine**.

dents to the care of the elderly and chronically ill, the payment mechanism and the system of care must be redesigned to support that goal. 

Mark Fagan has been the Medical School's internal medicine clerkship director for the past ten years. He is a co-author of the study "Factors Associated with Medical Students' Career Choices Regarding Internal Medicine," which appeared in JAMA, September 10, 2008, Vol 300, No. 10.

WORDS SILENCES gestures physical Findings

MINDFULNESS

REFLECTIONS ON DOCTORING

The narrative medicine movement has come to Brown. Will it produce better physicians?

By Eileen O’Gara-Kurtis | Lettering by Ward Schumaker

Lecture. Library. Anatomy lab. Memorize cranial nerves. *Sleep.* Go to mentor physician’s office. *Have I eaten today?* Study for boards. *Take time to reflect.*

WHAT? YES. REFLECT. WRITE. ANALYZE.

First- and second-year medical students at Alpert Medical School aren’t just required to assimilate thousands of facts, gain a comprehensive understanding of the body’s biochemistry and organ systems, and prepare for the clinical training of the final two years. They’re also required to write about it.

A core element of Alpert’s three-year-old Doctoring course—which teaches specific clinical skills such as medical interviewing, physical examinations, and oral and written communication, as well as broader topics in medical ethics, cultural competency, and professionalism—is the writing of a series of brief, confidential essays, or “field notes”, in response to targeted questions, or “prompts”, designed to inspire reflection on and analysis of students’ classroom and clinical experiences.

It’s part of a fast-growing, loosely defined “narrative medicine” movement under way at medical schools nationwide. While tailored to the culture and curriculum of each individual institution, the work is largely rooted

in the research and practice of Rita Charon, professor of clinical medicine at the College of Physicians and Surgeons of Columbia University and director of its Program in Narrative Medicine, and the field’s founding thought-leader.

A practicing internist with a doctorate in English, Charon launched the Columbia program in the 1990s as a way to help medical students empathize with their patients by keeping “parallel charts” in which they record their own reactions, their attempts to understand the patient’s experiences, and the patient’s reaction to information about his or her illness. Within Charon’s framework, narrative medicine is a process parallel to clinical medicine, in which the doctor-patient interaction is turned into something tangible that can be understood through three defined activities—*attention, representation, and affiliation*.

At Brown, the field note exercise is designed to build those competencies—while giving first- and second-year students a safe zone for self-revelation and providing them with a mechanism for resolving the con-

siderable cognitive dissonance sometimes born of an introduction to the uncertainties of clinical practice amid the otherwise fairly ordered medical school environment.

“Medicine is based on practical wisdom—*phronesis*,” says Shmuel Reis, an Israeli primary care physician who practices in rural Galilee and spent last year as part of the Doctoring faculty while on sabbatical from the Ruth and Bruce Rappaport Faculty of Medicine at the Technion-Israel Institute of Technology. “It’s not a science, but a practice *informed by* science. The practice of medicine is largely about *noticing*, or listening, or seeing attentively, being present; *representing* through writing or telling what was noticed; and *affiliating* with patient, family, and other professionals.”

“Engaging in narrative medicine enhances clinical decisions and skills and helps doctors thrive,” Reis continues. “And in education, as in life, narratives convey integrative knowledge, wisdom, and life lessons in a succinct, multi-dimensional way—like no other teaching.”

“Alpert Medical School is really a pioneer,” says Charon, who has an ongoing consultative and collaborative relationship with the Doctoring faculty. “There are only a handful of other medical schools where there are people on the faculty, and at the dean and course director level, who really comprehend the urgency and salience and complexity of

Be MOVED

Awareness

“Writing is a core skill that benefits both life experience and medical practice.”

education,” Taylor acknowledges. “And everybody does it differently. There’s certainly a wider range within people’s ability to reflect than there is, say, in their ability to perform a heart exam.”

The course is young and still evolving in response to student feedback, Taylor says. This year, the field notes assignments are both sharpened in focus and pared down in number. There is also an increasing emphasis on coordinating the topics covered in Doctoring with the specific disease processes and organ systems being covered elsewhere in the curriculum—for instance, students may learn about the pathophysiology of strokes in the morning and learn how to perform a neurological exam in the afternoon.

The final field note assignment of the second year, says Nitin Aggarwal MD’11, who worked on the team honing the course curriculum this summer, “provides closure for the pre-clinical years of medical school.”

“It asks you to consider what you’re worried about as you go into the clinical years, and what you’re interested in,” says Aggarwal. “Continuing with the theme of reflective learning, it’s designed to help you think about the kind of residency you’ll apply to. It will also give you a head start on your personal essay for residency applications.”

DOCUMENTING RITES OF PASSAGE

Writing her own field notes—for publication or for her own use—enriches and informs Taylor’s life as a practicing physician, she says.

“I’ve been writing my own field notes since long before I was involved in the Doctoring course. Reflective writing has

helped me to process some of my more intense professional experiences, such as participating in the birth or the death of a patient,” she says. “And I’ve seen it do the same for students. Last year, a Doctoring student was struggling with the challenges of taking care of underserved patients at her mentor site. Both to help her and to serve as a writing role model, I shared with her an essay of my own on the topic that had been recently published in the medical literature.”

Such a moment also came for Aggarwal last year. The Doctoring course assigns each first-year student to an elderly resident of an assisted living facility, requiring the student to follow the patient longitudinally over the course of the year. Aggarwal’s patient died between the fall and spring semesters.

“It was the first time I’d dealt with death in a clinical setting, and it was really helpful to be able to document that in a field note and discuss it confidentially with my faculty members,” says Aggarwal. “Later in the year, when we talked about delivering bad news in the clinical environment, it was helpful again to refer back to it. And I’ll be able to look back at that note in the future, whenever I need to refresh that memory.”

“The practice of medicine is a pretty complex and serious and emotional thing, and it’s

really important for people to be able to reflect on it,” says Associate Dean of Medical Education Philip Gruppuso. “As you go through medical school, you encounter things that are core to your profession but not necessarily part of your real-life experience to that point. Experiencing responsibility for somebody who has an illness, experiencing loss...we don’t want students to become dependent only on themselves or those close to them to reflect on and discuss these huge issues.”

My mind soon thought about what Jack told me last time—“I hurt from the inside.” I think I knew, and Dr. Reis recognized this too, that Jack’s last few days were here. He suffered Congestive Heart Failure and was taken to the hospital. He never really bounced back.

NARRATIVE AS POWER TOOL

Hedy Wald rides her bike pretty much everywhere she goes, and even in conversation—brown curls bobbing, slender hands slicing the air to punctuate her words—she is a blur of kinetic energy.

A clinical psychologist, Wald is the wife of a neurologist and the mother of four children, including a daughter in medical school and a son in dental school. She is the daughter of a man who survived the horrors of the Holocaust but recently succumbed to cancer and Alzheimer’s disease (see *Brown Medicine*, Spring 2008). Ironically, she spends her days counseling and assessing patients who are challenged by neurological illness or injury.

effectiveness

“...seeing patients...hearing their stories, merging their experience with our own, treating them... is essentially a narrative act.”

SILENCES

these ideas. There are a lot of schools that teach interviewing [as the Doctoring course does]. But very few take it to this level.”

MEDICINE AS NARRATIVE

“Seeing patients...hearing them tell their stories, telling our version, and merging the two...is a narrative act and constitutes the essence of the clinical encounter,” says Chair of Family Medicine Jeffrey Borkan, a physician based at Memorial Hospital of Rhode Island in Pawtucket and chair of the Alpert Medical School Curriculum Committee. “Our goal is to teach students how to perceive and construct those narratives, and to build their reflective capacity.”

Borkan, who also holds a doctorate in medical anthropology, has a deep belief in the power of story as an element of effective and rewarding medical practice, and has published widely as a writer and as a teacher.

helps you to be a more effective doctor. It creates better, more efficient medicine.”

“Reflection on the personal journey of becoming and being a physician is a very important process and a skill just like the others that are taught in the course, and the first and second years of medical school are a critical formative experience,” agrees Associate Professor of Family Medicine Julie Taylor, who currently serves as director of curriculum for the course. “In two short years, students transition from ‘civilian’ to ‘half-doctor’...taking in so much information, but also thinking deeply about the development of their professional working identity.”

The Doctoring course spans the first two years of medical school. Weekly sessions typically contain several components: a lecture; a hands-on, skill-building exercise, such as medical interviewing with a standardized patient; and small group discus-

small, eight-student groups during classroom time, the small-group leaders serve as responders to field notes written by the students in their groups. The notes and the feedback are emailed and kept confidential between students and faculty.

I put off writing this note because I was scared...that I would not be able to write about how losing my elderly patient felt. Jack was ninety-six and his health had deteriorated significantly the last time I interviewed him. I expected it, yet still wasn't ready to hear it or digest it.

STEPPING OFF THE CONVEYER BELT

How does all this introspection play among those caught in the relentless forward motion of med school?

“Forced self-reflection doesn’t always take, and a lot of students are ambivalent,” says Luke Godwin MD’11. “There are so many demands on your time. But when it works, it’s amazing. In medical school, it often feels like you have to keep moving to stay afloat. You’re always racing from the library to the lab to the classroom. Writing lets you step off the conveyor belt and assess your thoughts and emotions and evaluate your experiences.”

“There’s definitely some pushback,” says Jason Lambrese MD’10. “Students feel that, in the end, what’s most important is to get good grades and pass your boards [at the end of the second year]. There are definitely times that the field notes are seen as helpful, but students sometimes think that they should be studying for an exam instead.”

Lambrese, who has been involved in the development of the Doctoring curriculum, sees value in the exercise. “Writing field notes gave us a really valuable opportunity to explore emotions and policy issues like medical ethics and health disparities, as well as learn to construct a patient’s narrative.”

“To an extent, this work goes against the cultural character of traditional medical

WORDS

“For most of us, the medical record is the most complete story of our lives.”

One of the architects of Doctoring, along with former Associate Dean for Minority Medical Affairs and Professor of Family Medicine Alicia Monroe, he developed the precursors of the field notes exercise as the course leader in an earlier, elective course (co-listed in Community Health and English) called The Doctor as the Subject, the Doctor as the Author.

“We teach students a lot of facts, and provide them with clinical experiences, but we also have a responsibility to teach them mindfulness,” he says. “Having these skills

sions, each led by a two-person, interdisciplinary team composed of a physician and a social or behavioral science professional such as a social worker, a nurse, a clinical psychologist, or a minister.

Between sessions, students spend time in the community-based practices of mentor physicians, where they observe the practice of medicine and begin to use their own nascent skills in a supervised setting. More than 200 mentor physicians and about fifty small-group faculty are involved in the course.

In addition to leading discussions among

ReCOGNIZE

interpret

She is also an ardent practitioner and teacher of narrative medicine.

"I'm a believer," she says. "I've personally observed the fostering of students' reflective capacity through narrative, and their exploration of patients' emotional responses to the illness experience...as well as their own, which can contribute to building emotional muscle and enhancing professionalism. I've also seen a deepening of insight into the physician-patient relationship in students' field notes."

Currently in her fourth year as a member of one of the interdisciplinary faculty dyads that power Doctoring—a unique feature of the course, according to Taylor—Wald has collaborated with colleagues, including Reis and Providence family physician Stephen Davis, as well as Borkan and Monroe, to publish on the experience. Wald and Reis recently presented some of their findings at an international narrative medicine conference at Columbia. And Wald has distilled the lessons of her work in two new "manuals" designed to help faculty and students gain maximum benefit from the field note experience.

"Narrative is a power tool," she writes in the faculty manual. "It has the power to reveal, the power to conceal, the power to expose power differentials. It can erect walls to conceal the true story, the untold story; conversely, it can slice through layers of life to get to the heart of the matter."

The work has been enriching on several levels, says Wald. "As a teacher, immersion in narrative medicine has been a joy. And, on a personal note, my interest has extended beyond the margins—inspiring me to pursue my own creative and academic writing endeavors."

As much as I miss Jack, and will remember him for being a friend and helping me in my medical education, I think that it was time for him to go. He wouldn't want to be remembered for anything but the positives of his life. I need to move on and continue

the medical education that I am seeking and realize that such occurrences will happen during my medical career. It has strengthened my need of building a strong rapport with patients—I want to remember them for their positives.

LIFE STORIES

Every patient has a story. And into the story fits every diagnosis, treatment, and outcome. The full context of a person's life—history, environment, social support systems, personality, financial circumstances, and other factors—determines the likelihood that he or she can or will recover well, comply with a treatment plan, or develop a range of conditions ranging from asthma to obesity to substance abuse.

The story of every life is told and translated over and over again—by the patient and by all the physicians the patient sees over the course of his or her lifetime. Over the years, the plot twists and turns. Characters come and go. And the protagonist encounters a variety of transformative changes and challenges, from injury to grief to chronic illness to aging.

"For most of us," says Jeffrey Borkan, "the medical record is the most complete story of our lives."

And so doctor becomes biographer, storyteller, witness—responsible for accurately hearing, interpreting, and recording his or her patients' stories. But, by and large, we don't train doctors to be storytellers. We train them to be doctors.

"When you see a physician, you tell a story of the events that brought you there, and the physician reconstructs your story into a diagnosis—ending up with a story that makes sense in the biomedical model and will guide your treatment," says Borkan. "But a diagnosis doesn't exist in a vacuum. It exists in the context of a life, and in the context of a life story."

"Sometimes we can help our patients to re-write their stories," he continues. "For instance, we might be able to help people with chronic illness to move from a chaos story [of fear and powerlessness] to a transcendent story [of hope], allowing them to see themselves as people who have a manageable disease, not as people who are in the process of dying."

"There is a yearning, a hunger among clinicians and patients and families...to listen and be heard," says Charon. "Narrative creates a bridge, a piece of common ground. It helps patients understand their doctors better, and it helps doctors understand what patients and their loved ones are going through."

For Jason Lambrese, who recently completed a clinical rotation on the child and adolescent psychiatry service at Butler Hospital in Providence, the narrative medicine experience of his first two years has taken on new relevance.

"So much of the work involves getting patients' narratives and, in the case of this rotation, getting their parents' narratives, and threading them together. How do the

"The first and second years of medical school are a critical formative time and an incredible transition. It's the time when students are transitioning...from 'civilian' to 'half-doctor.'"

temporal ORDER

stories line up? Where are the missing pieces? What's the complete story?" says Lambrese. "These are huge issues. Ask anybody about their physician, and the most important factors are *whether he listened to me* and *whether he talked to me*."

"We're all good people, doing this for the right reasons, but taking a good medical history and striking up a conversation are two very different things, and it's important to develop the ability to communicate well with patients," he continues. "Unfortunately, a lot of medical school has become *go to class, take a multiple choice test, start all over again*. There's not a lot of time to explore and express feelings or experiences, or to learn how to construct a narrative—either your own or your patient's. The field notes exercise gave us a way to do that."

Sharpening reflective and narrative skills by writing cogent field notes has paid off on a more pragmatic level as well, says Lambrese. "It's definitely easier writing patient histories, with that skill of sitting back and thinking and writing it down. It would be harder if I hadn't put a mark on paper, other than a multiple-choice dot, for two years. And I had a humanities background, as a Hispanic Studies major. A lot of students who majored in the hard sciences, for instance, haven't written much in a long time."

A HUMAN TOUCH IN A TECHNOCRATIC WORLD

"**What are the times** of the day when my mind is emptied and open to reflection?" asks Dean Gruppuso. "Maybe when I'm walking across the Green to my car at the end of the day. But then I look around, and everybody's on a cell phone."

As an associate dean, Gruppuso says, he receives as many as a hundred emails daily. And he's not alone. For many of us, the nature of contemporary life is hectic, fragmented, and driven. The pace of hospital life is even faster. And the current generation of medical

students came of age amid the short bursts of prose that characterize email and texting.

"Injecting a writing requirement into the curriculum is a way to insert reflection and narrative into the lives of medical students...lives that probably wouldn't have much room for it otherwise," says Gruppuso. "Writing is a core skill that benefits both life experience and medical practice."

Gruppuso supports Borkan's vision of physician as witness, using narrative to present a coherent story of a patient's life in full. He also sees reflective writing as a way to

moment a patient is admitted. It helps young doctors understand the complex ways that illness affects patients and families, and to act with that knowledge."

If you finish your medical education with the sense that you've learned all this stuff and will just use it to figure out what the lab tests mean, we will have failed."

For Rita Charon, it comes down to this: a collection of dog-eared yellow cards, laced with faded blue ink. Her late father's long-ago handwriting, preserving the record of his life as a physician—and the lives of his patients.


"In medical school, it often feels like you have to keep moving to stay afloat. You're always racing from the library to the lab to the classroom. Writing lets you step off the conveyer belt..."

make sense of a health care system in which both physicians and patients exist within a maelstrom of tests, technologies, and bureaucracies.

"I grew up as a physician thinking that the standard admission note should be concise but also engaging, so that people [later responsible for the patient's care] would actually read it," he says. "It needed to be insightful, and also have an aesthetic quality. If that is lost, it will be lost at the detriment of quality of care."

"Communication skills for physicians and other health care professionals are at least as important as they've ever been, maybe more so," Gruppuso continues. "This work is potentially an antidote for the reality that discharge planning is started from the

"My father was a family doctor who treated *whole families*—from the eighty-nine-year-old grandfather to the new baby. His chart notes are portraits of those families across generations."

"We can do it better now, only because we know more," says Charon. "But I've spent my life trying to become the kind of doctor my father was." 

Eileen O'Gara-Kurtis is a frequent contributor to Brown Medicine. She is the founder and president of Silver Branch Communications, a strategic communication consultancy dedicated to partnering with individuals and organizations effecting positive change in health care, technology, education, the arts, and other arenas.

THE ROAD ALSO TAKEN

BY SHARON TREGASKIS

PHOTOGRAPH BY NICHOLAS MCINTOSH

A growing number of MDs are leaving their stethoscopes behind when they head to work, exploring their career prospects in the world beyond the clinic.

Some conversations stick with you. Four years later, Joel Selanikio can still recite the dialogue of the heart-to-heart that launched the latest phase of his career. The pediatrician had been doing a lot of soul-

**Kimá Taylor and
Joel Selanikio:
when opportunity
knocked, they
answered.**



searching—OK, maybe a bit of complaining, too—about his job at the Centers for Disease Control and Prevention (CDC) and about his ideas for ways to use new technologies like cell phones for public health. One night, while having dinner with a friend and going over his career choices for perhaps the hundredth time, the friend stopped him.

“Joel, you’re a doctor, aren’t you?” Yes, Selanikio said, you know that.

“So you’re a white, male, American doctor?” Again, yes.

“Well,” said his friend, “if I go to the circus and I’m watching the trapeze artists and they’re practicing and there’s no net, I can understand caution. But if they’re practicing over a big, comfy safety net, I expect to see amazing stuff. I think you are capable of amazing stuff, but I don’t see it happening.”

RISK WITH A SAFETY NET

She had a point. The next day, Selanikio tendered his resignation at the CDC and began laying the foundation for DataDyne.org, a non-profit software development company that specializes in open-source programming for mobile phones and handheld computers to facilitate epidemiological survey design and delivery (see *Brown Medicine*, Spring 2005). “[That conversation] made me see the absurdity of my position,” says Selanikio. “I had such a strong safety

net. My worst case scenario was to work clinically and have a nice life.”

Even as U.S. policymakers grapple with the prospect of growing physician shortages as the Baby Boomers age and demand for primary care docs accelerates, MDs are finding that their training provides both a safety net for personal career exploration and a launching pad for a rich array of professional opportunities. “You have all these emerging roles—chief medical officers at hospitals, medical directors of biotech start-up firms, companies that are being developed to handle the devices—the opportunities for physicians are growing enormously,” says John Ferry ’73 MD’76, a senior consultant with the executive search firm Korn/Ferry International.

“Years ago, it was almost considered inappropriate to not practice medicine,” says Ferry, who trained as a pediatrician and has served as a health care executive and academic administrator in Manhattan, Cleveland, and throughout New England, and now

specializes in recruitment and leadership development of senior-level executives in health care, life sciences, and academic medicine. “If you didn’t practice, your mother was asking ‘Why did I send you to medical school?’ Even your own friends would wonder why you went into medicine.”

Joel Selanikio figures he couldn’t do his current job if he *hadn’t* gone into medicine. Not only does the one-time Wall Street programmer have the capacity to translate between the software developers and physicians who collaborate to design DataDyne’s products, he has enhanced credibility to reassure the grant makers who fund his work at the non-profit and substantial authority in the board room. “You would not believe the schemes technologists come up with that will supposedly work well in a clinic,” says Selanikio, who still puts in a half-day with patients every week. “I can say with authority, ‘You’re never going to get doctors to do that.’”

Case in point: telemedicine, a buzz-word just vague enough to garner enormous traction among companies hoping to commercialize videoconferencing services so remote clinicians can show colleagues a worrisome or confusing case. “I’m a technologist but I’m also a clinician,” says Selanikio, who points out that even docs in high-tech practices in rich countries rarely use the videoconferencing services already available to them. “Sometimes what’s needed is technology, but sometimes that ‘technology’ is a set of books with drug dosages, atlases for identifying what they see, and so forth. I can make those assertions because I know how clinics work.”

“What if these are my only really great ideas and I don’t pursue them with passion? I didn’t want to go through life wondering if I missed an opportunity.”

CHANGE THE SYSTEM

Kimá Joy Taylor no longer sees patients, but she, too, has a hard time imagining how she'd pull off her current work as a Baltimore-based drug addiction program director for the Open Society Institute, a grant-making arm of the Soros Foundation, without having attended med school and practiced in a Washington, DC, clinic for the uninsured. "People often ask 'Why did you waste your time going to med school?'" admits Taylor, who also earned a master's in public health from Harvard. "I actually enjoyed med school and residency—there was a camaraderie, and being able to learn all that information was great." Perhaps more important, says Taylor, she gained a capacity for effective analysis. "You have a patient come in with a problem and you often do not know what is wrong. Medical school teaches you to diagnose it," she says. "And seeing uninsured patients day in and out teaches you to be a strong advocate."

These days, she deploys those analytical

WHO: **CHARLES MOCK '77 MD'80**

WHAT: Medical Officer for the Department of Violence and Injury Prevention and Disability, World Health Organization

WHERE: Geneva, Switzerland

WHY: "Globally, 5 million die of injuries from road traffic injuries, violence. It's a giant public health program. Millions more are disabled. It's a giant problem and it hasn't had much attention programmatically. Anyplace where trauma patients are being treated there's room for improvement. You can considerably lower mortality if you implement trauma care systems, where you engage in better organization and planning—statewide plans for emergency medical services, transfer protocol. Lots of technical details go into a trauma care system. Even with all the equipment and resources, how they're utilized makes a difference, and in low-income settings, even if you just fix systems you can considerably lower mortality."

WHO: **ESTHER NASH '78 MD'81**

WHAT: Senior Medical Director, Population Health and Wellness and Co-Director, Office of Consumerism, Independence Blue Cross

WHERE: Philadelphia, PA

WHY: "I couldn't do what I do today without being a licensed physician with ten years in practice. I didn't leave medicine, I lead medicine. If you're a full-time clinician, you want the people making programmatic changes and strategy decisions at health care plans to be physicians, and increasingly that's the case....That's win-win for the medical system."

"I was good at seeing patients day by day, but it wasn't enough...I encountered the same sort of issues over and over again."

and advocacy skills and a rich command of biological and pharmacological systems as she works to try to increase access to drug addiction treatment for uninsured and underinsured residents of Baltimore City—analyzing everything from methadone alternatives for heroin addicts to improving the quality of treatment services available for those currently receiving treatment in the community and within the criminal justice system. "They aren't just grants for a particular program but showing how it can make

WHO: **JOEL SELANIKIO MD'92**

WHAT: Co-Founder and Director, DataDyne.org

WHERE: Washington, DC

WHY: "I felt certain in my own heart that these are good ideas, and confident enough in them that I decided to quit my job and make that happen. How many good ideas do we really get in a lifetime? What if these are my only really great ideas and I don't pursue them with passion? I didn't want to go through life wondering if I missed an opportunity."

physicians have difficulty accepting someone else as captain of the team, especially when working on a team has not been in their suite of experience.”

- Get creative.** Recognize that the changing job market has yielded a wealth of new opportunities for individuals with robust medical and science skill sets. This spring, Ferry met with a young doc reconsidering his options after disappointing match results. “It’s not unusual to find recruiting firms looking for consultants with MDs who have never done a residency,” says Ferry. Twenty years ago, the young man’s prospects would have been bleak. Today, says the consultant, he has options. “Not that it would be easy to find a great and exciting job without work experience,” says Ferry, “but he will get picked up because of the science and biology he brings to the job, whether as a consultant to a conventional firm or to a biotech firm looking at drugs to be brought to market, or even writing authoritative, medical-science content for the Internet.”

- Mix it up.** Test an interesting part-time opportunity that complements your clinical duties. Younger generations of physicians—both women and men—expect balance in their careers, and increasing numbers work less than full time in their clinical practices. According to the 2007 retention survey by the American Medical Group Association and Cejka Search, 19 percent of physicians practice part time, up from 13 percent in 2005. “It used to be you were expected to be there all the time,” says Ferry. “That’s not the case anymore.”

treatment more accessible and better for everyone on a systemic level and holding these systems accountable,” she says. “We’re really seeking to ensure residents in need have the opportunity to access treatment as needed, making sure to create positive opportunities for the people we serve.”

Before landing at the Open Society Institute, Taylor served as deputy health

she and her patients functioned was even more important than her own medical knowledge base. “It was the appointment making, the filing, the nursing support, the follow-up, the coordination of care, the communication skills to affect medical behavior change in your patients when you had an average of seven minutes per patient,” she says. “I wanted to be in charge

“I took this position because I thought it might be more bang for the buck, [have] more effect globally, do more good.”

commissioner for Baltimore’s City Health Department. In that capacity, her MD yielded both enhanced credibility and, as for Selanikio, a sophisticated capacity for translation. And like her work with the Open Society Institute, it scratched an itch she started noticing as co-director of pediatrics during her four years seeing uninsured patients at Unity Health Care’s Upper Cardozo Clinic. “I was good at seeing patients day by day, but felt like it wasn’t enough because I encountered the same sort of issues over and over again,” says Taylor, who also spent two years as a legislative assistant for health and social policy to Senator Paul Sarbanes. “I wanted to change the landscape, make the system more responsive as a whole and affect more patients.”

That drive to influence the big picture also drew Esther Nash from her first clinical appointment—as a general internist at an HMO—to her current role as senior medical director of population health and wellness for Independence Blue Cross. That first year in practice was transformative. Suddenly, Nash was learning that the system in which

of fixing the system. It didn’t matter what differential diagnoses I made if my patients couldn’t get an appointment and their charts were lost. I didn’t want to complain about broken processes, I wanted to fix them.”

Today, Nash has twenty years’ experience as a medical executive. At Independence Blue Cross, she oversees a range of health promotion campaigns, educating patients about prevention and providing doctors with data to better manage their patient care. “Doctors have a one-on-one perspective,” says Nash, from her office on the thirty-second floor of a Philadelphia skyscraper. “The doctor has one patient in front of them and may have five minutes or thirty minutes. One by one, doctors do the best they can.” But when a patient leaves an appointment, the physician has no way of knowing whether her advice was implemented or a prescription filled and followed. “The only organizations in a region like ours who can measure and improve things on a population level are the health plans,” says Nash, who puts a heavy emphasis on programs designed to promote evidence-based

TRAINING

For Docs Considering the Great Beyond

After more than twenty-five years in leadership roles in health care, John Ferry now focuses exclusively on match-making. As a senior client partner with Korn/Ferry International he brings together physicians seeking new career opportunities with organizations seeking physicians to serve in executive roles in hospitals, other health services organizations, and life sciences companies. The volume of such searches shows no signs of slowing, but for docs serious about finding work beyond a clinical practice, Ferry says a little self-improvement may be in order.

- **Demonstrate executive capacity.**

It's one thing to manage a handful of colleagues; it's another thing entirely to land a hospital's chief medical officer title. If you aspire to the corner office, get started by volunteering for a committee charged with improving your hospital's financial, business development, or long-range planning,

and do a great job. It's a catch-22, Ferry admits. "Hospitals have expected physicians to serve in those kinds of roles but not be compensated and it's difficult to take time away from practice for work that's not compensated," he says. "The most successful people are very busy, in great demand, and have limited their own commitments to

those kinds of activities, especially if they were not compensated."

- **Learn to listen.** "There's a whole literature in the medical practice literature about physicians not being very good listeners," says Ferry. In management, even the appearance of distraction can be fatal, and the ability to effectively implement tough decisions in the context of competing agendas demands that all parties feel included. "A lot of the people you're working with—whether physicians or others—have a lot to say, and if they feel you haven't listened to their issues, they feel your decision or response is not informed—and that's not helpful." To

"Working as a manager is working on a team, and not always as captain."

make sure a candidate has the chops, Ferry asks around to learn how colleagues perceive that person's listening skills.

- **Cultivate a team approach.**

Historically, physicians have been trained with an overwhelming emphasis on personal responsibility. "You were personally responsible for getting it right, executing it well, and following up," says Ferry of the training his generation received. "That was not an easily delegated responsibility." And yet executive-level physicians must delegate—and collaborate. "Working as a manager is working on a team, and not always as captain," says Ferry. "It may be someone from finance or nursing who captains a team, and some

medicine and improved quality management. “I feel like I have 3.3 million patients,” she says, invoking the number of Americans Independence Blue Cross serves. “I’m able to affect 3.3 million people a teeny bit through multiple initiatives that my staff and department design and implement.”

Charles Mock hasn’t seen a patient in more than eighteen months. As a medical officer of the World Health Organization and head of WHO’s Violence and Injury Prevention and Disability program, he travels worldwide, promoting low-cost, sustainable care of the injured. “I took this position because I thought it might be more bang for the buck, [have] more effect globally, do more good,” says the trauma surgeon. That desire emerged directly from his clinical practice in a rural hospital in Ghana in the years after he left Brown, and drove his subsequent training. “I had many patients who’d been injured in traffic accidents, agricultural injuries,” he says. “There was little, system-wide, being done about it.” Back in the U.S., he focused his studies for an MPH and a PhD in epidemiology on systemic issues—not just one surgeon’s skills, but the ambulances, the hospital referrals—and

“It’s slow and it’s often arduous but I’m good at that—the persistence, and getting sad and mad that it hasn’t worked and sucking it up and going back at it.”

began developing collaborations with physicians in Ghana, Vietnam, and India (see *Brown Medicine*, Spring 2004).

In 2007, the WHO created a position to further his efforts. What he hadn’t anticipated is the difficulty of gauging whether he’s actually had an impact. “With individual patient care you know if you’ve done things right or got the outcome you wanted, espe-

cially in trauma care—usually by the time the case is over,” he says. “When you’re in a global organization and trying to work with and positively influence health ministers in 193 countries, many of the things you work on might not achieve their potential for decades. A lot of it comes down to faith that what you’re doing will ultimately have the impact you intend.”

WHO: KIMÁ JOY TAYLOR ’91 MD’95
WHAT: Director, Tackling Drug Addiction Initiative, Open Society Institute-Baltimore
WHERE: Baltimore, Maryland
WHY: “If I’m lucky in one thing, how can I make those opportunities for others? There’s some magic, where someone steps in for no obvious

reason and is there for you. People have done this for me and I owe it to return that favor. Being in the clinic really instilled in me the bigger picture. I’d always been interested in democracy and how it was stolen from many of us and how we’ve worked to gain it back. In the clinic, I realized: this is our democracy; we have to be part of the solution. You have to get in there and roll your sleeves up. It’s slow and it’s often arduous but I’m good at that—the persistence, and getting sad and mad that it hasn’t worked and sucking it up and going back at it. I’m good at that.”

WHO: LINDA SEMLITZ ’75 MD’78
WHAT: Director of Scientific and Medical Affairs for Banyu, a subsidiary of Merck & Co.
WHERE: Tokyo, Japan
WHY: “I’m constantly challenged by cross-cultural issues that influence the diagnosis and delivery of health care and health care policy. I’m naturally curious about people in other cultures. As a child psychiatrist practicing cross-cultural psychiatry, I’ve had the privilege to learn about culture through the children and families that I have treated and consulted with. Working with the pharmaceutical industry, I’ve had an opportunity to learn about cross-cultural issues as part of a corporate organization. In addition, I’ve had an opportunity to learn about and to influence cross-cultural health care policy.”

A WHOLE WORLD OUT THERE

Linda Semlitz left the U.S. within a year of her marriage to an American attorney who had previously taught international law at the National University of Singapore. That was in 1985. Over the intervening quarter-century, the child psychiatrist has held academic appointments in Singapore and Hong Kong and a variety of clinical and academic appointments in Asia and the U.S. In 2007,

WHO: **BOB VALENTINI '83 SCM'87 PHD'93 MD'93**

WHAT: Chief Executive Officer, P&H Therapeutics

WHERE: Providence, Rhode Island

WHY: "The wonderful thing about being in the health care commercial world is the ability as an individual and as part of a team to build companies that can potentially help thousands or tens of thousands of patients, far more than I could reach as a practicing physician. How do you squeeze the most out of your day, your week, your year? That's a professional driver for me."

As demand for physicians—in clinical and executive roles—continues growing, Ferry anticipates a wealth of new opportunities for doctors at all points in their careers.


she ascended to the post of director of scientific and medical affairs for Merck & Co.'s Japanese subsidiary, Banyu. She might have stayed in clinical medicine but for the move to Hong Kong, where the hurdles to getting a local medical license catapulted her in new directions. "[It] would have required an internship at a local government hospital and better Cantonese proficiency than my survival language skills," says Semlitz, who speaks rudimentary Japanese, as well, and considers both herself and her family "third culture" citizens, with equally strong ties to the U.S. and in Asia.

Bob Valentini was a joint MD-PhD student at Brown when his advisors started one of Rhode Island's first biotech firms, Cyto-Therapeutics. "I was exposed to the idea of going from a scientific idea to building a company," he says. "It was fascinating, seeing the way of putting all of those pieces together to solve a problem and develop a product." Within five years of finishing his

degree, Valentini had co-founded Cell Based Delivery, to develop products to treat hemophilia, anemia, and cardiovascular disease. Today, he heads P&H Therapeutics, a company that is developing orally available drugs to treat hypertension and dyslipidemias. P&H is the fourth in a string of startups he's been involved with in the decade since he left a faculty post at Brown, where he focused on biomaterials and regenerative medicine. "I've been lucky, in a way, to have been involved in almost the whole range of life science product areas," says Valentini, who also sits on the board of a drug discovery and a medical devices firm. "My whole goal in not pursuing clinical or academic medicine was not to get buttonholed," he says. "It's been very exciting to be involved in various therapeutic areas, using different technical approaches, but not necessarily being restricted in a particular disease or research area."

Beyond the opportunity to broadly influ-

ence huge numbers of patients, Valentini has thrived on the intellectual challenges of business development. "I love building things and putting things together," he says. "Building a company from nothing, just ideas, is the most challenging thing I could do. You need a strategy, you raise capital, you need intellectual property, you do research and product development, you do clinical work, and you deal with regulatory agencies. It's a puzzle."

There is no single thread linking the physicians around the world who seize fresh opportunities outside the examination room, says executive recruiter John Ferry. "I don't think that the people who seek these roles are necessarily doing it because they're unhappy with the practice of medicine or haven't found it rewarding," he says. Rather, they've sought out new challenges and caught the eye of someone who thought they had something to bring to an organization. Says Ferry: "Someone saw them as talented." And as demand for physicians—in clinical and executive roles—continues growing, Ferry anticipates a wealth of new opportunities for doctors at all points in their careers. "It's almost a perfect storm." 

Ithaca, NY-based writer Sharon Tregaskis reports on health care, the environment, and higher education.



Professor Tom Webster
loves to sweat the really,
really small stuff.

IMAGINE THAT!

Better living through engineering.

BY KRIS CAMBRA **The bright blue gel** on Tom Webster's desk looks more like the latest hair product than a nanomaterial with the ability to hold a human bone together. But that's what makes it such a cool trick for kids. Last July, Webster packed up the blue goo and traveled to Portland, OR, where he filmed an episode of "Dragonfly TV" for the PBS affiliate there. The show, which unravels the wonders of science for eight- to twelve-year-olds, demonstrated how nanomaterials are changing our world.

The gel could be injected into a fractured bone to help stabilize it while the bone heals. That means a patient could be applying weight to the affected area soon after the injection rather than hobbling around on crutches for weeks. As the fracture heals, the material disappears, leaving no trace.

Webster is just one of a growing group of biomedical engineers who are crossing physical and disciplinary boundaries to invent solutions to medical problems. From the earliest days of the Division of Biology and Medicine, which was founded under the guidance of the late biomedical engineer Pierre M. Galletti, biotechnology has been an area of excellence. But in recent years, on the strength of new collaborations forged by former Dean of the Division of Engineering Gregory Crawford with Alpert Medical School faculty, Brown has blossomed into a powerhouse of academic biomedical engineering, research, and entrepreneurship.

PHOTOGRAPHS BY KAREN PHILIPPI

USED ALL OVER MEDICINE.



Associate Professor
Jeffrey Morgan wants to
improve prosthetics by
creating a surface that
sticks to the skin.

WICKED SMALL STUFF

Though Webster is tackling some complex and common medical problems, he's an associate professor in a materials engineering concentration in the Division of Engineering with a dual appointment in the Department of Orthopaedics. "I'm still very materials science focused but then I have this part of the lab that is biologically, clinically focused," he explains.

Webster hopes to promote tissue growth with nanotechnology—defined as using nanomaterials, whether they are coatings, particles, or fibers. His lab focuses on six body tissues: bone, cartilage, vascular applications, central nervous system, skin, and the bladder. Nanomaterials that promote bone and cartilage growth could help arthritis sufferers. Vascular applications include modifying the metals used for arterial stents so that they repel clots without the need for drug coatings. In the central nervous system, Webster hopes to use carbon nanotubes to promote nerve cell growth. A member of Brown's Center for Restorative and Regenerative Medicine at the Providence VA Medical Center, he is trying to help orthopedists grow new skin around prosthetic limbs that are connected directly to residual bone. Working with a former colleague at Purdue, a urologist at Riley Children's Hospital in Indianapolis, Webster has developed a nanostructured polymer that would help the bladder keep its original size after part of it is removed due to bladder cancer.

Tackling these tough medical problems requires interface with clinical faculty. "There is really only so much we can do until we talk to clinicians, to people who are in the trenches, who are facing problems with what current materials can provide for them. So we have very close connections with orthopaedic surgeons like Roy Aaron, who give us a lot of clinical input in terms of 'Yes, you're going down the right path' or 'No, that's really not how it is,'" Webster says.

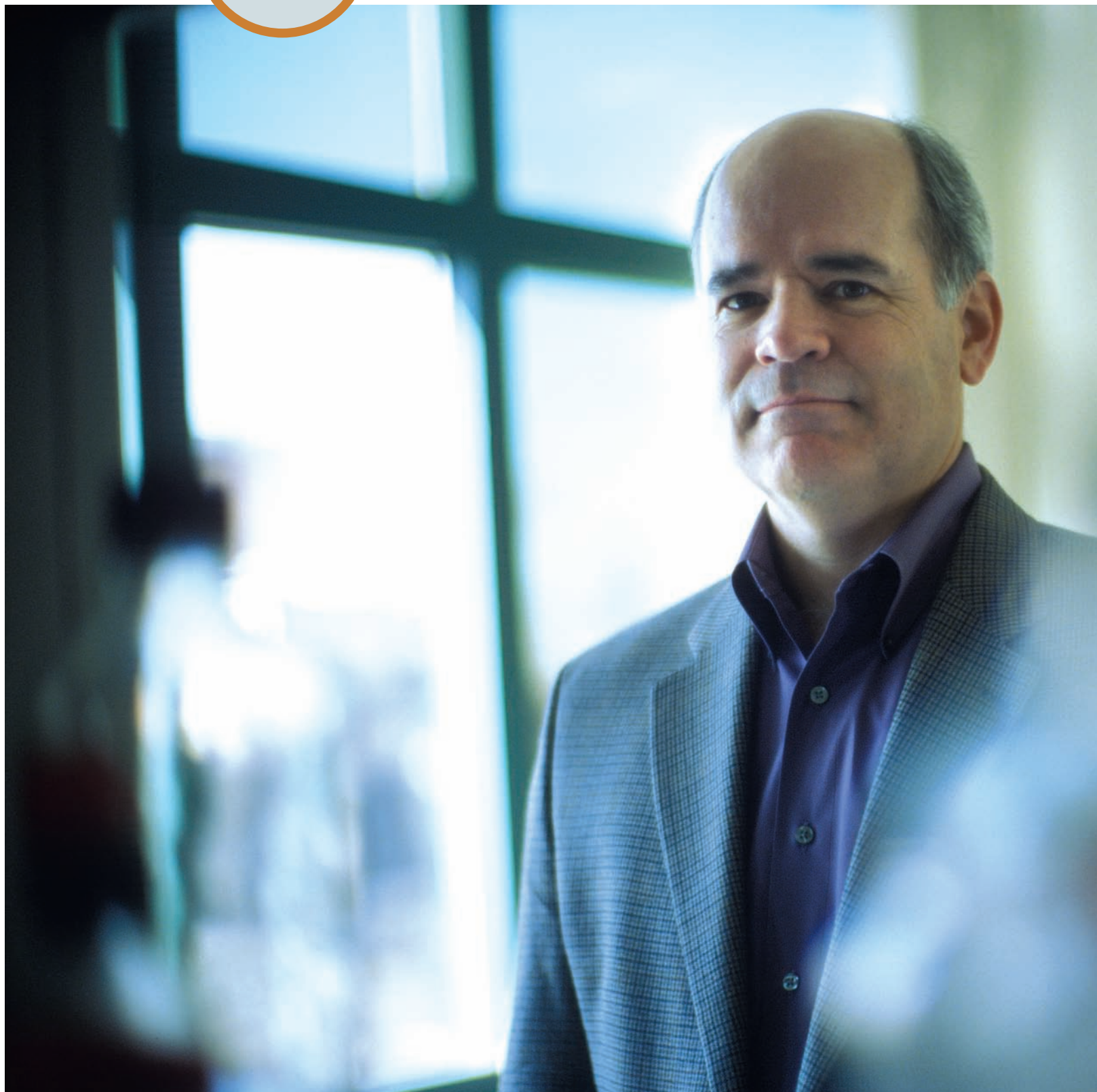
What also helps is Brown's new Institute for Molecular and Nanoscale Innovation (IMNI), founded last year as an umbrella organization to support centers and collaborative research teams in targeted areas of the molecular and nanosciences. IMNI describes itself as "polydisciplinary," boasting fifty-five faculty members from nine departments. Nano, it seems, is no longer small.

"Nanotechnology is being used all over medicine. It's only getting stronger with the establishment of these new centers serving as focal points to bring these [research] groups together," Webster says.

With many applications—in eye implants, in treating cancer, for instance—nanotechnology opened a door to treating and diagnosing diseases differently through the use of hard-core engineering,



“nANOTECHNOLOGY IS BEING



like controlling the roughness of a material. That's how these "nanosurfaces" are created.

Webster's work is driven by existing, less-than-perfect outcomes for tissue growth. "We're trying to create a material that's better than what we're implanting today," he says. He recalls learning that hip implants only last ten to fifteen years. "I said, 'That's awful!' [At age thirty-six], if I had to have my hip replaced, I'd have to go through four revision surgeries before I died.

"That was the first piece of information that was critical. You can go through each one of those tissues and see similar statistics. Take a vascular graft, a small diameter artery one less than 6 millimeters: the success rate is 25 percent after five to seven years. It cried out, 'There's got to be something you can do about this.'"

The key, it appears, is on the surface. Our bodies are composed of nanostructures. When the nanomaterials mimic that nanoroughness, new tissue growth is more successful.

"The amazing thing is that no matter what body tissue we're in, whether we're doing this for metals, polymers, or ceramics (the three classifications of materials that you can regrow tissue on), if we make a nanostructured surface, we're seeing better tissue growth on all of those materials for all of those implant applications. We're just intrigued by the promise," Webster says.

THE SKIN WE'RE IN

Webster's colleague, **Jeffrey Morgan**, is tackling similar issues from a different direction. An associate professor in the Department of Molecular Pharmacology, Physiology and Biotechnology, Morgan is also part of the Center for Restorative and Regenerative Medicine and is co-director of Brown's Center for Biomedical Engineering. Arto Nurmikko, of the Division of Engineering, is the Center's other director.



MORGAN'S LAB INTRODUCED

Last year, Morgan's lab made news around the globe when it introduced the first three-dimensional Petri dish. The surface of the dish is made of agarose, molded to have nooks and crannies that resemble tissue in vivo. Cells self-assemble naturally on the material and form "microtissues."

"The fields of cell biology and cell culture have been moving toward 3-D," Morgan explains. "Tissues grown in typical plastic Petri dishes are great, but they don't mimic all in vivo processes."

Like Webster, he's also been working on improving the skin growth around "osseointegrated" prosthetic limbs. These next-generation

prostheses use a titanium rod that actually attaches to the remaining bone. As new bone grows around the rod, it becomes completely attached to the patient's body. The problem is, the area where the prosthesis penetrates the skin is prone to inflammation and infection. These issues affect the entire family of percutaneous devices, which include commonly used dialysis ports and indwelling catheters.

"We're trying to solve this problem by trying to make better coatings that bring about better adhesion of skin to the device and coatings that release antibacterial compounds," Morgan says.

Another potential solution is finding flexible materials that have





Biomedical engineering graduate student Kimberly Waller studies the leg of a transgenic mouse that lacks the genes to produce lubricin, a mechanism in synovial fluid that prevents cartilage wear and improves joint lubrication.

THE WORLD'S FIRST 3-D PETRI DISH.

biomechanics that are similar to skin. “We think one of the problems is the devices are very hard, the skin is fairly soft, and any place those two meet will lead to stress concentrations that will lead to breakage of any seal that will form.” Biomedical engineering graduate student Brian Holt has been working with Morgan on this aspect. Holt has measured the viscoelasticity of the skin and is now finding polymers that match these viscoelastic properties.

Holt is a PhD candidate in the program, which was approved in 2002 and enrolled its first students in 2003. In five short years, Morgan says, the program has become increasingly more visible and

attracts high-quality students. An undergraduate concentration is also offered, and students take advantage of opportunities to do research, publish papers, and go to conferences.

“Biomedical engineering is multidisciplinary and collaborative. It’s very common for students to have a couple of mentors—co-mentorship happens,” Morgan points out. Holt, for example, is co-mentored by Morgan, an expert on skin, Assistant Professor of Engineering Anubhav Tripathi, an expert in viscoelastic measurements, and Professor of Medical Science Edith Mathiowitz, an expert in polymer chemistry.

TO MARKET, TO MARKET

It's not just campus-based faculty who are on the biomedical engineering bandwagon. Clinicians, particularly in the departments of Orthopaedics and Emergency Medicine, are hot to find bioengineered solutions to the problems they face with their patients every day.

Enter Gregory Jay, MD, PhD, engineer and emergency physician. He says he has the right vantage point for bringing the research to the bedside.

"The needs [we] are addressing are smaller, like orphan needs, but you can build small research engines that improve the care of patients," Jay says.

His chief project involves joint lubrication. In 2007, he and his team showed that lubricin, a protein found in the cartilage of joints, protects against early wear and higher friction in the joint. A knockout mouse which lacks the protein, developed by Dr. Matthew Warman '78, currently at Children's Hospital Boston, has proven these findings. "This is contrary to what was previously believed, as many have thought, that hyaluronic acid was the principal lubricant in synovial fluid. We are now developing structures for the joint to prevent adhesions and damage," Jay explains.

there's the intellectual property piece, filing for a patent, finding grant support. Then it becomes more applied. Should I spin off a company? The answer to that is complicated, maybe yes or maybe no."

Help is also available through Small Business Technology Transfer (STTR) grants from the National Institutes of Health. Federal agencies with extramural research and development budgets over \$100 million are required to set aside 2.5 percent of their budget annually for grants to small companies to conduct innovative research or research and development that has potential for commercialization and public benefit. Since the programs were mandated in 2000, \$12 billion has been distributed to small businesses which share technology development with academic institutions.

Still, many faculty are uneasy about using business mechanisms to advance research. Jay advises, "If you create a conflict but always put patients first, and manage it aggressively, you should be in keeping with the desired elements of translational research as set forth by NIH."

Another spinoff company is Corum Medical, founded in 2006 by Alan R. Kivnik in association with Brown's Gregory Crawford and John McMurphy of the Division of Engineering, Jay, and Selim Suner

BIOENGINEERING LENDS ITSELF TO TRANSLATIONAL RESEARCH, BUT HOW DO YOU GET THE TECHNOLOGY TO THE BEDSIDE?

This is pre-clinical research that could be used to prevent arthritis after joint trauma, cruciate ligament tears, or blunt trauma. In 2004, Jay helped form a biotech company spun out of Rhode Island Hospital that is developing an injection treatment for inflamed joints that contains lubricin.

Biomedical engineering lends itself naturally to translational research. The question for all fields is: How do you get the technology to the bedside? That's a question most MDs leave to the MBAs to figure out.

But Jay advocates for more researcher control and more institutional support, possibly from Brown's Clinical Translational Science Award, to help bring ideas to the bedside.

"When you look at the timeline to go from bench to bedside, there is a void," he says. "You have an idea, you create an animal model,

'86 MSc '87 MD '92, of the Department of Emergency Medicine. Their product, LumenI, uses biophotonics to measure hemoglobin by aiming a light at the eye. The light meter reads the patient's conjunctiva, and translates this precise color analysis into a reading of blood hemoglobin measured in grams per deciliter, making it a rapid and non-invasive test for anemia.

"The World Health Organization has called anemia the world's biggest health concern," Jay says. "This is an inexpensive technology that can be used in a fully outfitted patient care facility or in a developing country."

Jay has concentrated more on minimally invasive medical device development because the Emergency Department needs screening devices to detect medical conditions quickly and accurately. Like emergency medicine, he's all about fast.



“YOU CAN’T BE A BIOENGINEERING GRAD STUDENT AND NOT HAVE CONTACT WITH PATIENTS.”

A number of faculty have filed patents or licensed their discoveries, like Jeffrey Morgan’s 3-D Petri dish, for which the University has a patent pending. Though direct licensing in some cases does work, “investigator-driven start-ups is the way to go,” Jay advises. “That way investigators remain in control. When you license, you lose control and there are few guarantees that promising discoveries will make it to the bedside.”

MONEY TALKS

Brown’s biomedical engineering efforts have been bolstered over the years by some major external grants. A Whitaker Foundation grant to Michael Lysaght in the Department of Molecular Pharmacology, Physiology and Biotechnology, in 2001, made it possible to hire four new faculty and launch the Center for Biomedical Engineering. Lysaght was instrumental in shepherding the growth of bioengineering at Brown early in this decade. The addition of the National Institute of Biomedical Imaging and Bioengineering (NIBIB) to the NIH has also helped.

Last year, Associate Professor of Medical Science Diane Hoffman-Kim and Professor of Engineering Tayhas Palmore scored \$1.27 million from NIBIB to create a biomaterial platform for growing nerve cells in complex environments. They’ll use that to understand how nerve cells navigate guidance cues after injury. Ultimately, the work will provide new information on how to promote nerve cell regeneration. Hoffman-Kim is an optics engineer and neurobiologist by training, while Palmore is an electrochemist. As biomedical engineers, they’ve had to learn to speak one another’s language.

“It’s been a lot of fun and very interesting to immerse our groups in the day-to-day realities of true interdisciplinary work,” Hoffman-Kim says. “Students with very different training backgrounds have come together with open-minded perspectives to address challenging questions about how nerves grow. The two groups push each other in good ways, and leave no assumptions unquestioned!”

The W. M. Keck Foundation recently invested \$1.8 million in a new imaging system being engineered by a multidisciplinary group led by Elizabeth Brainerd, in the Department of Ecology and Evolutionary Biology. Composed of bioengineer Joseph Crisco, computer scientist David Laidlaw, orthopedic experts Braden Fleming and Douglas Moore, and biologists Stephen Gatesy,

Thomas Roberts, and Sharon Swartz, the team will create a high-resolution, high-speed system that will produce three-dimensional x-rays (see *Brown Medicine*, Spring 2007). The new system, dubbed CTX, will combine the 3-D capability of CT scanners and the real-time movement tracking of cinefluoroscopy. Researchers will be able to track 3-D skeletal movements with 0.1 millimeter accuracy and see the equivalent of 1,000 CT images per second.

MORE TO COME

Selim Suner, one of four Emergency Medicine faculty members with backgrounds in engineering and a co-developer of the LumenI product, credits the explosion in biomedical engineering collaborations to a landmark day-long symposium Greg Crawford (now dean of the College of Science at Notre Dame University) and Greg Jay assembled in 2005 to facilitate interactions among the faculty.

“That provided pivotal momentum in that so many ongoing projects came out of that conference,” Suner says.

His own work with students and residents bridges the divide, providing opportunities for interaction with patients. “You can’t be a bioengineering grad student and not have contact with patients.”

Webster echoes that need. “We actively seek and want that. The students in my lab like to feel that they are addressing a real clinical problem, and unless they are talking to clinicians, I don’t think they get that sense. We try to include clinicians on PhD committees, papers, and conference presentations as much as possible.”

Close and practically seamless collaboration between the engineers and the docs is what makes Brown’s biomedical engineering a rarity, and quite successful.

It’s why Webster came east from Purdue University in 2006. “At Purdue, we did have a medical school and a formal connection. But the problem is distance. It sounds trivial with technology today, but the medical school at Purdue was an hour away and that might as well have been a plane ride. It separated the clinicians from the engineers. Unless you’re on the same campus they’re not really coming together like in Brown’s model,” he says.

What would be ideal, according to Greg Jay, is a translational research building that would go even further, “allowing physicians and engineers to work near each other, be in the same building. That would really seed collaborations.”





The Class of 2008
enjoys a light
moment during a
solemn ceremony.

ALUMNI ALBUM

CHECKING IN WITH BROWN MEDICAL ALUMNI

CLASSNOTES

1977

Claudia B. Gruss '74 has been elected vice-president of the Fairfield County Medical Association. She practices gastroenterology and internal medicine in Georgetown,

Norwalk, and Wilton, CT, and is affiliated with Arbor Medical Group, LLC. She is an attending physician at Norwalk Hospital and is board certified in internal medicine and gastroenterology. She is a councilor to the Connecticut State Medical Society and a board member of the Women's Medical Association of Fairfield County.

1978

Hal Gever '75 is a staff physician with the Department of Veterans Affairs in Horsham, PA. He writes: "In my spare time, I have also built up a consulting peer review business with over thirty clients, including many nationwide insurers. I have three children: a son, Evan (who works on Wall Street for J. P. Morgan in measured risk), an older daughter, Allison, who is graduating from Penn State this year as a Spanish Education major, and Dara, my seventeen-year-old daughter who is now starting to consider college. My wife, Diana Turek-Gever (Cornell '75), teaches ninth grade English in a local school district. For diversion, I enjoy chess, playing piano (relegated to when no one is home...), self-directing my IRA, and I have belonged for nearly twenty years to my township book discussion group where I am the only doctor and only male. (This often finds me at the

KAREN PHILLIPS

ALUMNI ALBUM

of their youngest son, Douglas. Douglas drowned in June while swimming with friends in the Ithaca Gorge at Cornell University. He had just completed his freshman year at Cornell and had remained on campus to attend a three-week seminar.

Karen L. Daigle '82 has joined the staff at Hasbro Children's Hospital as a pediatric pulmonologist. Daigle's interests focus on the treatment of asthma as well as education of pediatric providers. Before joining Hasbro Children's Hospital, Daigle was an associate professor of pediatrics at the University of Connecticut School of Medicine, where she also served as the director of the pediatric pulmonary fellowship training program.

1989

David Lyden was named Stavros S. Niarchos Associate Professor in Pediatric Cardiology at Weill Cornell Medical College, where he is also an investigator in the Division of

Pediatric Hematology and Oncology and associate professor of cell and development biology. This award recognizes his pioneering work in cell biology of cancer and cardiovascular disease. Among his notable findings are two bone marrow-derived progenitor cells that form new blood vessels in tumors and regenerative tissues, with clinical applications that include the heart.

1991

Emma M. Simmons, MPH, was named Assistant Dean for Minority Medical Affairs at Alpert Medical School in September. In announcing the appointment, Dean Edward J. Wing praised Emma for her dedication to



Jean Turner's father tries on his daughter's cap.

care for patients with HIV/AIDS and the underserved. She is also assistant professor of family medicine.

1992

William D. Jones writes, "I went to Stockholm this summer to visit some friends at Karolinska. We had a great time catching up on the past twenty years." Since 1996, he says, "I've been in solo practice in Oklahoma City. I have an open arms and open door policy to provide medical care to whoever needs it, regardless of gender, race, sexual orientation, or money. Life in Oklahoma City is fairly slow. I try to lead by example and not by fanfare. I am the only openly gay MD in the city, which really has not been an issue all these years."

1995

Fred Hsieh of the Cleveland Clinic Foundation was one of just nineteen physicians in the country to be awarded an Early Career Physician-Scientist award from the Howard Hughes Medical Institute. The intent of the award, which provides a five-year, \$375,000 grant to support direct research expenses, is to help young physician-scientists turn basic research into treatments that will have a major impact on health. Fred's research focuses on the immune system's mast cells and their role in asthma.

1996

Elizabeth Freedman '92 is doing well in West Hartford, CT, with her husband, Trey, and children, Frances, eight, and William, four.

Mark D. Vannorsdall is in Greenville, NC, where his professional activities include private practice and interventional nephrology, rural outreach nephrology clinics, the Eastern Carolina University/Brody School of Medicine transplant program, the interventional nephrology fellowship training program, and clinical trials. He and his wife, Laura Vannorsdall, have four children: John, Peter, Kate, and Emma. Mark writes, "Our oldest son, John, who arrived in the second year of medical school, will attend St. George's School, Newport [RI], this fall."

KAREN PHILLIPS (2)



Gita Suneja gets congratulated by her niece.

“I have **belonged** for nearly twenty years to my township **book discussion group** where I am the **only doctor** and **only male**. (This often **finds me at the focus** of many discussions.)”

focus of many discussions.) I have been on the Board of Directors of my synagogue for the past three years as Director of Publicity and have taken a stab at writing (published twice by *Medical Economics*).”

Robert Levin '75 and his wife, Mona, missed the class's 30th Reunion in May with good reason: they were attending the engagement party of their son Kenneth, twenty-four, who finished two years of research at the NIH and began medical school at Tulane in August. Robert and Mona celebrated their thirty-second wedding anniversary with a trip to France to visit their youngest son, Adam, twenty, who completed a semester at Sciences Po before returning to McGill University for senior year in the fall. The Levins became grandparents on April 29, 2008, when Marlee Ann Levin was born to their oldest son, Jonathan, twenty-eight, and his wife, Sara, who are both teachers in Rockland County, NY.

1979

Julius Gall was named one of the area's best doctors by *Philadelphia* magazine. He is on the medical staff at Shore Memorial Hospital and practices at Shore Family Medicine in Somers Point, NJ.

Daniel S. Harrop '76 was inducted into the Bishop Hendricken High School (Warwick, RI) Hall of Fame on March 30. He was also awarded the Alumni Service Award. In June,

WHAT'S NEW WITH YOU?

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

MATT FRANCIS, KAREN PHILIPPI (2)

along with **Jason DeGregorio** MD'02, Dan participated in a Hippocratic Oath Mass at St. Sebastian Church in Providence. The physicians took the Oath and also vowed to uphold the sanctity of life at all stages in their practice of medicine and throughout their lives.



The 30th Reunion class leads the pack.

Dan is president of the Rhode Island guild of the Catholic Medical Association.

1980

Michael Stout was profiled by South Carolina newspaper *The State*. Stout is CEO of UCI Medical Affiliates and “occasionally slips on the white coat to see patients.” The Columbia-based management company for Doctors Care continues to expand, with the number of offices growing by a third over five years after location forty opened in Florence County this year.

1985

Nadine Cartwright-Lowe '82, P'07, '09 and her husband, Paul Lowe '82, grieve the loss



Hari Naidu, Lisa Taitzman, Marlene Cutitar, and Stephen Gilheaney



Adeline Winkes and family enjoy Alumni Field Day.

**EYE
ON
ALUMNI**

SHE BROKE THE MOLD

A trailblazer fights for the health of all women.

"I need to work on my work-life balance," says **Susan Kornstein** '80 MD'83, a psychiatrist and expert in women's mental health. "But I love everything I do, so I can never figure out what to give up."

Kornstein is professor of psychiatry and obstetrics/gynecology at Virginia Commonwealth University in Richmond and director of clinical research in the Department of Psychiatry, the first female tenured professor in that department. A pioneer in the field of gender-specific pharmacology, she published the first large study showing gender differences in antidepressant treatment response, and she edited the first comprehensive textbook on women's mental health. She is president of the International Association for Women's Mental Health, president-elect of the North American Society for Psychosocial Obstetrics and Gynecology, and recently served as scientific program chair for the Third International Congress on Women's Mental Health, held last March in Melbourne, Australia. She is currently editor-in-chief of the *Journal of Women's Health*, the first psychiatrist to hold the position. Not surprisingly, she was

department, then in girls, eventually in pre-teens and misses."

By high school, she had many interests—ballet, piano, glee club, languages—and could have gone in a number of directions. A candy striper at The Miriam Hospital, she "loved being in that environment, around patients," she recalls. With a handful of college acceptances to Ivies, including Brown, Kornstein opted to stay in Providence, drawn by the Program in Liberal Medical Education and the opportunity to continue with her piano teacher, a Brown faculty member. Kornstein pursued piano throughout her undergraduate years and seriously considered a career in music.

Ultimately, the focus required of a concert pianist was too narrow, the hours of daily practice too isolating. "I loved helping people and making a difference, and I always enjoyed math and science," she says. "Medicine combines all of that into one profession."

For the future leader in women's health, gender might also have played a role. "An unconscious factor in my choosing medicine may have been that my mother

"My mother wanted to go to medical school but was discouraged because so few women were in medicine at that time."

just named one of ten Women to Watch for 2008 by Jewish Women International.

Despite the long list of accomplishments, medicine was anything but a sure thing when she was a young girl growing up in Providence. "I thought I'd end up doing something with clothes or in fashion," says Kornstein, whose father and grandfather owned a department store in Woonsocket, RI. As a kid, she helped out in the store when needed, "working first in the toy

[Esta Strong Kornstein, Brown/Pembroke '52] wanted to go to medical school but was discouraged because so few women were in medicine at that time." Perhaps as some measure of cosmic justice, all three of the elder Kornstein's children became physicians: Susan's two brothers are in ophthalmology (**Howard Kornstein** '89 MD'93) and surgical pathology.

Kornstein appreciates how far women's health has come. "It's been very rewarding



Kornstein keeps her balance while doing it all.

watching the field develop and progress, from a time when women were regularly excluded from clinical trials to now, when we have Offices of Women's Health at NIH, the FDA, the CDC, and National Centers of Excellence in Women's Health."

Those developments are due in no small part to her own work as an agent of change. She is co-founder and executive director of the VCU Institute for Women's Health, designated a National Center of Excellence in 2003, as well as co-founder and executive director of the VCU Mood Disorders Institute. She is also a member of the VCU Health System Board, a gubernatorial appointment.

She acknowledges that advances come with trade-offs. "It's a merry-go-round," Kornstein says of a world where women frequently try to do too much, "and sometimes it's hard to get off."

Her advice? "Prioritize what's most important to you, and don't worry about the rest."

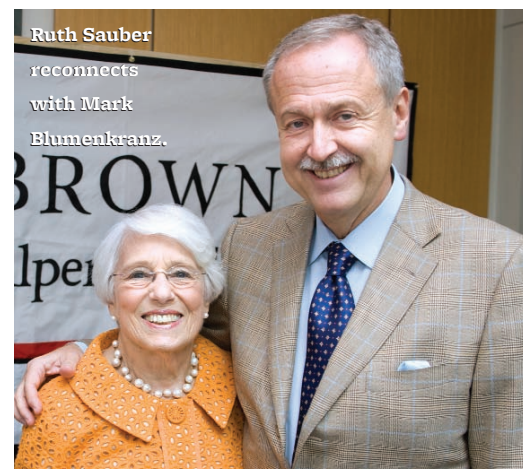
—**Lisa Rowley**

ALUMNI ALBUM

1998

Wendy Wan-sir Lin '94 is an attending physician in the Department of Emergency Medicine, Cedars Sinai Medical Center Los Angeles. "On January 26, 2008," Wendy writes, "I married Bergt Heinz Juergen Bieler in Santa Monica and had a reception

following in Marina Del Rey, CA. We were blessed with several Brown alumni who were present on our special day. My sister, Melissa Lin '98, was my maid of honor. **Linda Huffer** '95 MD'99, **Darissa Kon** '95 MD'98, and Leanne Gauthier-Baxter '96 were part of the bridal party. **Patricia Poitevien-LeBlanc** '94 MD'98 and **Myechia Minter-Jordan** '94 MD'98 were readers in the ceremony. Other beloved guests included **Tony Ahn** '94 MD'98, Kristin Hunt-Canada '94, **Ethelind Cheng** '98 MD'03, **Carla Janzen** MD'98, Karen Loggia '95, Elizabeth Zehr-Maclean '96, **Andy Hsu** '95 MD'01, Jay Remington '92,

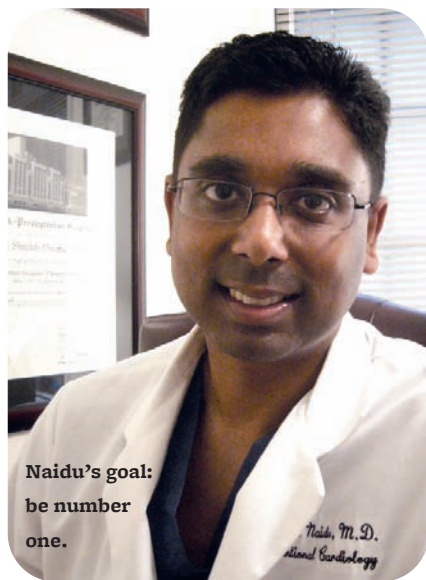


Ruth Sauber
reconnects
with Mark
Blumenkranz.

EYE
ON
ALUMNI

CUTTING EDGE

An interventional cardiologist puts Mineola, NY, on the map.



Naidu's goal:
be number
one.

Two years ago, **Srihari S. Naidu** '93 MD'97 assumed his new position as director of the Cardiac Catheterization Laboratory and director of the Interventional Cardiology Fellowship Program at Winthrop-University Hospital in Mineola, NY. At thirty-four, barely two years out of training, he was the youngest physician in the country appointed to direct a high-volume angioplasty lab, supervising a staff of fifty.

Upon his arrival, Naidu found a Long Island hospital with a terrific safety record

and a reputation for high-quality patient care, but not for research or innovation. His goal was anything but modest: to make Winthrop-University Hospital and Long Island known around the country and the world as a leader in interventional cardiology, a field that specializes in catheter-based treatment of heart diseases. He was told by old hands at the hospital that it would never be at the forefront, pushing innovation. "And I told them," Naidu recalls, "that I wasn't hired for Winthrop to be Number 2."

Naidu had come from Weill-Cornell Medical Center, where he introduced and performed an advanced technical procedure mastered by only a handful of specialists nationwide. Called alcohol septal ablation, the procedure is a minimally

death in people under thirty. Naidu had learned the procedure during fellowship training at the University of Pennsylvania, widely regarded as one of the nation's top three centers for interventional cardiology.

Today, the Winthrop Cardiac Catheterization Center includes four designated state-of-the-art cardiac catheterization laboratories, is a training facility for two interventional fellows per year, and is involved in multiple clinical trials and original research. And it is increasingly recognized as the leader on Long Island for new procedures and innovation. "You do that by micro-managing," Naidu says. "I'm in the lab day and night. I know exactly what's going on, so I can catch any mistakes before they become emergencies."

Naidu sees one hundred patients and their families a year as part of his newly created Hypertrophic Cardiomyopathy Center and travels the country teaching procedures and speaking about his

"I'm in the lab day and night. I know exactly what's going on, so I can catch any mistakes before they become emergencies."

invasive alternative to open heart surgery for patients with hypertrophic cardiomyopathy, a genetic condition characterized by thickening of the heart muscle that is the most common cause of cardiac sudden

research and the latest technologies. He negotiates with device companies to be among the first to acquire the newest stents and other equipment. The payoff is worth it, according to Naidu: "When you do all

MATT FRANCIS/COURTESY NAIDU

Laura Gardner-Remington '94, Nicole Reyes '95, Dan Rubinstein '91, Abigail Reiser-Rubinstein '95, Jennifer Hsu '95, **Andy Shen** '95 MD'99, and Irene Shen '97. We are living happily in LA and I can be contacted at docwendyl@yahoo.com."

1999

Jenny Souther '95 HS' opened her own practice in Cumberland, RI, last year. Jenny writes: "I love it, and other than the paycheck (or lack thereof), being my own boss is great. My daughter is five and is a Brown student in the making."

that, eventually people start associating you with the latest innovation in the field."

The next wave of interventional cardiology, for instance, focuses on minimally invasive methods to tackle structural heart disease such as valve disease, holes in the heart, and other mechanical problems. "There was nobody taking up that mantle on Long Island," explains Naidu, who thought, *Why can't I become the go-to person here for structural heart intervention?*

Less than two years later, Naidu now performs more alcohol septal ablations than anyone else in New York, and more atrial septal defect (ASD) or patent foramen ovale (PFO) closure procedures than any other adult cardiologist on Long Island. In addition, he has organized a full-day, CME-accredited symposium on structural heart disease that brought six of the most prominent experts in the country to Winthrop in September.

Such are the beginnings of a national reputation. Naidu is now regularly invited to lecture at annual meetings of national professional organizations and recently was one of ten interventional cardiologists from around the world appointed to sit on the Cardiac Catheterization and Intervention Committee of the American College of Cardiology.

"I see my job as having four parts," Naidu says, "clinician, businessman, researcher, and innovator—and I focus on all of them."

—L.R.

MATT FRANCIS; KAREN PHILLIPS

"Sean and I are happy to announce **the birth of Aidan Lai Becker** this April!...You definitely **don't learn about this part** on the ob/gyn or pediatrics rotations."

Melisa Lai Becker '94 writes: "Sean and I are happy to announce the birth of Aidan Lai Becker this April! What may have been an even more amazing feat is that we managed to file our taxes just hours before Aidan's arrival. So far, it's been amazing (and exhausting)—you definitely don't learn about this part on the ob/gyn or pediatrics rotations. We didn't make it to reunion this year but were able to get in one hour at Campus Dance thanks to visiting grandparents."

2000

Andrea Anderson '96 writes: "In April 2006 I was pleased to serve as a bridesmaid at the wedding celebration of my former roommate **Jeannie Yang** '96 MD'00 to Jonathan Chun (Washington Univ. in St. Louis '96 MD'01). Other Brown alums in attendance were Lesly Romero Fernandez, **Michelle Ferdinand Liu** '96 MD'01, and **Lisa Menard Manlove** MD'00. The couple was pleased to announce the birth of a baby girl in July 2007. Jeannie completed her surgery resi-

dency last year and is taking some time for the baby before pursuing a pediatric surgery fellowship. Her husband also completed his surgical training and will enter a colorectal surgical fellowship next year. The proud parents can be reached at jeanniecyang@yahoo.com."

2001

Maha Ahmad '96 MMS'01 and Mehdi Rizvi were married on May 25, 2008.



Peter Panton
chats with
Joukowsky
Award winner
Levi Adams.



Shahrzad
Ehdaivand,
left, and Grace
Farris prepare
to become
MDs.

EYE
ON
ALUMNI

Writer Ronai

IT'S ALL ABOUT
THE KIDS

Ronai is at once teacher, learner, and writer.

After all the time **Christina Ronai** MD'08 has spent in schools, it's no wonder that she is loving the first few months of her residency in pediatrics at the University of Washington in Seattle. "It's a really big change and very exciting to be doing something different."

Born in New York and raised in London, Ronai returned to the U.S. to study at Williams College. Interested in both the liberal arts and medicine, she checked the pre-med box, took some science classes, and ultimately majored in English. "I was the person who registered for organic chemistry every semester, but when it actually came time, I'd think, 'Well, maybe not this year.'"

After college, she taught kindergarten and third grade at independent schools in New York. Ronai enjoyed teaching, loved the kids, and went on to earn her master's in early childhood/elementary education at Bank Street College. For her master's

thesis, she wrote and illustrated a children's book, *Down in the Basement*, a somewhat autobiographical story about a little girl who loves the quiet, side-by-side industry of working with her grandfather in his woodshop.

After three years of teaching, the time seemed right to give medicine a shot. Making good on her much-delayed date with organic chemistry, Ronai enrolled in the post-bac pre-med program at Bryn Mawr, secure in the knowledge that "the day I don't like medicine is the day I go back to the classroom."

But Ronai did like medical school, and not least the freedom Brown affords to pursue individual interests. She spent parts of three summers working at the original Hole in the Wall Gang Camp in Ashford, CT, Paul Newman's camp for chronically ill children. She adored the time with the kids, their counselors, and medical staff, and one summer, in a life-imitating-art instance of role-reversal, she was asked to teach in the camp's woodshop. For Ronai "the most important part of Camp was that it let the kids be kids again. At home their illnesses are so all encompassing."

Children are the obvious thread connecting Ronai's teaching, writing, and medical endeavors. She hopes one day to do a fellowship, then practice in a hospital pediatrics unit, ideally in a teaching institution where she could work with residents and medical students. "What I like about medicine is what I liked about teaching—being part of a team. You're teaching and you're learning at the same time, and you get to bounce ideas off each other."

While Ronai would love to find a publisher for her children's book (and write another someday), for the time being, she is busy with residency training and trying to tie up loose ends from medical

For her master's thesis, **Ronai wrote and illustrated a children's book, *Down in the Basement*, about a little girl who loves the quiet, side-by-side industry of working with her grandfather in his woodshop.**

school—like revising a paper that she and Professors Julie Taylor and Ed Feller co-authored that has been accepted for publication by *Breastfeeding Medicine*.

Despite the new adjustments of starting residency and moving across country, "I'm not overwhelmed at the moment, mostly exhilarated," she says. "I'm sure overwhelmed will come later." Then again, for an adept manager of kindergartners, maybe not.

—L.R.

ding is planned. Beverly is active in the Brown Club of New York City and would like to hear from alums in the city. Contact Beverly at 435 E. 70th St., #32E, New York City 10021 or beverly_johnson@alumni.brown.edu.

KAREN PHILLIPS

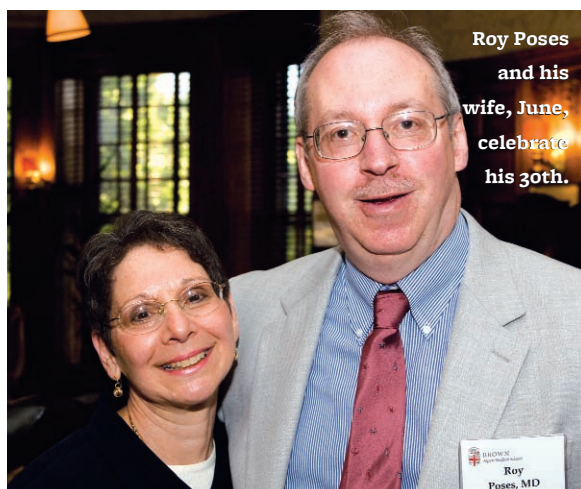
2007

Jared Jagdeo '02 began his dermatology residency in Brooklyn, NY, in July. He continues to conduct skin-aging and cancer research, and this April gave an oral presentation based on his master's thesis research

at the Anti-Aging World Conference in Paris. He also started a networking website for medical students and young doctors and friends (www.internyear.com) and encourages alumni to visit the website. Contact Jared at admin@internyear.com. 

ALUMNI ALBUM

Cameo Cozart-Chance '97 writes: "My husband, Travis, and I are delighted to announce the March 13, 2008, birth of our daughter, Camryn Pryce Chance. We are all doing well and adjusting to parenthood. I work outside of Washington, DC, at Doctors Community Hospital as an emergency room physician and assistant director of operations of the department."



Roy Poses
and his
wife, June,
celebrate
his 30th.

2002

Jason DeGregorio '97 took part in a Hippocratic Oath Mass on June 1, where he took the Oath and vowed to "maintain the utmost respect for every human life, from fertility to natural death." **Dan Harrop** '76 MD'79 also participated in the ceremony.

Debra (Schwartz) Hillier is back in New England, now working at Children's Hospital Boston. She has a two-year-old named Molly.

Robert Meguid, MPH '97 married Cheryl Miller (Towson '03) on the Chesapeake Bay outside of Baltimore, on May 23. In attendance were groomsmen Joel Hartstein '97, David Israeli '97, Michael Tucker '97, Craig Galligan '97, and Ajay Maker '97. "Alvin Bisvara '97, Gidon Felsen '98, **Rory Priester** '98 MD'02, **Mark Slidell**, MPH MD'03, and my sister, Bonnie Meguid, PhD '95 joined us for the celebration," Robert writes. "Our wedding came after a five-year courtship,

"Our **wedding came after a five-year courtship,** and coincided with my **completion of an MPH** from Bloomberg School of Public Health."

and coincided with my completion of a Masters in Public Health from the Johns Hopkins Bloomberg School of Public Health. I am currently in the seventh year of an eight-year General Surgery residency at Johns Hopkins, to be followed by a fellowship. I'd welcome hearing from old friends at Robert_Meguid@yahoo.com."

2003

Adrienne Tsai Kung '99 and **Justin Kung** MD'03 (Penn '99) announce the February 13, 2008, birth of daughter Evelyn Li-Ling Kung. Adrienne is finishing up residency in anesthesiology, and Justin is finishing up residency in radiology. They are both at Beth Israel Deaconess Medical Center in Boston and would love to hear from old friends. Contact Adrienne at adrienne_tsai@hotmail.com.

Jonathan Lee '99 and his wife, Glenna, had a beautiful baby girl, Annika Morgan, on June 4, 2007.



Montoya Taylor,
dressed for a
red-letter day.

Amanda Weiler is a pediatrician in Los Angeles. She and husband Steven Heymann "joyfully welcomed Lilliana Grace Heymann on May 17, 2008. This is our first child and we couldn't be more thrilled!"

2004

Josh Markowitz '99 writes: "I am happy to announce that I will be finishing my residency in emergency medicine at Yale this June and heading down to Philadelphia where I will be joining my wife, Alison Barnstable '03, who is currently a veterinary student at Penn. I have accepted a position as the emergency medicine ultrasound fellow at Drexel University." Contact Josh at j@alumni.brown.edu.

2006

Beverly Johnson '01 writes that she is delighted to announce her engagement to Patrick McCormick (MIT '98). A June wed-

MATT FRANCIS/KAREN PHILIPPI

OBITS



LINDA BOZZARIO

A LIFE WELL LIVED

Brown's medical community was deeply saddened by the unexpected loss of Linda Bozzario on May 28, 2008. For nearly three decades, Linda served the Office of Student Affairs with her trademark compassion, dedication, and skill, building the clinical clerkship office from the ground up. On a beautiful Thursday in late June, a crowd of family, friends, colleagues, students, and alumni filled Manning Chapel to celebrate her life—and to say good-bye. Below is an excerpt from the eulogy delivered by Alexandra Morang Jackson, director of medical student affairs.

For twenty-eight years, Linda graced the halls of Brown Medical School and has touched the lives of over 1,800 of our graduates, now physicians, many of whom are here today. Each class relied on Linda's expertise, advice, and wisdom to help them navigate the sometimes murky and confusing waters of their clinical education...I bore witness to the stream of students entering with a laundry list of questions and fretful countenance. Linda would welcome them in, encourage them to share their stories and concerns, then somehow magically make everything right again...Students often

returned with chocolate, bottles of wine, or one-of-a-kind gifts from India, Africa, Spain, Bangladesh, each hand-picked for Linda. Those gifts are found throughout her office, wonderful reminders of hearts Linda touched.

During Linda's lengthy tenure here, she often had the experience of working with students while they were [in medical school], watching them as they completed residency, then working with them again as they became fellows and attendings, clerkship directors and professors. She loved the evolution of her role from trusted advisor to valued colleague.

Linda [also] was a devoted wife and mother, whose family, anyone could see, was the light of her life. They all shared a passion for the water and in the summer months practically lived on their boat on Narragansett Bay. Her husband, Lou, and son, Craig, would dive for lobsters or dig for little necks, and Linda would turn the day's catch into some extraordinary dish.

The news of Linda's passing spread through the University and hospitals like wildfire as it reached our alumni. The avalanche of response was uniform in message: "How can this be?" was typically followed by "She was always so helpful and kind to me," ending with "I will never forget her."

Donations in Linda's memory may be made to the Pancreatic Cancer Action Headquarters, 2141 Rosecrans Avenue, Suite 7000, El Segundo, CA 90245 or www.pancan.org. Messages in her memory may be left in her Guest Book at Legacy.com.

SUNGMAN CHA

MAN OF FIRSTS

Professor Emeritus Sungman Cha, 80, of Providence, died on August 7, 2008, at his Oriole Avenue home.

Born in 1928 in what is now North Korea, he was the twelfth first son of a first son, in the thirty-seventh generation of the family Cha. His father was active in the Korean independence movement, and though his mother never learned to read or write, Cha credited her with passing on an astute mathematical mind.

Cha earned his medical degree from Yonsei University in Seoul in 1954, then fulfilled his military service in the Korean navy. He came to America in 1959, for doctoral studies in pharmacology at the University of Wisconsin. There he met his future wife, Mo Chung-Ja, a doctoral student in biochemistry. The pair married in 1960, completed their PhDs, had two of their three children, and moved to Providence in 1963, where they became the first Koreans to join Brown's faculty. They were married forty-eight years.

At Brown, Cha served as chair of the Department of Biochemical Pharmacology, the forerunner of today's Department of Molecular Pharmacology, Physiology and Biotechnology. A holder of two U.S. patents,



he was a leader in the field of cancer chemotherapeutics and tight-binding enzyme inhibitors, helping lay the basis for modern anti-retroviral therapy. He became the first tenured Korean professor at Brown, and with his wife served as unofficial mentor and elder to hundreds of Korean graduate and medical students at Brown and across the region.

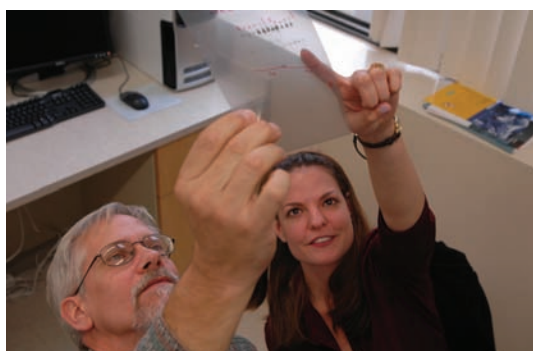
In his eulogy Cha's son, Jang-Ho, recalled: "My father never forgot what it was to leave one's homeland in search of education...He always supported those who had the courage to come across the ocean...to take the uncertain leap in search of not only knowledge but also the unknown."

Donations in Professor Cha's memory may be sent to Brown University, Box 1877, Providence, RI 02912.

CHA COURTESY MO-CHUNG JACHA; BOZZARIO COURTESY ALPERT MEDICAL SCHOOL

HE WAS YOUR ADVISOR, YOUR TEACHER, YOUR FATHER. SHE WAS YOUR DOCTOR, YOUR MENTOR, YOUR FRIEND.

.....



THEY MADE A DIFFERENCE IN YOUR LIFE.
NOW PAY TRIBUTE TO THEM BY MAKING
A GIFT TO THE BROWN MEDICAL ANNUAL
FUND IN THEIR HONOR. YOU'LL BE
MAKING A DIFFERENCE TO THE FOUR
HUNDRED BROWN MEDICAL STUDENTS
WHO BENEFIT FROM THE FUND.



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Your gift to the Brown Medical Annual Fund counts as
a gift to the Campaign for Academic Enrichment. So
be bold. Consider becoming a member of the Brown
Medical Society with a gift of \$1,000 or more. Your gift
– at any level – will help us reach our goal of \$830,000
by June 30. Return the enclosed envelope with your
contribution or give online at www.gifts.brown.edu.

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



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help the us help planet

Alpert Medical School is going green!

And you can help us do our part to conserve natural resources. This year, the Office of Alumni and Parent Programs is launching a more environmentally friendly communications strategy that will depend on electronic mail. Those who participate may still receive some printed materials, but we will make every effort to minimize hard-copy communications.

To be successful, we must have and maintain up-to-date email addresses, and to do so we need your help. Please email us at AlpertMed@brown.edu from your preferred account and let us know that you wish to receive electronic communications.

Alumni can also complete the "Fill Us In" form at <http://med.brown.edu/alumni>.

Questions? call 401 863 1635 or email bethany_solomon@brown.edu

Thank you in advance for your participation!