

Yale Medicine

Dean signs on for
another five years

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Rock 'n roll, genes
and mice

24

When scientists
become artists

30

spring 2009



200 Years of Medicine at Yale

Cast your votes for the most significant events and personalities of the school's first two centuries

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ON THE COVER In 1895 medical students posed for a photo at an unknown location. Some wrote the year on the soles of their shoes with chalk, while others showed macabre humor by posing with skulls.

Photograph courtesy of Cushing/Whitney Medical Library

INSIDE COVER When the Class of 1954 posed for a photo on Match Day in the Historical Library, the student body largely comprised white men, although women had been in the school since 1916. In that year Louise Farnam, Helen Scoville and Lillian Nye became the first women to gain admission to the medical school. One thing, however, stood in their way—the lack of proper bathroom facilities. Farnam’s father, Henry Farnam, a professor of economics at Yale College, paid to provide “suitable lavatory arrangements.” With a few exceptions, until the 1960s no class counted more than 10 percent women among its members. The Class of 1998 was the first at the School of Medicine with more women than men. In almost every year since then, women have outnumbered men and become a ubiquitous presence on the wards and in laboratories.

Photograph courtesy of Cushing/Whitney Medical Library

INSET At Commencement in 2008, not only were there more women than men in the graduating class, but the makeup of the student body reflected broader societal changes, with more students from racial and ethnic minorities and, in an increasingly commonplace sight, parents who brought their children to the ceremony.



TERRY DAGRADI

SPRING 2009

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On the Web yalemedicine.yale.edu

On our website, readers can submit class notes or a change of address, check the alumni events calendar, arrange for a lifelong Yale e-mail alias through the virtual Yale Station and search our electronic archive.



HOW TO REACH US

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Make premed courses more relevant

One of the benefits that are sure to result from making the premed curriculum more relevant to medical practice ["Reform of Premed Education Under Way," *Yale Medicine*, Winter 2009] is that it will attract more students into primary care.

Most medical schools are research-based and naturally favor students with outstanding aptitudes in basic science. This has produced many advances and well-trained specialists, and society has benefited immensely. The focus on specialization, however, has also led to a serious shortage of primary care doctors. The lack of access to primary care has prompted policymakers to consider giving authority to nurse-practitioners to practice some aspects of primary care independently.

In my 34 years of practice as a primary care doctor, I have found almost no use for the intense exposure I had in premed to calculus, organic chemistry, physics, invertebrate biology and physical chemistry. This is not to say that these courses were worthless, but they could have been abbreviated and simplified.

I can remember several students in my premed class who struggled through the basic sciences. Their grades in the sciences were average and they did not do well on the MCATs. Turned down by medical

schools at home, many attended foreign medical schools, as I did.

The point is that the move to make premed courses more relevant is a good one. Perhaps students with the abilities to be good general practitioners will not be weeded out and eventually the primary care physician shortage will be corrected.

Edward J. Volpintesta, M.D.
Bethel, Conn.

Thanks for the photos from a fan of the big dig

My 2-year-old son would like to thank you for the wonderful photos in your Winter 2009 issue ["As the Medical Center Grows, So Grows the City," *Yale Medicine*, Winter 2009]. He is a BIG fan of "dig, dig" and the ongoing projects at the medical center have given him much enjoyment over the past year.

Sandra J. Bishop-Josef, PH.D.
Assistant Director, Edward Zigler Center in Child Development and Social Policy; Associate Research Scientist, Child Study Center, Yale School of Medicine

Article on physical exam recalls Klatskin's skill

I just received the Winter 2009 edition of *Yale Medicine* and enjoyed a number of articles, including the roast of Yale's "pathological triple threat." Both I and my father, Wilbur G. Downs, M.D., M.P.H., much enjoyed our acquaintance with Michael Kashgarian, M.D. '59, HS '63.

There was considerable mention of the Wilbur Downs International Health Travel Fellowship Program, as well as a nice piece about Curtis Patton, PH.D., professor emeritus of epidemiology.

I myself am a fan of the *Oxford English Dictionary* and

I've read *The Professor and the Madman*. ... and so I enjoyed the article on William Minor.

Additionally, as a practitioner of ER medicine, I am acutely aware of how technology has served to erode our physical exam skills. The article by Jill Max was very apropos and I admit I had forgotten about the Adson maneuver. One of the professors of my era, Gerald Klatskin, M.D., could percuss out a liver edge or a heart border such that a student across the room could hear it.

Monty Downs, M.D. '70
Kapaa, Hawaii

Writing award for *Yale Medicine* editor

In February we learned that John Curtis, managing editor of *Yale Medicine*, had received the Award for Excellence in General Staff Writing from the Group for Institutional Advancement of the Association of American Medical Colleges. Curtis received the award for his feature article in the Winter 2008 issue, "On the Wards in Uganda." To report on an ongoing collaboration between Yale and Makerere University in Kampala, Curtis spent two weeks shadowing Yale attendings, residents and medical students as they worked alongside Ugandan colleagues at the government-run Mulago Hospital. He also accompanied them on field trips to camps for internally displaced persons in northern Uganda and to the fishing village of Kasensero on Lake Victoria, where Uganda's AIDS epidemic began.

World events bring change to Yale and to *Yale Medicine*

Changes—some long-planned, others arising of necessity—are in the air for *Yale Medicine*. For more than a year we've been contemplating a redesign of the magazine. In the nine years since the last redesign, as some sections and pages have begun to show their age, we have seen a need to bring variety and flexibility to them. Our first step will be to survey our readers to ask what you like—or don't like—about the magazine. Many of you should expect to receive a survey, by mail or e-mail, in the coming weeks.

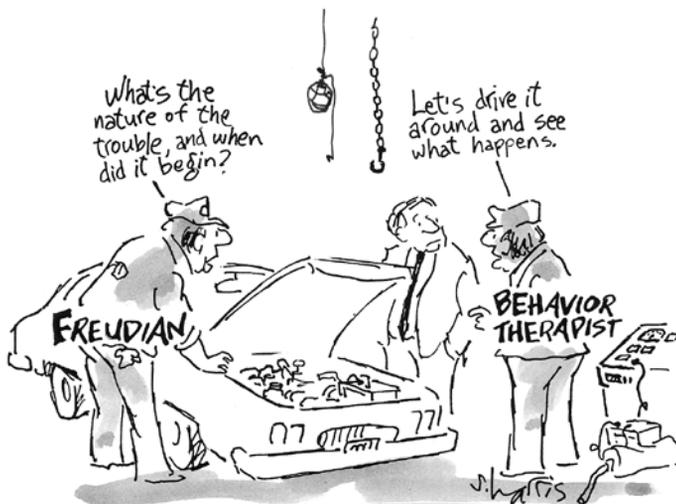
Then came word last December that the global economic crisis had reached the university, reducing its endowment by a quarter and requiring cuts in spending. In February came another announcement—the crisis was more severe than anticipated and belts would have to be pulled even tighter.

The School of Medicine is not immune to these events. To meet requests to reduce spending, we are scaling back on *Yale Medicine*. We are still looking at ways to cut back, but options include shrinking the magazine from our current size of 48 pages for the winter and spring issues and 64 for the autumn issue to a standard 32 pages for all three issues. Or we may cut back from three issues a year to two. These changes will drive our redesign; and sadly, we'll see the reduction or elimination of certain pages and sections.

Despite these changes we will continue to produce what we consider a first-rate publication, with compelling stories about the medical school and the issues and events that affect it. We hope that *Yale Medicine* will continue to engage you and help you to maintain your ties to the School of Medicine.

John Curtis
Managing Editor

SECOND OPINION BY SIDNEY HARRIS



yale medicine

*Alumni Bulletin of the
Yale University School of Medicine*
Spring 2009, Volume 43, No. 3

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Yale Medicine is distributed to alumni, faculty, students and friends of the School of Medicine, as well as to leaders in Yale University alumni activities.

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

Postal permit held by Yale University, 155 Whitney Ave., New Haven, CT 06520

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A first term marked by progress and growth

With kudos from Yale's president and his peers, Robert Alpern signs on for another five-year term as dean.

When Robert Alpern was appointed dean in 2004, his vision for the School of Medicine was to build programs in education, research and clinical care to rival the best in the world. "Yale already has many outstanding programs in these three arenas that are likely among the best, but no medical school is perfect in all aspects," he said in an interview from Dallas, where he was then dean of the University of Texas Southwestern Medical School. "We will identify our priorities for program improvement and then move forward."

Coming to Yale with a reputation for being at once easygoing and ambitious, the new dean rallied faculty, set priorities and vowed to build an already formidable institution into something

even greater. In the dozen years preceding his arrival, the medical school had slipped from third to 11th in the annual *U.S. News and World Report* survey and from third to eighth in funding by the National Institutes of Health. By March 2009, however, it had moved back up several rungs on both lists.

While Alpern discounts rankings as often-flawed indicators of quality, he recognizes that they reflect how the school is perceived. Much more important are the real accomplishments of the faculty; by that yardstick, he said, the school is "soaring." He credits his leadership team and says that the real proof of quality can be seen in the creation of new programs that lift Yale above its peers. Among them are multidisciplinary groups focused on cellular neuroscience, neurodegeneration and repair, stem cell biology, human and translational immunology, and cell biology. The school has also seen continued growth in areas where it already excelled, such as genetics, immunobiology and internal medicine.

Alpern has also expanded the clinical practice and the school's capacity to conduct clinical research. In 2006, the School of Medicine won a landmark grant under the NIH Clinical and Translational Science Awards (CTSA) Program. The \$57 million grant—Yale's largest ever—has been critical in building infrastructure linking the school's research base to the clinical practice.

One of the clinical initiatives is a new transplant program with outstanding liver and kidney components. A new chief of cardiology arrived last summer and is building the section's strength in interventional cardiology, heart failure, electrophysiology and basic research. The Smilow Cancer Hospital is set to open in the fall, and in February Alpern named a new director for Yale Cancer Center. Five biomedical institutes and three new core facilities are planned for the West Campus.

In announcing Alpern's second term in February, Yale President Richard C. Levin said that faculty and staff are enthusiastic in their support for the dean. Levin went on to say that Alpern had "transformed the school's relationship with Yale-New Haven Hospital (YNHH), a profound change that will have a lasting impact on the school's clinical mission."

"To take a school as good as Yale and make it better is exciting, and we've come a long way," Alpern said. "The reason I've signed on for another five years is to continue that ascent."

—Michael Fitzsosa



TERRY DAGRADI



Online: Yale Netcasts
Robert Alpern: Vision for the School of Medicine

In his five years as dean, Robert Alpern has overseen an expansion of the medical school's space, the addition of new programs and an increase in grants and contracts from the National Institutes of Health. In February, he was appointed to a second five-year term. "To take a school as good as Yale and make it better is exciting, and we've come a long way," Alpern said.

Yale obesity expert lauds New York tax dedicated to health programs

When Kelly Brownell, PH.D., published an op-ed piece in *The New York Times* in 1994 pioneering a tax on junk food, he became the focal point of a nasty controversy. Rush Limbaugh lashed out at the notion of the government telling people what to eat, and Brownell accumulated “a very thick file of angry letters. I got things from people saying, ‘We know where you live and we’re going to drive you right into the New Haven Harbor,’” Brownell said.

But he stood firm, and this year he has seen a glimmer of hope in New York Gov. David Paterson’s recent proposal for an 18 percent tax on non-diet soda and sugary beverages containing less than 70 percent real fruit juice.



Paterson’s plan is the highest tax ever proposed on food, and the estimated \$404 million in revenue it could generate in its first year would fund public health programs, including obesity prevention. If the proposal survives a comprehensive legislative and public review of Paterson’s budget, it could be adopted as early as April.

“It’s a whole new kettle of fish right now,” said Brownell, professor of psychology and epidemiology, and director of the Rudd Center for Food Policy and Obesity at Yale. He cited the troubled economy, mounting research linking soft drink intake to health issues and a growing concern about child obesity. “I think the social situation has changed enough that these taxes are going to happen at some point. Once the door opens, I would expect there will be a flood of others wanting to go through it.”

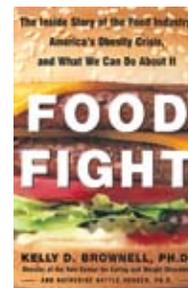
The tide may be turning already. While many New Yorkers and representatives of the beverage industry are highly critical of Paterson’s tax, Brownell has had calls from advocates in two other states that he said may soon go public with similar proposals.

Over the years, the “fat tax” has also surfaced as a “snack tax,” a “Twinkie tax” and a “miracle tax diet,” but rarely has it gotten off the legislative floor. California, Maine and Maryland all passed taxes of about 4 to 5 percent, and all later repealed them, mostly in response to food industry resistance. Smaller taxes on junk food in more than a dozen other states have been too insignificant to drive down consumption or spark a fight with the food industry, Brownell said.

New York’s proposed soda tax is exactly the kind of food tax Brownell



Kelly Brownell



favors, because the potential revenue would be dedicated to health-related programs, and he applauds Paterson’s bold approach. “I give the governor credit for proposing a large tax and not pussy-footing around. It makes sense to tackle this aggressively,” he said.

More than any other food category, sugared beverages have been linked to poor diet, a higher rate of obesity and increased risk of diabetes. Studies also suggest that an 18 percent increase in price would drive consumption down by about 15 to 18 percent. “If consumption of sugared beverages goes down, that could have a whopping effect on public health,” Brownell said.

—Kathy Katella



Online: Yale Netcasts
Kelly Brownell: Human Food Cravings

Internal medicine continues outreach with focus on “human infrastructure” abroad

For nearly three decades, the School of Medicine’s international health program has provided career-changing experiences for medical residents by sending them to developing countries. Now Yale is taking the Yale/Johnson & Johnson Physician Scholars in International Health Program a step further by developing “human infrastructure” at partner sites.

Rather than helping only American doctors develop a sense of global citizenship and commitment to caring for the poor, the program has made ambitious plans to build the long-term capabilities of its sites abroad. The program, which typically sent American doctors to as many as 15 foreign sites, now focuses on only six. A sense that Western institutions had profited asymmetrically from a brain drain from developing countries—a realization prompted in part by

increased international communication among researchers in the AIDS era—drove the change.

“It became clear that we as faculty and Yale as an institution have an obligation ... to people all over the world,” said Asghar Rastegar, M.D., new director of the international health program, which has partnered with Johnson & Johnson since 2001. Based in part on Rastegar’s own experience as a faculty member at Shiraz University in Iran, the redesign emphasizes bilateral benefits and long-term in-depth commitment. Physicians in the program now serve in the host country as both learners and teachers; and they bring equipment and materials with them, helping the site itself expand its capacity to care for the sick. In turn, the host countries send physicians on learning trips to the United States.

The pilot program, developed by Majid Sadigh, M.D., associate professor of medicine, is in Kampala, Uganda, at Mulago Hospital, the teaching hospital of Makerere University. The hospital has a ward staffed full time by Yale faculty and residents working side by side with their colleagues from Makerere, and sends physicians to New Haven for specialty training. Fred Okuku, M.D., a resident physician, spent six months at Yale learning to perform mammograms and ultrasounds, then



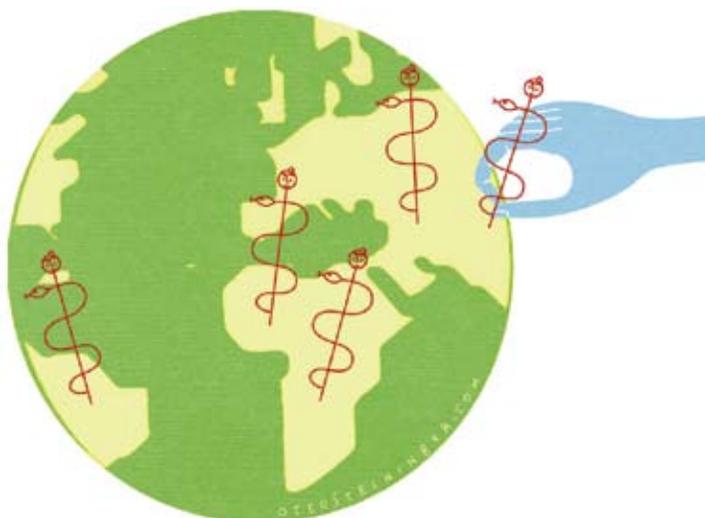
Asghar Rastegar

returned to Uganda with the training and equipment—a mobile mammography van—to diagnose early-stage breast cancer. The inexpensive cancer treatment available at Mulago—surgery—will save lives that would otherwise have been lost to a late diagnosis.

Though the program has slimmed from 15 sites to just six, those six—in Eritrea, Honduras, South Africa, Uganda, Liberia and Indonesia—are being transformed by the new philosophy. At Tugela Ferry, South Africa, a site directed by Gerald H. Friedland, M.D., professor of medicine, and devoted to research on and care of patients with HIV and tuberculosis, the husband-and-wife team of Scott Heysell, M.D., M.P.H., and Tanya Thomas, M.D., is spending a year at the local hospital. In war-ravaged Liberia, Yale has joined five American medical schools in a collaboration with the John F. Kennedy Medical Center. And Rastegar is working with Eritrea’s first medical school to develop an internal medicine residency there.

The international health program outreach continues to expand, sponsoring classes in international medicine for medical, nursing and physician associate students interested in global health. These projects, said Michele Barry, M.D., HS ’77, a longtime co-director of the program who stepped down in March to become senior associate dean for global health at Stanford University, will bring fresh hope to caregivers in the sites’ low-resource communities. “I think there is a role for us to really stop the brain drain—to stop people like Fred Okuku from thinking he only has a hospice,” Barry said.

—Jenny Blair



Recommendations for rest periods for residents meets with skepticism

For decades, doctors in training have endured long hours and sleepless nights during residency. Due to concerns that their resultant fatigue might harm patients, in 2003 an 80-hour limit on weekly duty hours, along with a 30-hour limit on work periods, became mandatory for hospitals approved by the Accreditation Council for Graduate Medical Education. But a recent report by the Institute of Medicine (IOM) recommends stricter duty-hours rules that would allow residents more rest, while calling for stronger enforcement of existing rules.

Issued in December, the IOM report is the work of a committee of physicians and sleep experts that examined studies on the relationships among duty hours, sleep physiology and patient safety, including some research done since the 2003 changes. The committee concluded that the evidence was “nascent ... but sufficient to recommend action now.” It proposed, among other changes, that residents working 30-hour periods pause on or before the 16th hour for five hours’ rest, and that they be granted an uninterrupted 48 hours each month to catch up on sleep. The 80-hour weekly maximum would remain in effect, as would such other 2003 rules as 10 hours off after a work day.

Yale educators, however, have reservations about the report. Peter N. Herbert, M.D. ’67, HS ’69, senior vice president of medical affairs at Yale-New Haven Hospital, called it “disappointing,” citing the scarcity of evidence that scheduling of duty hours affects patient safety. “It reflected, to many of us, a confusion about what their purpose was,” Herbert said. “It would probably be much more worthwhile to look at what work hours and schedules do to resident education.”

“We’re certainly philosophically on board with believing that rested, clear-thinking people provide better care,” said Stephen J. Huot, Ph.D. ’81, M.D.

’85, HS ’87, chair of the primary care internal medicine residency. But, he said, these well-intended changes might actually jeopardize patients, since they would require more frequent handoffs of patient care and might diminish access to care at some medical centers.

Academic neurosurgeons greeted the report with dismay. Neurosurgical operations last longer than other types of surgery, said Dennis D. Spencer, M.D., HS ’77, chair of the department, requiring longer and more flexible duty hours. “The 16-hour shift with the 10-hour-at-home rule means that our chief residents will never be able to come back to the hospital and see patients they may have operated on, or they will be unable to come to the hospital the next day,” Spencer said. “They will never learn responsibility for their patients and they will erode the mentor/student bond with attending faculty who are attempting to give them more responsibility. This destroys one of the main competencies we are supposed to be teaching—professionalism.”

Though the IOM committee estimated that the cost of adopting its recommendations could reach \$1.7 billion annually, it recommended that these changes be adopted within two years.

Whether or not the new rules are adopted, the culture change alone implied by a 16-hour work period—a move toward shift work—has some physicians worried. Continuity of care and teaching a physician to “own” a patient, said Dean Robert J. Alpern, M.D., Ensign Professor of Medicine, are valuable lessons. “This focus on work hours has removed that culture from medicine,” he said. “Nobody seems to be concerned about where we’re headed with this loss in continuity of care.”

“We need to figure out how to continue to instill a sense of complete responsibility for the care of your patient—putting the patient’s needs above your own needs and do so in an educational system that allows you to still function as a person,” said Huot.

—J.B.

et cetera ...

MEDICAL CAMPUS GETS GREEN AWARD

The Amistad Street Building has received a gold “greenness” rating from the U.S. Green Building Council’s Leadership in Energy and Environmental Design program. Among the “green” features is a 7,500-gallon tank that recycles storm water collected from the roof. Additional features include laboratory cabinetry made from wood produced in sustainable forests, a heat recovery system and energy-efficient bulbs and occupancy sensors that help cut electricity use. Recycling of renovation debris reduced construction waste by 70 percent.

The project, which provides laboratory space for the Interdepartmental Program in Vascular Biology and Therapeutics, the Yale Stem Cell Center and the Human and Translational Immunology Program, was built around the existing shell and core of the building.

“This project presented all the challenges one typically finds when striving to build sustainably in an existing building,” said Virginia Chapman, director of construction and renovation for the School of Medicine’s facilities office. “But we made it work—and work rather well.”

—Charles Gershman

ECONOMIC SITUATION WORSENS FOR YALE

In an e-mail to the Yale community in February, President Richard C. Levin said the deteriorating economic situation would require budget cuts beyond those he had called for in December. “The mounting evidence suggesting a prolonged recession has caused us to recognize that we need to take a more aggressive approach to budget reductions for the coming fiscal year,” Levin wrote.

Levin called for cuts in all 2009-2010 budgets by an amount equal to 7.5 percent of the salaries and benefits of all non-faculty staff and a 7.5 percent reduction in non-salary expenditures, up from the 5 percent he had called for in December. These measures could save \$37 million in next year’s operating budget, Levin said. But, he added, “... if external conditions deteriorate significantly, we may be required to take further action next year.”

—John Curtis

Pediatric AIDS clinic reports success

Drug protocols and other measures prevent HIV-positive births in New Haven for more than 12 years.

Born HIV-positive, for 20 years “John” relied on the Yale Pediatric AIDS Clinic to keep him healthy. That meant visits every three months and treatment that was literally hard to swallow. But John says he “loved every minute” of his time at the clinic because he could rely on the staff, even when the problem was not medical. For example, the clinic helped him find housing as a teen when his mother left the state.

Now a junior at Southern Connecticut State University, he is making plans for graduate school. He calls to let everyone

at the clinic know what’s going on in his life, but he gets his HIV care at an adult clinic, where he is likely to visit three times a year. Increasingly sophisticated blood testing lets doctors fine-tune his medications to prevent resistance to antiretrovirals.

As patients like John transition into adult care, few new cases replace them. No woman known to be HIV-positive has passed on the virus to her baby in New Haven since 1996. The protocols for preventing mother-to-child transmission are so effective that the only HIV-positive infants delivered in the city over the past 13 years were born to mothers who had not been not diagnosed themselves.

“We have literally been putting ourselves out of work,” said Warren A. Andiman, M.D., FW ’76, professor of pediatrics and epidemiology and public health, and medical director of the Pediatric AIDS Program. An infectious disease specialist, Andiman began caring for HIV-positive infants in 1982. In the first few years, his young patients died protracted and miserable deaths, often by age 6. “There’s no way to describe what it was like,” he said.

Today mother-to-child transmission is a rarity in the developed world. Nationwide, the rate is less than 2 percent, which Andiman attributes to “will and money.”

Widespread HIV testing allows doctors to identify women who may pass the virus on to their babies. Any HIV-positive pregnant woman in the area gets referred to Yale’s High-Risk Maternity Program or a parallel program at the Hospital of St. Raphael, both of which work closely with the Pediatric AIDS Program. Such measures as giving mothers antiretrovirals during the pregnancy

and administering AZT to mothers during labor and to newborns have proven successful, along with, in certain circumstances, performing caesarean sections and discouraging breast feeding.

Connecticut mandates that every pregnant woman be offered HIV testing twice. She can be offered testing again during labor. If she refuses, a newborn can be tested over her objections. In practice, almost all the mothers welcome testing.

During an HIV-positive woman’s pregnancy, older children or sex partners may be diagnosed and get treatment. The woman will be connected with the adult AIDS clinic and social workers will address a wide range of practical and emotional issues. “It’s a sort of seminal period, a moment when all kinds of worthwhile stuff can happen,” said Andiman.

So much good stuff has happened at the Pediatric AIDS Clinic that Andiman expects it to close in the next couple of years. The few remaining patients can be transitioned to the Pediatric Infectious Disease Clinic. “AIDS is an infectious disease just like many other infectious diseases,” Andiman said.

—Colleen Shaddox



JOHN CURTIS

Pediatrician Warren Andiman has been treating children with AIDS since the earliest days of the epidemic. Thanks to a protocol he has established, not a single baby has been born HIV-positive in New Haven in more than 12 years.

A revitalized trauma section increases staff and improves care in emergency cases

On February 16, 2007, Quinnipiac University senior Benjamin Shapiro was driving down a secondary road in Hamden, Conn., at about 1 a.m. when his car slid across four lanes of traffic, crashed through a chain-link fence, flipped over a concrete barrier, slid down an embankment and landed in the Mill River. He spent the next 20 minutes submerged in icy water.

“When they pulled him out of the water there was no heartbeat, no pulse, nothing,” said Shapiro’s stepmother, Joan Abrams. Shapiro had suffered a brain injury, the bones in the left side of his face were crushed and his left eyeball was hanging by a tendon. Doctors put his chances of survival at well below 10 percent.

The Department of Surgery’s Section of Trauma, Surgical Critical Care and Surgical Emergencies, which was recently revamped under the direction of Kimberly A. Davis, M.D., was prepared to deal with an emergency of this magnitude.

“Everyone who is a full-time member of this section is board-certified or eligible in both general surgery and surgical critical care,” said Davis, who took over as section chief in June 2006. “With attending-level surgeons in the hospital at all times, we can take care of anything that comes our way, 24/7.” This also means faster evaluation and response times and improved communications between caregivers as well as with family members.

“With Kim’s appointment, our Level I trauma center has become a

comprehensive acute care service, where physicians are able to function in all three areas: urgent general surgery, critical care and trauma, and that has made a huge difference in our service to the community,” said Tucker Leary, vice president of administration at the hospital.

Under Davis, the number of surgeons has nearly doubled, to seven full-time surgeons providing trauma, critical care and emergency surgery. Davis is planning to fill an eighth position soon. She also initiated a weekly meeting to review cases and discuss what worked and what might have been handled differently.

And the investment is paying off. The year before Davis’ arrival, the section evaluated 2,550 patients and admitted 1,650. In 2007-2008, 3,800 trauma patients were evaluated and 2,400 were admitted. The survival rate of trauma center patients is 95.6 percent, above the national average of 94 percent.

One of those survivors is Shapiro, who spent nine days in a medically induced coma, followed by surgery to rebuild his face and save his eye. He was able to return to Quinnipiac as a full-time student and graduated with his class that May.

“I look back on the day of my accident and as horrible as it was, I view it as the single best day of my life,” he said. “Now, whenever someone says to me, ‘How are you doing?’ I can always say, ‘Great.’”

—Jennifer Kaylin



A newly revamped trauma section has seen a doubling of the number of surgeons who provide trauma, critical care and emergency surgery and an increase in the number of patients evaluated and admitted.

et cetera . . .

LOST IN TRANSLATION

Even as the number of Americans with limited English-language proficiency has continued to grow, many physicians try to get by with their own limited foreign-language skills or by relying on a patient’s friend or family member, according to research conducted in part by the School of Public Health.

The study, published online in the *Journal of General Internal Medicine* in December, found that increasing the use of interpreters by hospital physicians will require “substantial” changes in hospital practice. “Residents found it difficult to change their practice, despite misgivings about the quality of care provided,” said Lisa Diamond, M.D., M.P.H., a Robert Wood Johnson Foundation Clinical Scholar and lead author of the study, who is now at the Palo Alto Medical Foundation Research Institute in California. Research has shown that language barriers can lead to decreased access to preventive services, poor understanding of instructions for medications, longer hospital stays and an increased risk of medical errors and misdiagnoses.

—John Curtis

ELDERLY WANT SAY IN TREATMENT

Elderly patients with multiple medical conditions want to be involved in their treatment decisions, Yale researchers reported in the *Journal of the American Geriatrics Society* in October.

About 65 percent of older Medicare beneficiaries have at least two chronic conditions, and 24 percent have four or more. These patients face what are called “competing outcomes”—complex choices presented when the treatment for one condition could worsen another. Medicine for elevated cholesterol, for example, may cause leg cramps that prevent a patient from doing exercises that reduce arthritis symptoms.

Study author Terri R. Fried, M.D., associate professor of medicine (geriatrics), and her team conducted 13 focus groups with 66 people age 65 and older who had an average of five chronic conditions and took an average of seven medications. When faced with competing outcomes, Fried said, “They chose the treatment option that would maximize the likelihood of their most desired outcome.”

—J.C.

A molecule that puts the brakes on appetite

Yale scientists find a family of phospholipids that curb the desire to eat in rats and mice.

That heaping pile of golden crisp French fries looks delectable, but polishing off the plate may be a tall order. New research from Yale scientists suggests that a family of phospholipids tells the brain when an animal has had its fill of fat—findings that help explain the physiologic mechanism that wards off a deep-fried feeding frenzy. And these phospholipids, called N-acylphosphatidylethanolamines, or NAPES, may hold the key to new treatments for obesity.

The human body has several built-in systems that keep us from stuffing

ourselves silly. Leptin, for example, tells the brain to put the brakes on eating when fat stores are abundant. Now a team led by Gerald I. Shulman, M.D., PH.D., the George R. Cowgill Professor of Physiological Chemistry, professor of medicine and of cellular and molecular physiology and a Howard Hughes Medical Institute investigator, has identified a new class of appetite-suppressing molecules—the NAPES—that become synthesized in rats after a high-fat meal, as reported in November in the journal *Cell*.

The researchers teased apart the function of NAPES by synthesizing the most physiologically abundant NAPE and injecting it into rodents. They found that the higher the concentration of the phospholipid, the less the rodents ate. Furthermore, like someone sitting back after a feast, the NAPE-injected mice

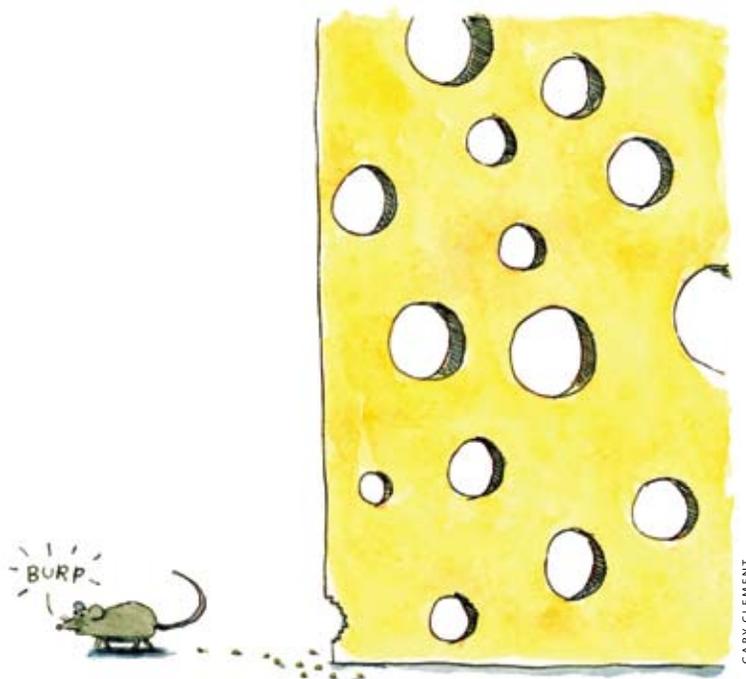
lounged about and groomed themselves even though they ate only a mini-meal.

Shulman's group discovered that NAPES, like certain other chemicals that help to control appetite, exert their effects via the central nervous system. They appear to be synthesized in the small intestine after a high-fat meal but they then get dumped into the blood and lymphatic system, putting them on a fast track to the brain. When Shulman's team injected nanomolar amounts of NAPE directly into rodent brains, it slashed the animals' appetites by more than 50 percent and shut down the activity of NPY neurons, which stimulate appetite.

On a roll, the researchers decided to treat the rats with NAPE for five straight days. They found that the rodents ate 30 percent less food and shed a significant amount of weight.

The race is now on to see whether these rodent findings translate to humans. Shulman's team is investigating NAPE regulation in humans following feeding, and the researchers soon plan to treat monkeys with NAPES to observe the effects on appetite. Provided those studies pan out, Shulman is eager to see whether NAPES can reduce food intake in humans. If they do, NAPES could serve as the basis of novel appetite-suppressant or obesity-fighting drugs. "Obesity is a major health problem, and we have very few treatments available," Shulman said. "We are always looking to better understand appetite regulation, and NAPES may be a new physiological regulator of appetite."

—Kara A. Nyberg



“Dry cleaning” effect—research shows how mice, and people, work on autopilot

By watching mice navigate a custom-designed swimming pool, Christopher Pittenger, M.D., PH.D., assistant professor of psychiatry, has discovered an ongoing competition between one part of the brain devoted to active seeking and another part devoted to mindless cruising. These two sections of the brain, his research shows, can inhibit each other, depending on the task at hand or, in this case, at paw. The competition, which likely occurs in people as well, may explain why it can be so hard to alter set routines, and could explain the power of such unwanted habits as drug addiction or obsessive-compulsive behaviors.

Pittenger’s study found that two parallel learning and memory systems that reside in different parts of the brain can block each other’s functions. The striatum powers up when—as if on autopilot—we embark on a well-known route like driving to work. The hippocampus comes into play when we need to think about where we’re going, as when we’re looking for a new address or detouring for an errand. The study found that when one system is impaired, the other is enhanced: in mice, injuring the striatum made the animals worse at locating a visual target in a water maze, but better at more active hippocampus-based navigational skills, and vice versa.

This reciprocal inhibition may explain the difficulty many people have in breaking from an entrenched routine. “This is why I cannot, for the life of me, remember to drop off my dry cleaning on the way to work,” said Pittenger, whose findings were published in October in *Proceedings of the National Academy of Sciences*.

“When you have driven the same route many times and are doing it on autopilot, it can be really difficult to change. If I’m not paying enough attention right at that moment, if I am

thinking about something else, I just sail right on by.”

On a more serious note, the findings may also help explain the behavioral peculiarities seen with some brain diseases. Alzheimer disease, for example, destroys hippocampal function. That may be why many people with this disease fall back on old behaviors, like repeatedly returning to a previous address, thinking it is still home. Other diseases, including obsessive-compulsive disorder (OCD) and Parkinson disease, involve striatal malfunction. Pittenger’s new results emphasize that this striatal malfunction is likely to lead to changes in the function of the hippocampus, too, which may either compensate for or exacerbate the symptoms of the disease.

Understanding the connections between memory systems may offer new ways to treat serious behavioral problems. “A lot of psychiatric diseases are characterized by recurrent, maladaptive patterns of thought or behavior,” says Pittenger, who is also director of the Yale Obsessive-Compulsive Disorder Research Clinic. “People with OCD or drug addiction just keep doing the same thing and can’t seem to stop, no matter how hard they try.”

Treatment for OCD often includes cognitive behavioral therapy, which works by engaging a more reflective thinking mode to try to control automatic behaviors. Pittenger speculates that the process may work by recruiting one brain region to overcome an excess in the other. If so, it might be possible to develop drugs to make cognitive therapy more effective by enhancing or balancing the activities of the striatum or hippocampus.

It’s quite a leap from mice paddling in a pool to human disease, Pittenger said, but learning how basic normal memory systems work in animals is an important first step.

—Pat McCaffrey

et cetera . . .

BIOMARKER FOR LUNG CANCER RISK

A genetic variation could explain why some people have a greater risk of developing lung cancer, Yale scientists reported in the journal *Cancer Research* in October.

“Only 10 percent of smokers will develop lung cancer in their lifetime, and genetic testing to determine the population of smokers who are most predisposed to develop the disease is needed to help guide better evaluation for these people,” said Joanne B. Weidhaas, M.D., PH.D., assistant professor of therapeutic radiology at Yale. She was senior author of the study, in collaboration with Frank Slack, PH.D., associate professor of molecular, cellular and developmental biology.

“We looked for the effects of genetic variations within a human oncogene known to be affected by tiny RNA molecules called micro-RNAs,” said Slack, explaining their discovery of the biomarker. These variations, called single nucleotide polymorphisms, predicted a significant increase in non-small-cell lung cancer risk in people with a moderate smoking history as well as in nonsmokers.

—John Curtis

YALE PAPER AMONG BEST OF 2008

An article by Yale scientists on the formation of cell membranes has been named one of the top scientific papers of 2008 by the journal *Nature*.

The paper, published in *Cell* in March 2008, explored how cells shape their membranes into tubes, spheres and other curved structures that they need in order to move, communicate and reproduce. Scientists including Vinzenz M. Unger, PH.D., associate professor of molecular biophysics and biochemistry, M.D./PH.D. student Adam Frost and Pietro De Camilli, M.D., the Eugene Higgins Professor of Cell Biology and Neurobiology, established how banana-shaped proteins called F-BAR domains form curved scaffolds that allow cell membranes to assume those forms.

Using a combination of cryoelectron microscopy and cell biology experiments, the team found that F-BARS accumulate side by side on flat membranes until attractive forces cause them to turn onto their tips en masse and pull the now-curved membrane into shape.

—Peter Farley

Uncovering the toxins in our daily lives

A new book by a lecturer in public health describes what's safe and what's not in household products.

Toxicologist Gary Ginsberg, PH.D., has good news about the environmental contaminants we encounter in our daily lives. "One of the major myths is that the environment is worse than it's ever been," said Ginsberg, the senior toxicologist at the Connecticut Department of Public Health and a lecturer at the Yale School of Public Health. "As a matter of fact, a lot of things are better now than they ever were."

For instance, pesticides used in farming are less hazardous and less persistent than the banned chemicals of the 1950s, 1960s and 1970s. Paint and gasoline no longer contain lead. Asbestos has been phased out of building materials, and intact asbestos can be safely left in place. And although a staggering number of people are worried about mold in homes and schools, Ginsberg said that humans have lived with mold for millennia, and the fungus is unlikely to cause lung damage. "It's a crop you don't want to grow in your house, but it's something you shouldn't freak out about."

Still, research and reporting regularly bring to light serious risks from toxic chemicals, said Ginsberg, "and the headlines don't answer the specifics of your situation." To help the public distinguish between major and minor risks, Ginsberg collaborated with health department colleague Brian Toal, M.S.P.H., to write a guide, *What's Toxic, What's Not*, published in 2006.

"Rather than answer questions one phone call at a time, we decided we would try to put it all together in a somewhat encyclopedic but accessible way," said Ginsberg. He and Toal considered a range of potential hazards: hormones in hamburgers, carcinogens in bubble bath, toxic fumes from overheated Teflon and volatile chemicals in toilet cleansers and drain uncloggers. (Ginsberg said that using harsh cleaners is "like using the atom bomb to clean the bathroom." He recommends hot water and detergent instead.) The authors discuss power lines, toxic waste dumps and cancer clusters.

Ginsberg cites the top five risks Americans face as radon gas, indoor air pollution, mercury in fish, lead paint and carbon monoxide. The book advises readers to test for carcinogenic radon gas at home and to vent appliances and woodstoves properly, to burn only dry hardwoods and to clean chimneys regularly. Because most fish contain mercury, the book suggests no



MICHAEL KODAS

Gary Ginsberg is the co-author of *What's Toxic, What's Not*, an accessible guide to the risks of common household products.

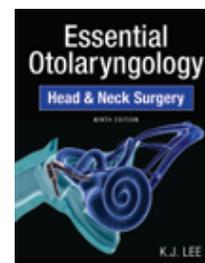
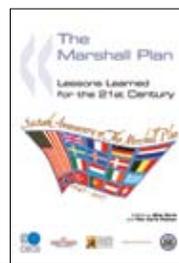
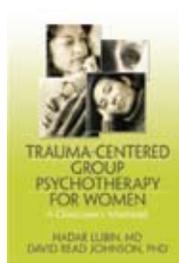
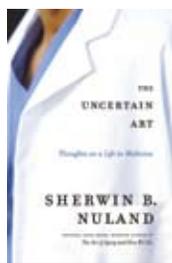
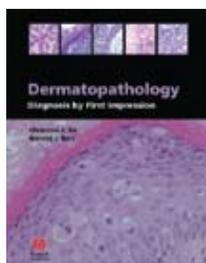
more than two fish meals per week, with only one containing farmed fish. People living in houses more than 30 years old should watch for chipping paint, especially on windowsills. Occupants of houses built before 1987 should test their drinking water for lead, and all children should get blood tests for lead at ages 1 and 2.

Ginsberg himself buys such products as dish soap and shampoo at the health food store rather than the supermarket. Dangers in supermarket items include volatile organic compounds in cleaning products as well as reproductive toxins and carcinogens in cosmetics. "There's no gatekeeper at the supermarket, and the Consumer Product Safety Commission doesn't regulate these things," Ginsberg said.

With each new headline in the media, Ginsberg gets new questions. For example, consumers have begun worrying about plastic baby bottles and water bottles containing Bisphenol A (BPA), a chemical used since the 1950s to make polycarbonate plastics that was developed in the 1930s as a synthetic estrogen. Recent animal studies have shown that BPA can disrupt the endocrine system. The Canadian government announced in October 2008 that it is banning polycarbonate baby bottles containing BPA. To provide information about such emerging issues, Ginsberg has established a website: whatstoxic.org. He also hosts a radio show, *Greener Living with 'Dr. G.'* which can be heard (locally or on the Internet) on WTIC-AM, Saturdays from 4 to 6 p.m.

—Cathy Shufro

Bookshelf focuses on books and authors affiliated with the School of Medicine. Send suggestions to Cathy Shufro at cathy.shufro@yale.edu.



High Risk Obstetrics: The Requisites in Obstetrics and Gynecology

by Edmund F. Funai, M.D., associate professor of obstetrics, gynecology and reproductive sciences, Mark Evans, M.D., and Charles J. Lockwood, M.D., chair and the Anita O'Keefe Young Professor of Obstetrics, Gynecology and Reproductive Sciences (Elsevier) This volume offers guidance for assessing and managing high-risk pregnancies. The book includes tables that present differential diagnoses and recommendations on lab values and treatments. Case studies and illustrations accompany coverage of antepartum care, medical complications of pregnancy, fetal disorders, fetal surveillance, intrapartum complications and puerperal disorders.

Stoelting's Anesthesia and Co-Existing Disease, 5th ed.

by Roberta L. Hines, M.D., HS '77, chair and the Nicholas M. Greene Professor of Anesthesiology, and Katherine E. Marschall, M.D., assistant professor of anesthesiology (Elsevier) This edition has been updated to reflect the latest information to help clinicians avoid or manage complications stemming from pre-existing medical conditions. Organized by

disease, the new edition provides guidance on definition, current pathophysiology and pre-, intra- and postoperative factors of the disease process, anesthetic judgment and management. It provides case studies that exemplify how to overcome a wide range of challenges, and it examines specific anesthesia considerations for special populations, including pediatric and geriatric patients.

Motion Preservation Surgery of the Spine: Advanced Techniques and Controversies

by James J. Yue, M.D., associate professor of orthopaedics and rehabilitation, Rudolph Bertagnoli, M.D., Paul C. McAfee, M.D., and Howard S. An, M.D. (Elsevier) This book provides an introduction to motion preservation surgery and discusses surgical considerations and cervical total disc arthroplasty. The text examines the advantages and disadvantages of the full range of nonfusion technologies and presents step-by-step, illustrated operative guides to achieve optimal outcomes. The book is accompanied by a DVD featuring three hours of surgical video.

Dermatopathology: Diagnosis by First Impression

by Christine J. Ko, M.D., assistant professor of dermatology and pathology, and Ronald J. Barr, M.D. (Wiley-Blackwell) This guide introduces a simple and effective way to approach a slide and focuses on a selection of commonly tested entities, showing low- to high-power views. Major differences among diagnoses that are sometimes confused are emphasized on "Key Differences"

pages. The book contains minimal text and should be used as a companion to dermatopathology textbooks and as a pictorial reference and study tool.

The Uncertain Art:

Thoughts on a Life in Medicine

by Sherwin B. Nuland, M.D., clinical professor of surgery (gastroenterology) (Random House) This volume is a collection of essays about the mix of expertise, intuition, sound judgment and chance that plays a part in a doctor's practice and life. Drawing from history and his own experiences, Nuland includes topics ranging from the primitive procedures doctors once practiced with good intentions—such as grave robbing and prescribing cocaine as an anesthetic—to gene therapy, the adoption of Eastern practices like acupuncture and the complex moral and ethical quandaries confronting healers that arise from such innovations as cloning.

Trauma-Centered Group Psychotherapy for Women: A Clinician's Manual

by Hadar Lubin, M.D., assistant clinical professor of psychiatry, and David R. Johnson, Ph.D., associate clinical professor of psychiatry (Routledge) This manual is a theory-based, field-tested model of group therapy for traumatized women. It includes

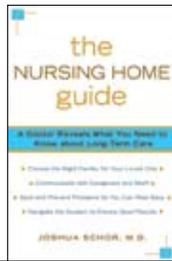
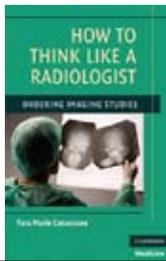
clinical examples, a session-by-session guide for clinicians and a workbook for clients. Topics include managing traumatic re-enactments, a developmental theory of trauma and post-traumatic stress disorder and guidance in handling difficult treatment and clinical situations. The authors also discuss the use of testimonials and ceremonial structures to heighten the therapeutic impact.

The Marshall Plan: Lessons Learned for the 21st Century

edited by Eliot Sorel, M.D., FW '75, and Pier Carlo Padoan, M.D. (OECD Publishing) This book examines the historical, diplomatic, economic and strategic aspects of the European Recovery Program—popularly known as the Marshall Plan—that brought Europe out of the chaos, hunger, poverty and desperation of World War II. Contributors address 21st-century applications of lessons learned from the Marshall Plan.

Essential Otolaryngology: Head and Neck Surgery, 9th ed.

by K. J. Lee, M.D., associate clinical professor of surgery (otolaryngology) (McGraw-Hill) This otolaryngology primer delivers the latest critical information to help treat conditions involving the head and neck, such as sinusitis, sensory disorders, cancer and sleep disorders. This edition contains new chapters on cysts and tumors of the jaw, TNM classification in otolaryngology, head and neck surgery, and malignant melanoma.



Non-Invasive Management of Gynecologic Disorders

edited by Aydin Arici, M.D. '50, professor of obstetrics, gynecology and reproductive sciences, and Emre U. Seli, M.D., assistant professor of obstetrics, gynecology and reproductive sciences (Informa Healthcare) This text provides information on currently available options for gynecologic disorders suitable for nonsurgical management. It offers guidance to physicians on how and when to choose more conservative modalities and how to differentiate between the variety of treatment options available. The authors take an evidence-based approach to topics including management of ectopic pregnancy, pregnancy loss and termination, infertility, chronic pelvic pain, endometriosis and dysfunctional uterine bleeding.

How to Think Like a Radiologist: Ordering Imaging Studies

by Tara Marie Catanzano, M.D., assistant professor of diagnostic radiology (Cambridge University Press) This pocket guide provides guidance in choosing which type of imaging study best answers the clinical question posed. The book addresses imaging studies by modality, body region and type of study in bulleted outline format. It discusses general considerations for each modality—including advantages and

disadvantages—as well as patient preparation and requirements for each type of examination.

The Nursing Home Guide: A Doctor Reveals What You Need to Know About Long-Term Care

by Joshua D. Schor, M.D. '85 (Berkley/Penguin) The author guides the reader step by step through the process of placing a loved one in a nursing home or long-term care facility. He covers such topics as questions to ask about medications, meals and activities; deciding whether assisted living may be a viable alternative; determining whether a family member needs long-term or subacute care; and knowing your rights and getting the information you need.

The descriptions above are based on information from the publishers.

SEND NOTICES OF NEW BOOKS TO Cheryl Violante, *Yale Medicine*, 300 George Street, Suite 773, New Haven, CT 06511, or via e-mail to cheryl.violante@yale.edu

Library initiative links Third World doctors and researchers to journals

Just seven years ago, clinicians and scientists in the developing world could get hold of—on average—only two international medical journals, according to the World Health Organization (WHO). And in the poorest countries, fewer than half of the doctors and researchers could put their hands on a single journal.

Now, through a WHO program called HINARI, they have electronic access to 6,000. The program makes journals and databases available to health care professionals in 3,600 hospitals, medical schools and other institutions in 108 countries from Afghanistan to Zimbabwe. Subscription rates range from nothing in the poorest countries to \$1,000 annually per institution in more affluent countries.

Yale librarians including Kimberly Parker, M.I.L.S., have played crucial roles in developing HINARI. Parker headed the electronics collection for Yale's library system when the project was conceived in 2001; researchers from resource-poor countries had told WHO officials that without access to biomedical information they could not be members of the international research community. Within months, several major publishers had agreed to donate access to their journals, and HINARI was launched in January 2002. Last spring Parker took over as program manager of HINARI in Geneva.

Yale librarians continue to contribute. When a researcher in Ecuador peruses a journal, or a gynecologist in Vietnam reads about screening for anemia, each depends upon the support of Yale librarian Daniel Dollar, M.I.S., and his staff, who make sure that links work and add journals and databases to the ever-expanding system. "They actually have access to more journals than we do," said Dollar.

Because of HINARI, Parker said, more scientists "are contributing to the global conversation in important ways, often on topics the rest of us are ignoring."

Senegalese urologist Mohamed Jalloh, M.D., depends on HINARI to search the medical literature and find such clinical information as drug dosages. Just three years out of residency, Jalloh says he has had 13 articles published. "It is very important for us to have access to good-quality peer-reviewed publications," he said.

—Cathy Shufro

In Circulation focuses on activities at the Cushing/Whitney Medical Library. Send suggestions to Cathy Shufro at cathy.shufro@yale.edu.



LESLIE CURRY

Connecticut lags in long-term care for elderly and disabled

Connecticut has made inroads into shifting long-term care for the elderly and people with disabilities from institutions to community-based programs, but according to a Yale researcher it lags behind many other states. "Connecticut is making important progress, but there's a long way to go," said Leslie Curry, PH.D., M.P.H., a research scientist at the School of Public Health who spoke at a session in the Aging Research Seminar Series in February.

Spurred by a 1999 U.S. Supreme Court ruling, states have begun to shift long-term care from nursing homes to community-based options, largely because nursing home care is about twice as costly as community-based care and because people prefer community settings. With \$56 million in federal grants, Connecticut has increased the proportion of Medicaid clients receiving community-based care from 46 percent in 2002 to 51 percent in 2006, Curry said.

Nationally, though, Connecticut "is not a leader," and Curry said the state needs to streamline its organization, increase community-based options and enhance consumer-directed models of care in order to reach its goal of having 75 percent of Medicaid recipients who need long-term care in community-based settings by 2025.

—John Dillon



CHRIS BEYRER

Zimbabwe cholera outbreak has roots in corruption

When cholera struck Zimbabwe last summer, international aid poured into the African country. Despite those resources, however, fatalities increased among those infected. "One in 20 people was dying, and 80 percent of those deaths were preventable," said Chris Beyrer, M.D., M.P.H., professor of epidemiology at the Johns Hopkins Bloomberg School of Public Health, at a talk at the School of Public Health in February. Beyrer investigated the health care system in Zimbabwe last year on behalf of Physicians for Human Rights.

The reasons for the epidemic and its high mortality rates, Beyrer said, stem from the corruption of President Robert Mugabe's administration, which enriched itself at the public's expense. "I have never seen a health care system collapse so extreme," Beyrer said. Public hospitals and clinics shut their doors, and for political reasons, the government had handed over public water supplies to cronies. As a result, untreated sewage flowed into reservoirs of drinking water.

"If you want to create a cholera epidemic, this is the way to do it," Beyrer said. "It is very hard to imagine a public health solution to these problems without addressing the politics."

—John Curtis



BARBARA BURTNES

Physicians must know how to blow the whistle on torture

Physician complicity in torture at Guantánamo and Abu Ghraib reveals a serious gap in medical education, said former Yale professor Barbara Burtness, M.D., now chief of head and neck medical oncology at Philadelphia's Fox Chase Cancer Center.

Speaking at the Program for Humanities in Medicine in January, Burtness said that physicians and other health care providers had abetted such tortures as waterboarding, granted medical clearance for harsh interrogations, permitted forced feeding, offered privileged information on prisoners' phobias, withheld care and falsified death certificates. In Iraq, she said, "they medically approved biopsychosocial interrogation plans."

"I wondered," said Burtness, "Were they people I had gone to medical school with, or people I had trained?"

Medical students, she said, should learn standards for treatment of prisoners and understand such ethical codes as the Declaration of Tokyo, which addresses torture. They should recognize signs of torture and understand that, if they participate in abuse, they could be accused of war crimes. Physicians should also know how to blow the whistle: just as they carry notes on how to measure blood gases, she said, they should carry phone numbers for reporting torture.

—Cathy Shufro



LAINIE FRIEDMAN ROSS

Parental consent needed for genetic screening

Most of the 4.3 million babies born in the United States each year are screened without parental consent for up to 50 genetic disorders that may cause such severe conditions as mental retardation. But at a pediatric grand rounds in February, Lainie Friedman Ross, M.D., PH.D. '96, the Carolyn and Matthew Bucksbaum Professor of Clinical Medical Ethics at the University of Chicago, argued for changing the recommendations governing parental consent.

"If we had parental consent for these tests it would show respect for parental autonomy in health care decisions for their children, which is required for all other health care, and it would also allow us to enroll the children in research protocols," Ross said. "That is the only way we will learn the natural history of these very rare diseases, understand who needs to be treated and develop effective treatments for them."

Ross also questioned the current policies of the American Academy of Pediatrics and the American College of Medical Genetics, which proscribe testing children for adult-onset conditions like breast cancer. Some parents want the information early for psychosocial reasons. While predictive testing should be discouraged, Ross maintained that parents, not physicians, should have the final say in testing children.

—Alix Boyle

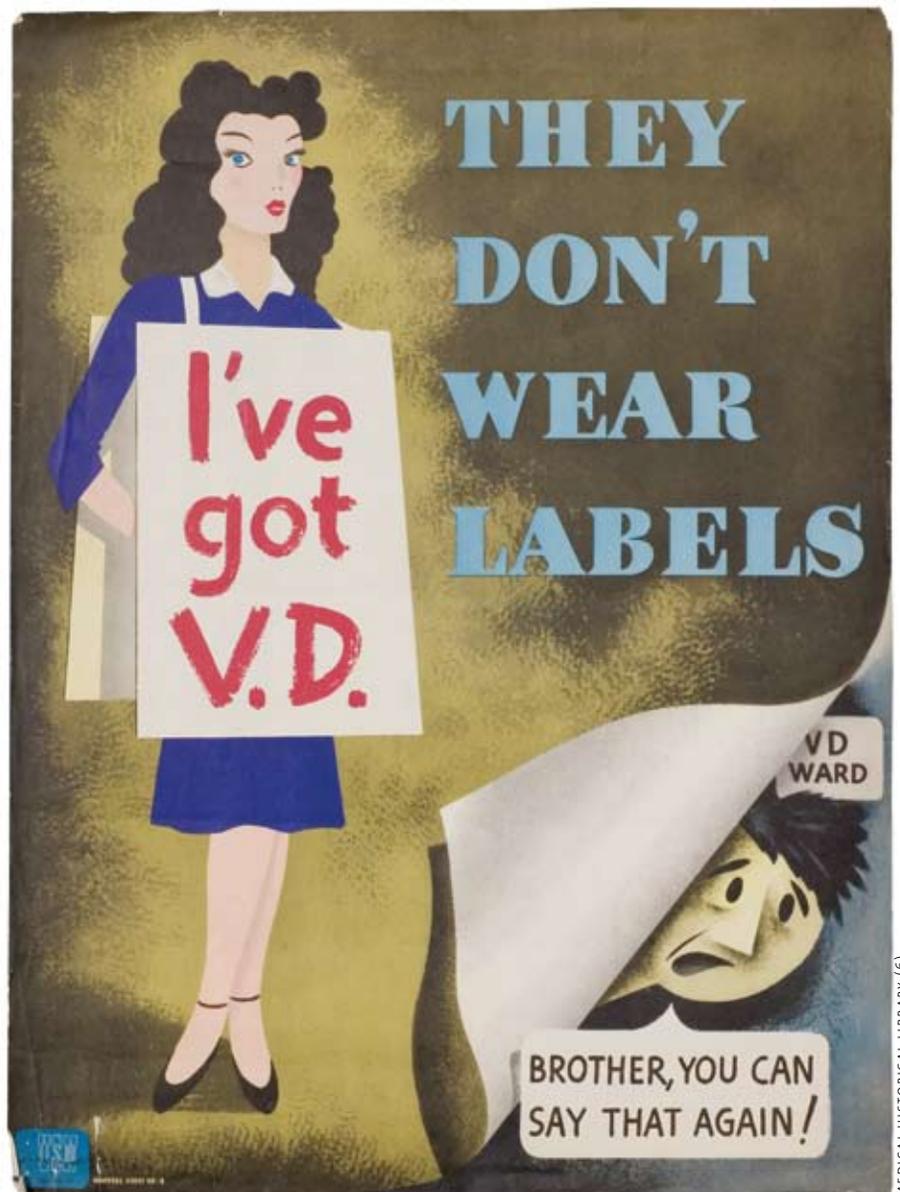
Cautionary tales for WWII GIs

The Medical Historical Library's art collection includes graphic posters that warned soldiers and sailors of the dangers of venereal diseases.

By Colleen Shaddox



Posters that warned enlisted men of the dangers of unprotected sex were part of a larger educational campaign to stem the spread of sexually transmitted diseases during and after World War II. The posters, which were prominently displayed at military bases, were intended as reminders that would buttress messages imparted through filmstrips and lectures. The messages took different approaches, some warning against prostitution and cautioning, as in the poster at right, that "They don't wear labels."



She's no idealized oil painting. The lines around the mouth tell you she's been around the block. She might have stepped out of a dime detective novel, a wrong number who conned some farm boy into giving up his heart and his wallet. She is literally falling out of her too-tight dress. One hand rests on a cocked hip while a cigarette smolders in the other. Her hennaed hair is tightly curled. She arches a plucked brow and forms her rouged lips into a bitter pout.

"Danger Disease Ahead!" the poster warns. Just in case the message is too subtle, a large orange banner at the bottom spells it out: "Gonorrhoea Syphilis." This unnamed woman was created to warn World War II servicemen about venereal disease (VD).

The Medical Historical Library's holdings include etchings by Rembrandt, portraits of the world's most eminent physicians stretching back to Hippocrates and reverent depictions of kings healing scrofula with the "royal touch." It may seem incongruous that a graphic—in both senses of the word—and cautionary portrayal of a loose woman would find a home here. For several years, however, the library has been adding to its collection of public health posters.

"What is represented in art, or fine art ... is limited," explained Susan Wheeler, curator of prints and drawings.

"Moving into public health posters allowed us to represent more medical subjects in the collection."

In 2004, just as the library had made a strategic decision to acquire more posters, it received a large gift of turn-of-the-century French advertising and public health posters from collector William H. Helfand, who has since made additional gifts. Posters were often produced in large numbers, explained Wheeler, and so copies reside in many attics and garages. As websites catering to collectors begin to spring up, owners realize that they are storing a saleable commodity, and more posters become available. The library is adding its posters to the Medical Digital Library so that they will be widely accessible.

An exhibit in the Cushing Rotunda through the winter featured a trio of posters produced by the U.S. Navy during World War II to warn sailors about sexually transmitted diseases. Some other subjects addressed in the collection include hygiene, nutrition, AIDS, tuberculosis, cancer, polio and children's health. All the posters have a common purpose: to change human behavior. So their images and language are strong and direct.

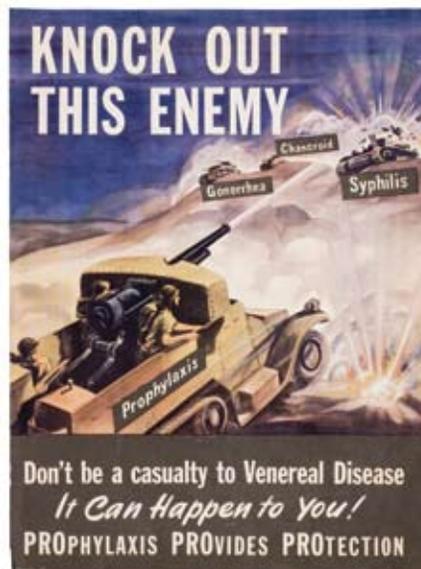
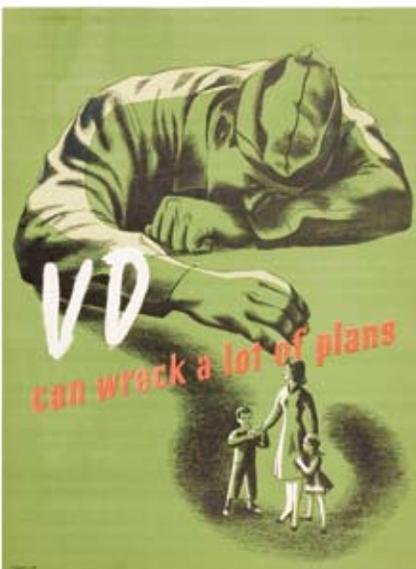
The library's selection of World War II anti-VD posters is a prime example. A sailor leans against the ship's rail with

"VD" painted in huge orange letters on the back of his T-shirt. The caption reads, "Nothing to be proud of." In another poster, a sailor paints "VD" in the same bright orange across the deck of a battleship. "Don't smear your ship," the poster implores. The caution against letting down one's comrades is a recurrent theme, explained Wheeler.

The wartime military gave every serviceman training about preventing venereal disease and access to prophylactics. When men were infected, they were urged to see military doctors as soon as possible. A number of posters warned against "quacks" and home remedies. "Rapid treatment centers" gave prostitutes access to drugs to halt transmission. The anti-VD campaign was effective. By the end of the war, the infection rate among servicemen was no higher than that of the civilian population.

In April and May, the library will feature early Soviet posters, again on the theme of venereal disease. The library has acquired a complete set of posters from the Soviet campaign of 1928, so viewers can get a full picture of the messages that Russian public health officials were sending.

Colleen Shaddox is a freelance writer in Hamden, Conn.



The posters used a variety of approaches to convey their message. The one at far left called to mind family and the possibility of lost dreams. A specific concern was that after the war soldiers would bring disease home. The poster at left depicted VD as an enemy to be conquered through prevention. And the posters above, part of a series, invoked shame and guilt. Soldiers and sailors could not let their buddies down by getting sick—incapacitated servicemen could not be part of the team.



200 Years of Medicine at Yale

Cast your votes for the most significant events and personalities of the school's first two centuries.



CUSHING/WHITNEY MEDICAL LIBRARY

Nearly 200 years ago, in October 1810, the Connecticut legislature passed a bill establishing the Medical Institution of Yale College, a joint venture between Yale and the Connecticut State Medical Society. The resulting institution then consisted of four professorships appointed by the Corporation of Yale College after nomination by a joint committee of the corporation and the medical society. The fledgling medical school opened its doors in 1813 with those four professors, an adjunct professor and a student body of 37. The course of studies consisted of a few months of lectures in a classroom. Only three students would graduate with medical degrees in 1814.

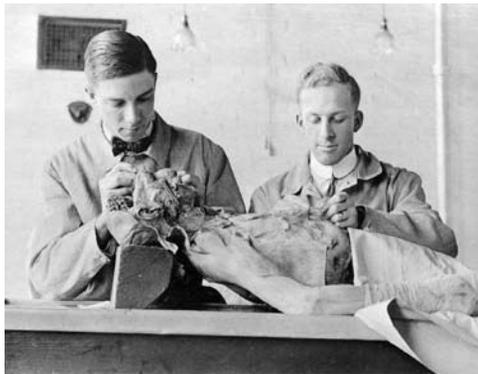
Next year the medical school will mark the start of its third century with a series of special events and exhibits and the publication of a book looking at the personalities and forces that shaped medicine at Yale.

Yale Medicine would like readers' opinions about those influences, as well as their recollections of medical school life over the last half century or so. Was Milton C. Winternitz, M.D., the so-called "steam engine in pants" who established the Yale system of medical education, the most dynamic of all deans? Was his educational philosophy the driving force behind the school's extraordinary growth in reputation? Was Paul B. Beeson, M.D., the most exemplary clinician, or was it John P. Peters, M.D.?

We'd like to hear from you. On the following pages are 10 questions about the history of the School of Medicine and your experiences here compiled by the editors of *Yale Medicine*. Please take a moment to detach or copy these pages, check off

your favorites or nominate your write-in candidates—along with your comments and reminiscences—and return it in the envelope provided inside the back cover of this magazine. (There's also a Web version of this survey at yalemedicine.yale.edu/bestofyalemed.) There are many significant events, findings and discoveries to choose from, but we ask that you select only one response per question, or write in your nominees for the "best of the Yale School of Medicine."

So whether you feel that the neuro rotation in third year or that role in drag during the second-year show was the pinnacle of your medical school experience, take a few minutes to look back and share your memories, as well as your nominations for the medical school's best of everything. **YM**



CUSHING/WHITNEY MEDICAL LIBRARY

PREVIOUS PAGE LEFT John Elefteriades (at center of photo) studied medicine at Yale, did his residency here and stayed on as a fellow. He now leads the section of cardiothoracic surgery and is renowned for both his groundbreaking research on aortic aneurysms and his surgical skills.

PREVIOUS PAGE RIGHT In the early 1880s, surgeon William Henry Carmalt (at center with mustache) was photographed in the operating room on the top floor of the New Haven Hospital. Carmalt, professor of surgery from 1881 to 1929, graduated from Yale Scientific School in 1857, received his medical degree from the College of Physicians and Surgeons in New York in 1861 and studied abroad from 1870 to 1874. A pioneer in aseptic surgery, he was elected president of the Connecticut Medical Society in 1904 and president of the American Surgical Association in 1907.



JOHN CURTIS

ABOVE LEFT Alfred Carlton Gilbert, left, who graduated in 1909, examines a donor in this undated photo, with an unidentified classmate. Gilbert was an Olympic pole vaulter and went on to create the Erector Set.

ABOVE RIGHT In the fall of 2008, first-year students Jerry Trejo and Andrew Dei Rossi began to examine their donor in The Anlyan Center anatomy laboratory. This lab features an exhaust system that removes noxious odors, computer terminals at each work table and instant access to medical texts and diagrams. But it also relies on the generosity of donors who dedicate their bodies to medical education. One thing hasn't changed—the study of anatomy still requires exploration of a human body.

The best of two centuries

The editors of *Yale Medicine* would like your opinions on the most significant events and personalities to shape the medical school since its founding in 1810. To start the ball rolling, we've suggested a few contenders, but these are just suggestions. We hope the collective wisdom of thousands of alumni, faculty and former house officers on our mailing list will produce other candidates and sharpen our focus when it comes to describing the forces that have made Yale School of Medicine great over the years. Your votes will be counted and your comments included in a follow-up article in *Yale Medicine* in time for the school's Bicentennial celebration in 2010-2011.

In addition to voting, please tell us the thinking behind your choice in the space provided for comments. We've also included several questions about the best aspects of Yale School of Medicine as you experienced them during your student years.

Please complete this survey online at yalemedicine.yale.edu/bestofyalemed, or fill out the questionnaire that follows and return it in the envelope provided inside the back cover of this magazine.

Contact information:

_____	_____
NAME	STREET ADDRESS
_____	_____
E-MAIL	CITY STATE ZIP

1. What event in the history of Yale School of Medicine had the greatest impact in shaping the school?

- Founding in 1810
- Admission of women in 1916
- Creation of the Yale system in the 1920s

OTHER

COMMENTS

2. What was the greatest scientific advance made at the medical school?

- John Peters' transformation of clinical chemistry into a discipline of precise, quantitative indicators of disease
- Dorothy Horstmann's finding that the polio virus enters the central nervous system through the bloodstream, paving the way for the Salk vaccine

The first antiviral drug, discovered by William Prusoff

OTHER

COMMENTS

3. What was the medical school's greatest clinical advance?

- Discovery and successful testing of the therapeutic properties of nitrogen mustard, the first anticancer drug
- First successful use of penicillin in the United States
- Introduction of fetal heart monitoring in 1958

OTHER

COMMENTS

5. Who was the greatest personality to shape the school?

- Founding faculty member Nathan Smith
- Milton Winternitz, dean from 1920 to 1935
- Vernon Lippard, dean from 1952 to 1967

OTHER

COMMENTS

7. Which basic science class impressed you the most?

9. Which extracurricular activities were the most enjoyable?

4. Who among the faculty possessed the most extraordinary scientific mind?

- John Fulton
- Dorothy Horstmann
- George Palade

OTHER

COMMENTS

6. Who was the medical school's most outstanding clinician?

- John Peters
- Edith Jackson
- Paul Beeson

OTHER

COMMENTS

8. What was your most valuable clinical experience at Yale?

10. What is your favorite memory of medical school?



TOP LEFT When Dorothy Horstmann applied to Yale for a fellowship during World War II, her interview did not go well. Francis Gillman Blake, the acting dean, told her “how the last woman he had on the house staff did something awful,” she recalled. “If a woman on the house staff did not live up to expectations it was remembered for the next 50 years,” she told him, “but if the person was a man, it was forgotten by the next year.” Blake left the hiring decision up to John Paul, a young pathologist who had co-founded the Yale Poliomyelitis Study Unit in 1931.

Horstmann was hired and she paved the way for a polio vaccine with her discovery that the virus enters the nervous system through the bloodstream. Horstmann, shown here in her lab in the 1970s, was the first woman to be appointed a full professor at the medical school.

TOP RIGHT Women have become a ubiquitous presence in classrooms, clinics and laboratories over the years. Sarah Henry, a research associate in neurology, works in the lab of neurologist Jana Preiningerova, who studies multiple sclerosis, MRI analysis and cell-based therapies for multiple sclerosis.

ABOVE LEFT The Class of 1949 was the first to stage a show that mocked the medical school and its faculty. The “Four Years for What Follies” was the brainchild of William Anlyan, who wrote the script, played piano and directed the production. Over the years what had been a fourth-year show became a second-year show. As always, the students mock their professors and classmates and draw the plot from current events.

ABOVE RIGHT “The Great ST Depression,” presented in February by the Class of 2011, 60 years after the first student production, depicts faculty, administrators and students struggling to make ends meet in the face of a financial crisis. In one scene, students moonlighting at a fast-food joint, played by Adam Kaufman, Lauren Graber and Henry Park, try to treat a choking victim played by Mei Elansary.





How a
**rock
'n' roll**

scientist built a better mouse

By inserting human system genes into mice, immunobiologist Richard Flavell and his team are creating a mouse with a working human immune system. Their goal is a system for testing vaccines and therapies against diseases that kill millions.

Story by Michael Fitzsouza
Photograph by Frank Poole

PREVIOUS PAGE Richard Flavell chairs his department and oversees multiple research projects, yet he still finds time for his other passion, rock 'n roll.

In March 2006, eight healthy volunteers in London received an experimental drug that showed promise for treating rheumatoid arthritis and other autoimmune diseases. In animal tests, the drug, named TGNI412 by its developer, the German biotech company TeGenero, caused T-cells to proliferate, especially a subset known as regulatory T-cells. These cells calmed the immune system, leading TeGenero to believe its candidate molecule would ease symptoms in diseases in which the body is attacked by its own sentinels.

That was the hope. But when TGNI412 was tested in humans, disaster ensued. The six young men who received the drug (two volunteers were given a placebo) became severely ill within 90 minutes, suffering headaches, shivering, searing pain, swelling and nausea. Within 12 hours, one was on a ventilator and all six were admitted to intensive care. Then their organs—kidneys, lungs and livers—began to fail and their T-cell counts, instead of proliferating, dropped to close to zero.

What went wrong? Writing in *The New England Journal of Medicine* later in 2006, the intensive care team that rescued the six men reported that TGNI412 had launched a “cytokine storm”—the rapid and overwhelming release of toxic immune system molecules. Nothing in the animal studies had suggested this reaction was possible, and the human subjects had received only one-500th of the dose that had proved harmless to mice.

Although Richard A. Flavell, PH.D., was not involved in this near-fatal clinical trial, its lessons were not lost on him and on other scientists who use animal models to understand human biology and pathology. Studies in lower organisms—from yeast, worms and fruit flies up the chain to nonhuman primates—are powerful precursors to research in people, says Flavell, the department chair and Sterling Professor of Immunobiology at Yale and a Howard Hughes Medical Institute (HHMI) investigator. The vast majority of genes in flies have human homologues, and the genomes of mammals and primates are closer still to our own genome. But what works in mice may not work in humans.

Human molecules in a mouse

Since the 1980s, Flavell had been engineering mice by “knocking out” specific genes or inserting them, with great effect. His group’s work led to the development of a vaccine against Lyme disease and to a more detailed understanding of other disorders, including diabetes, lupus, asthma, Crohn disease and multiple sclerosis. But Flavell and his colleagues asked

whether there might be a better way: “What if there was an experimental animal with a human immune system? How much easier would it be to predict what would happen?”

When the Bill and Melinda Gates Foundation announced its Grand Challenges in Global Health in 2003, with a goal of creating new vaccines for diseases in the developing world, Flavell and several of his collaborators realized that such an experimental mouse would be an invaluable tool. Their proposal was among 1,500 submitted to the Gates Foundation and one of 43 funded in the first round of grants in 2005. Flavell’s group at Yale and his collaborators in Switzerland and New York received \$17 million. Their goal is to generate mice in which human immune system genes replace those of the mouse “so that they can support the development and function of human immune cells engrafted into the mice. This should permit reliable assessments of weakened live vaccines prior to human trials,” according to the Gates program.

While this “human immune system mouse” builds on previous advances by other scientists, it represents a major shift in thinking. “Nothing of this kind of grand vision has been attempted before,” says David G. Schatz, PH.D., a faculty colleague. Flavell’s group is inserting into mice the cytokines and other molecules that immune cells use to summon other cells, the markers that establish identity and mediate transplant acceptance or rejection, and the receptors on which cells rely to recognize viruses and bacteria.

So far, Flavell’s group has successfully altered or inserted nine human immune system genes into the experimental mouse. “I think we’ll have a usable system in 15 months,” he says.

An unusual path

When Flavell was recruited to Yale in 1988 to head the medical school’s newly established Section of Immunobiology, he came with an unconventional pedigree: educated at the University of Hull in the north of England, Flavell had trained and taught at universities in Europe before leaving academia for a job in business. Scientists do that all the time. But after six years running the research division at Biogen, one of the early biotech companies that emerged in the 1980s, Flavell returned to academia. That’s much less common, and often difficult to accomplish after so much time out of the funding stream that supports academic scientists.

Twenty years later, immunobiology at Yale is considered one of the top programs by its peers. It was ranked No. 1 among

immunology graduate programs in the *Chronicle of Higher Education's* 2006 Faculty Scholarly Productivity Index, which counts scholarly publications, citations, grant dollars, awards and honors in its assessment of the best departments in the United States. Flavell has authored a number of highly cited papers and has been recognized with science's top honors: he was made a member of the Royal Society in 1984 and elected to the National Academy of Sciences in 2002 and the Institute of Medicine in 2006.

Immunobiology's rise at Yale may have resulted in part because of—rather than in spite of—Flavell's unconventional approach to his career and to science. For example, he leads one of the larger university-based lab groups in the world, but while he is a scientist with significant clout, he is anything but a top-down leader. “Richard couldn't care less where a good idea comes from, as long as it's a good idea. He's very good at gathering information, building consensus and then making a decision,” says Schatz, professor of immunobiology and an HHMI investigator. “It's very inclusive.”

No prima donnas

This congenial atmosphere may stem from a decision Flavell and his Yale departmental co-founders—colleague Alfred Bothwell, PH.D.; former professor H. Kim Bottomly, PH.D. (now the president of Wellesley College); and Bottomly's late husband, Charles Janeway Jr., M.D.—made at the beginning. “We wanted to have outstanding people working in complementary areas using different approaches,” Flavell says. “But there was one other thing that was really essential—no prima donnas. So we hired people who were outstanding but were all easy to get along with.”

The department now numbers 13 primary faculty and close to 200 researchers overall, including faculty with secondary appointments as well as research scientists and postdocs. Flavell's own lab has more than 40 people working on a combination of projects funded by HHMI, the National Institutes of Health and the Gates Foundation.

Flavell has trained several dozen young scientists from around the world who rotated through his lab as postdocs. In selecting them he has looked for “a combination of creativity and the ability to get something done.” Most have gone on to highly productive careers in the United States and abroad. For example, Lena Alexopoulou, PH.D., who earned her doctorate in Greece before doing her postdoc at Yale, is now a group leader at the Centre d'Immunologie de Marseille-Luminy in France. In 2001 she and Flavell published a paper in *Nature* showing for the first time that *toll*-like receptors (TLRs, molecules at the core of the innate immune response) play a role in the recognition of viruses. With more than 1,000 citations, the paper is one of the most highly referenced in the rapidly expanding TLR field.

Alexopoulou says that Flavell's mentoring launched her career and gave her an appreciation for how to manage people in her own lab. “He knows how to motivate people,” she says.



For almost as long as he's been at Yale, Richard Flavell has played guitar in the “lab rock” band, the Cellmates. Colleagues and band members have included former pharmacology chair Leonard Kaczmarek on guitar, former cell biology chair Ira Mellman on bass and Flavell's wife, Madlyn, on keyboards. The Cellmates have recorded such science rock songs as “She's a Knockout” and “Molecular Millionaire.”

“He gives people a chance to develop their own ideas and projects. He provides you with everything you need that he can offer you—connections, money, scientific information—and he’s very open to new ideas.”

As a result, says Deputy Dean Carolyn W. Slayman, PH.D., “any wonderful young postdoc ... would just die” for a slot in Flavell’s lab. “He’s got a terrific knack for doing translational research and training people in it. And that’s led to an amplification factor—there are more scientists doing this kind of extraordinary work by virtue of Richard training others.”

By translational work, Slayman means conducting fundamental scientific studies and applying that knowledge to clinical questions. Flavell explains: “I would say a high proportion of it is curiosity-driven, pursuing such basic questions as ‘How does the body work?’ But we always study this using diseases that matter. And what we try to do is to force ourselves to ask the question, ‘Is this an important problem?’

“We want to study only important problems,” he says, meaning problems that are fundamental or relevant to human disease. “You can spend your life doing unimportant things and in both cases you will spend just as much energy and get just as tired and as frustrated—and you’ll be a lot less productive.”

Finding motivation

In the late 1950s, when he was a rock ‘n’ roll-crazed teenager in the English county of Norfolk, no one would have mistaken Flavell for a budding academic. “I was a totally unmotivated student, except for the one thing I was interested in at the moment,” he says. “First it was French, then it was history. Anything I was obsessed about, I was the best student in the class. For the rest I was in the bottom 25 percent.”

That changed when he nearly failed his O-level exams, an essential step on the road to a university education in Britain. Raised in a family of teachers (his father was a school principal and a pilot during World War II), Flavell says the shock of a poor grade roused him from his scholarly indifference. Around the same time, thanks to an exceptional teacher, he discovered chemistry. After earning bachelor’s and doctoral degrees in biochemistry at Hull, Flavell did postdoctoral work in the Netherlands and Switzerland and then joined the faculty of the University of Amsterdam. From the Netherlands, he moved to London, where he was head of the Laboratory of Gene Structure and Expression at the National Institute for Medical Research at Mill Hill.

Then came an offer to join a commercial enterprise, the biotechnology startup Biogen, in Cambridge, Mass. “It was a very difficult decision, because I was totally satisfied with what I was doing. ... And along comes this crazy opportunity, which was also great because it was at a time when a new industry was being created.” It was exciting, Flavell says—“You’re alternately up in the clouds or on the precipice”—but when then-Yale Dean Leon E. Rosenberg, M.D., came looking for someone to head the medical school’s new program in immunobiology, he decided he was ready for a return to academia. Biogen’s next phase of growth, in which it would bring its first drugs to market, was a decade-long proposition. “I thought, ‘Do I want to commit the next 10 years to doing that?’” he says. “I decided that I wanted to be more of a scientist and less of a manager.”

At Yale, Flavell has struck a balance between the pursuit of basic biological questions and the pursuit of solutions to the causes of human disease. During its 20 years, the immunobiology department has opened major new areas of understanding, in particular discoveries establishing that the long-ignored innate immune system plays a much more significant role in the body’s defenses than previously thought. Overturning assumptions that had stood for decades, department members Janeway and Ruslan Medzhitov, PH.D., demonstrated in *Nature* in 1997 that the innate response is the activating factor for the adaptive immune system’s release of T- and B-cells.

“It was like saying there are only four planets in the solar system and then one day somebody comes along and says, no, there are eight,” says Schatz. In the dozen years since the Medzhitov-Janeway paper appeared in *Nature*, a new branch of immunology research has been established, with hundreds of scientists looking for drug and vaccine targets among TLRs.

To help speed the clinical application of its basic immunology findings, the department launched a new program in 2007 called Human Translational Immunology (HTI), bringing together scientists from across the medical school and university to focus exclusively on research that could lead to better treatment of disease. The group studies the immune components of a wide range of disorders, including autoimmune diseases, cancer and the immune rejection of transplanted organs.

A better mouse

In the three years since the Gates project began, Flavell’s group has made steady progress toward developing a mouse with a functional human immune system for the purposes of testing vaccines. His collaborator in Switzerland, Marcus Manz, M.D., of the Institute for Research in Biomedicine in Bellinzona, established the basis for the project in 2004, when his group created a mouse with human T-cells, B-cells and natural killer cells (NK cells target and destroy other cells that are infected with viruses or bacteria or are cancerous). To do this, they began with an immunodeficient mouse lacking RAG1 or RAG2—genes needed for generation of B-cells and T-cells—and lacking the receptor required for the growth of the NK cells.

When they injected human stem cells from umbilical cord blood into the liver of the mouse, those stem cells found their way to the bone marrow and began to develop into mature human immune cells.

“It is hard to believe that a human system may settle down in the organism of a mouse, yet the evidence points that way,” Manz’s colleague Elisabetta Traggiai, PH.D., said in 2004. “Two months since the transplant into the mouse, we have observed fully fledged human cells capable of reacting to human viruses and vaccines.”

One problem that emerged, says Elizabeth E. Eynon, PH.D., who manages the Gates project as a research scientist in Flavell’s group, was that the human cells did not mature properly. They did not have the expected longevity, they did not multiply in sufficient numbers and they did not interact with other cells as expected.

Eynon says those problems can be attributed to the lack of human growth factors and other molecules required by the T-cells and B-cells to develop correctly but not present in the mouse. “We tested to see how much alike a number of different factors were in the mouse and human and found about a dozen with significant differences,” she says. Thus began the current effort to “knock in” the genes for those molecules and create the support system the human immune cells will need to thrive in the mouse.

In that work, the project has drawn on the expertise of Sean Stevens, PH.D., and others at Regeneron Pharmaceuticals in Tarrytown, N.Y. Regeneron created a highly efficient technology for knocking out genes and inserting human replacements into mouse DNA. Eynon says they are now working on introducing genes for the human major histocompatibility complex, which the body relies on to recognize foreign cells.

“What we hope to have [by July 2010] is a mouse that pretty nearly recapitulates the basic, fundamental immune responses that are human. All the appropriate cells will be there in the appropriate amounts, the cells will live a long time and the immune response will be functional,” she says. “It certainly won’t be the perfect mouse, but we think that it will make enough of an improvement to make this a useful model, not only for our lab but for other groups as well.” **YM**

Michael Fitzsosa is director of communications at the School of Medicine.



JOHN CURTIS

Roots, Rock, Regale

When a young Richard Flavell and his bandmates were playing parties and clubs in England in 1960, they dressed in smart suits and thin ties and soaked up every bit of American blues and R&B they could get their hands on—including the music of Little Richard, Jerry Lee Lewis and Elvis Presley. Last May, Flavell was thrilled to meet a more famous contemporary of the English music scene, when Sir Paul McCartney visited Yale to receive an honorary degree.

At a reception in New Haven, Flavell told McCartney about his

days playing clubs in Norwich, England, where early Beatles collaborator Tony Sheridan was a performer. Flavell remembers a conversation with Sheridan, who had just come back from Hamburg and a series of gigs with a new band from Liverpool.

“They’ve got a funny name,” Sheridan told Flavell. “You should remember them. They’re going to do well.”

McCartney, says Flavell, was amused.

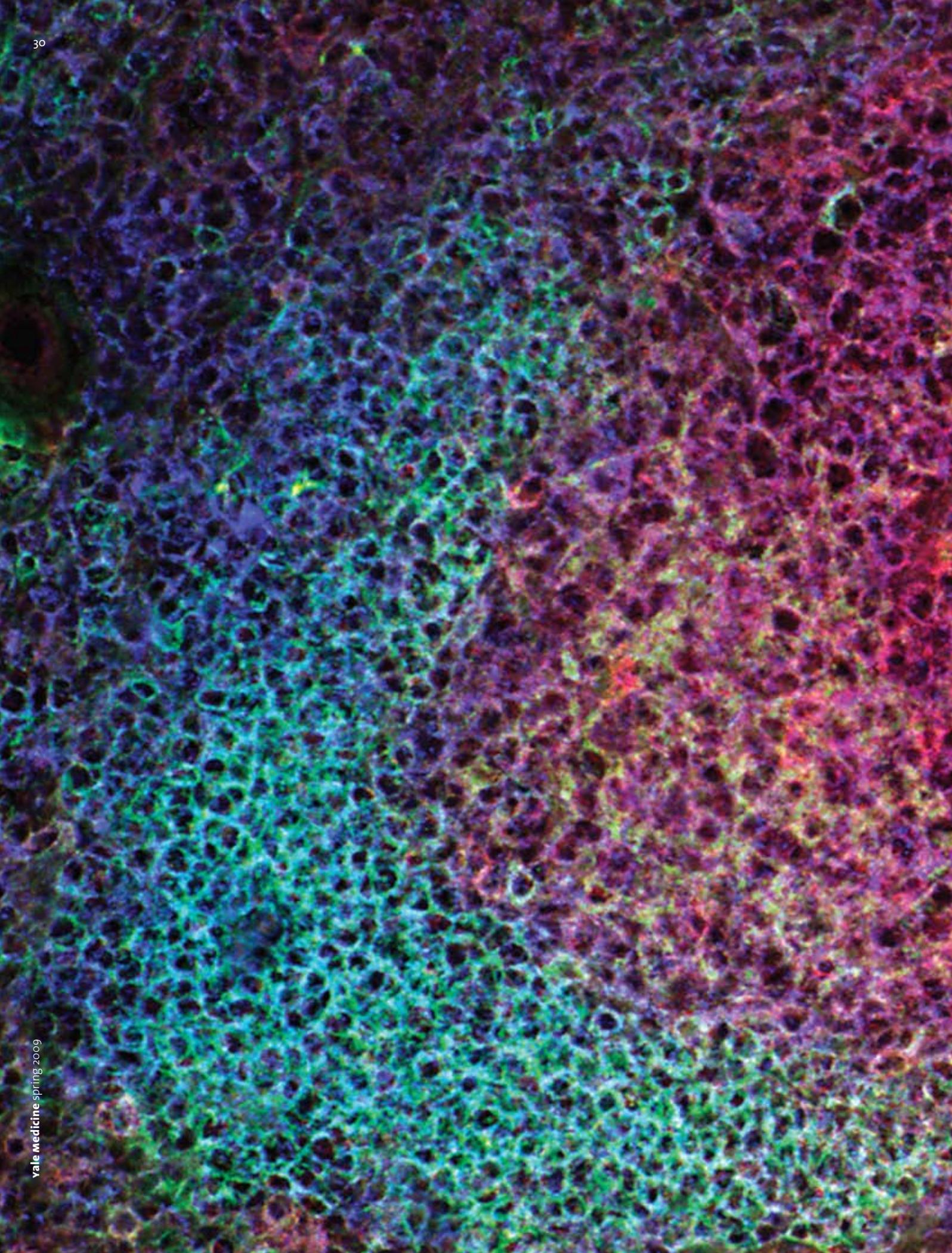


Online: Yale Netcasts

Richard Flavell: Mouse With a Human Immune System Could Revolutionize Research

Online: Yale Netcasts

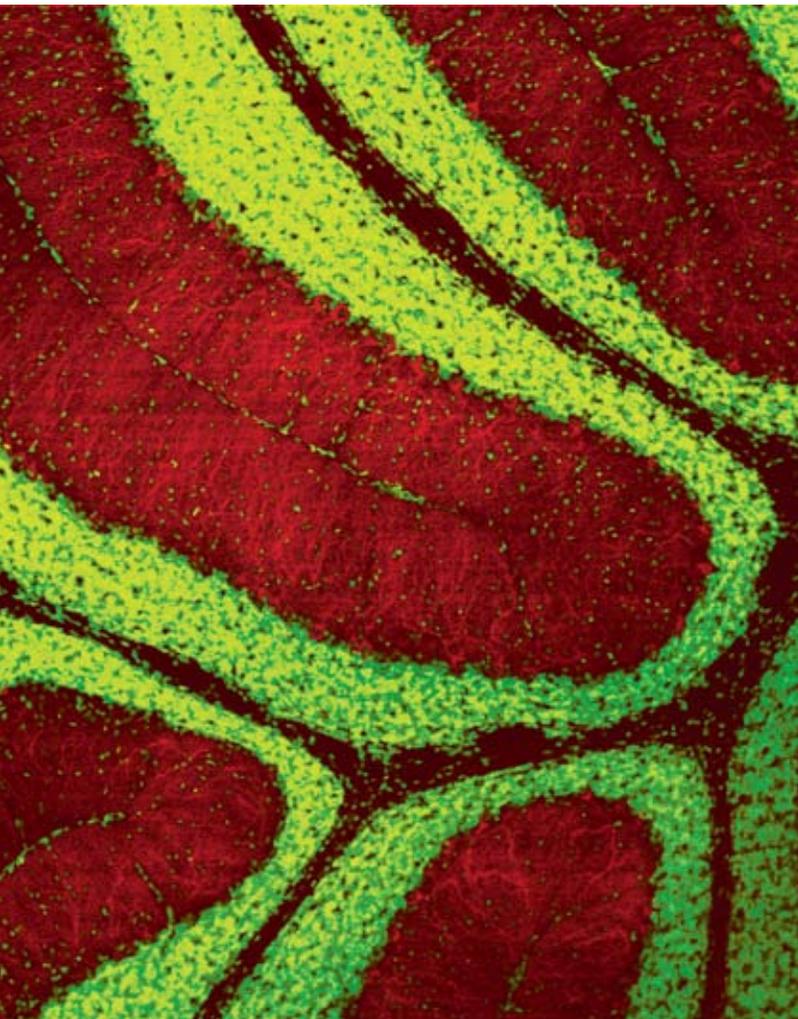
Ruslan Medzhitov: Arming the Immune System



When scientists become artists

An ongoing exhibit of interesting scientific images
raises the question of what constitutes art.

By Jenny Blair



PREVIOUS PAGE In this view of human tonsil tissue, scientists used green labels to locate naïve B lymphocytes, red for mature B cells and blue for a chaperone molecule. They then captured the image with a confocal microscope.

Image by Cécile Chalouni

ABOVE Purkinje cells from an adult mouse, located in the cerebellum and among the largest neurons in the brain, were stained red for acetylcholine receptors and green for DNA. The image was captured with a Zeiss Laser Scanning META microscope.

VALI GAZULA AND SUDHAKAR RAVURI

Outside a third-floor elevator at the Brady Memorial Laboratory, four unusual prints are displayed on the wall. Each is a square filled with a dense and intricate pattern that resembles television static; the prints are identical except for different bright hues. Their striking texture and colors invite a long examination. They would not look out of place in an art gallery.

Or would they? The patterns represent a DNA microarray, and they were created by scientists working with David F. Stern, PH.D., professor of pathology, and by Terry Dagradi, a photographer and image specialist in information technology at the medical school who curated the display. The images are just a few of the many that Dagradi solicited from School of Medicine researchers as part of an ongoing project sponsored by the Office of Facilities Operations to display interesting scientific images in the corridors of the medical school. The Stern images are among the few that Dagradi altered (she added color), but in each case she played an artist's role herself in choosing, framing and arranging the images. "There is a pattern and a rhythm" to these images, said Dagradi. "Somebody made a visual decision."

Along with facilities manager Lorraine Roseman, Dagradi had already co-founded and curated ArtPlace, a project that since 2000 has shown the work of local artists, including many medical school faculty, on the walls of the Yale Physicians' Building (YPB) on Howard Avenue. But unlike in the YPB galleries, which exhibit portraits, landscapes and abstracts in various media, the laboratory images were made in the course of scientific research—mostly with microscopes. For example, in the Bridge Gallery at The Anlyan Center (TAC), which runs along a second-floor walkway that connects the center with Brady Memorial Laboratory across the street, passersby are momentarily arrested by a fluorescent tick; by a protein rendered as writhing arrows, bulges and ribbons; by a 15-day-old mouse fetus, its snout and nail beds picked out in delicate blue, a portrait as tender as the sight of a sleeping child; by a set of neurons done in soft blues, pinks and greens that look like impressionist pastels, the cells seeming to strain upward like so many flowers in a Monet painting. Images like these straddle an uncertain boundary between scientific representation and the fine arts, and for some viewers they raise the question, what is art?

For as long as scientists have made observations, they have illustrated them. Andreas Vesalius, the 16th-century pioneer of the study of anatomy, took apart and reassembled the

human body in allegorical poses; Robert Hooke, the English polymath and contemporary of Isaac Newton, drew a flea seen under a microscope; John James Audubon, the 19th-century American naturalist and ornithologist, painted birds at a Louisiana plantation. The stunning images that resulted might be called ancestors of the ones at the medical school.

“When I look at those 17th-century images, I don’t hesitate to think of them as artworks,” said Jonathan Gilmore, PH.D., assistant professor of philosophy and a critic for publications including *Art in America* and *Artforum*. “[Hooke is] not just showing you these things as they looked under the microscope—he’s saying something about how marvelous or wondrous they are. ... There’s no reason not to call that art.”

That quality of wondrousness is one reason why such images still seem so much at home in galleries; moreover, what Yale is doing isn’t new. Princeton University, for example, has become noted for its Art of Science competitions, in which organizers ask researchers to submit scientific images. More than a hundred Princetonians entered the first contest in 2005. The results, displayed in both a gallery and online, were so breathtaking that they caught the attention of *Wired* and *Science* and answered the contest’s challenge: “Science Is Boring, Art Is Stupid, Prove Us Wrong.”

“What’s interesting to us is that these marvelous images ... come out of a process that is not really directed at making something beautiful,” said Gilmore.

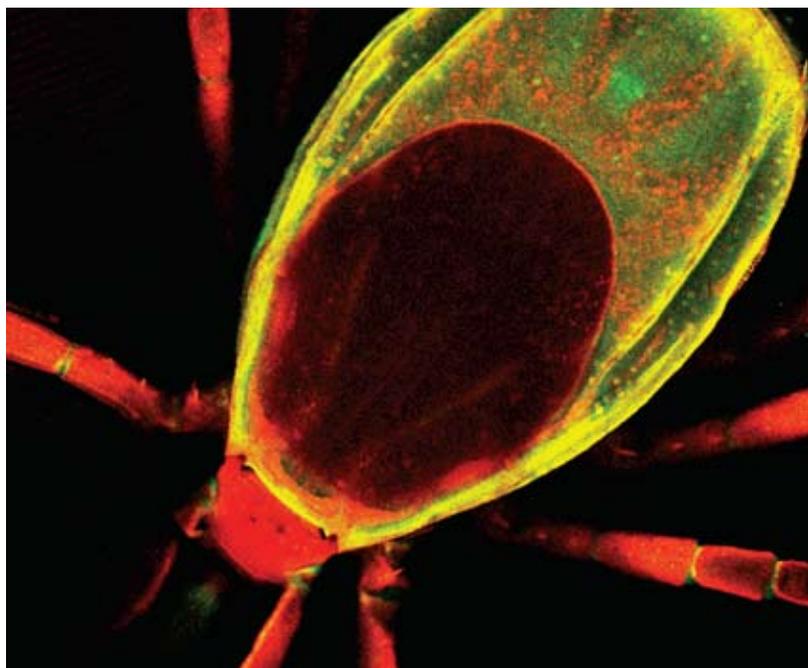
The portrait of the fluorescing tick is the work of Ruth R. Montgomery, PH.D., senior research scientist in medicine (rheumatology). She is also director of the confocal microscopy facility at the Department of Internal Medicine, where images are integral to her research. “As a person interested in how cells function, I’ve always taken pictures of them as part of displaying the research questions,” she said. “You learn as a skill of the trade how to get a good image that can be used in manuscripts and in slides to demonstrate your point.”

Montgomery studies what tick saliva does to human macrophage cells. “We were trying to trace a fluorescent marker through the tick to show which compartment of the tick it ended up in,” she said, describing an image that graced not medical school hallways, but the cover of the *Journal of Experimental Medicine* in June 2006. “We never did find the actual molecule we were looking for, so we didn’t really prove the point that we wanted to, but we got this cool picture. ... I figure [the display in TAC is] my one and only art opening for my lifetime.”

Vali Gazula, PH.D., an associate research scientist in pharmacology, made several images of a mouse cerebellum. Because they were not intended for scientific publication, he manipulated their colors to make them more striking. “Since this is for art,” he said, “I can put some dye more, some dye less, make [them] visually appealing.” Gazula said he sometimes uses leftover reagents to create images in addition to the ones he needs for his research. “When Terry asked me for



RUTH MONTGOMERY AND UTPAL PAL (2)



Ticks from the *Ixodes* family, the vectors for Lyme disease, were microinjected with fluorescent dyes to label surface structures and midgut cells. The images of the living ticks were made by laser scanning confocal fluorescent microscopy 24 hours after the dyes had been injected.

these pictures, I already had a lot of pictures, because I wanted to put them on my computer as screen savers.”

Yet the native of Hyderabad, India, does not think of himself as an artist. He thinks of art in a more traditional sense and dislikes abstract art. His favorite artist is a 19th-century Indian painter, Raja Ravi Varma, who painted episodes from the Indian literary epics in an academic European style.

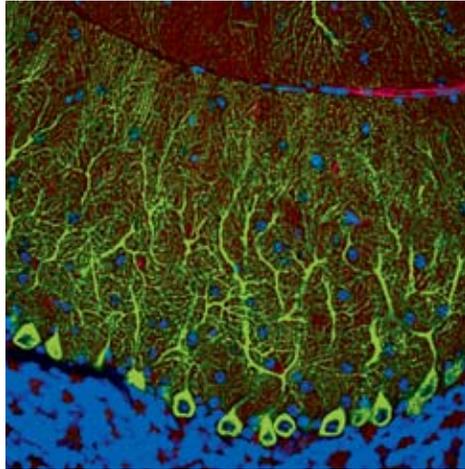
One reason why the question “Is this art?” is so important, said Gilmore, is that the answer has some bearing on how we respond to the images. “If the scientists making them thought of themselves as creating works of art, that says that we should interpret them, perhaps look for meaning in them.” Such works also get a pass on manipulation and enhancement—in art, anything goes. But the same is not true of images intended to demonstrate a scientific point; and indeed, other scientists whose works are on display deny having manipulated their images.

“Was it modified? No, not at all,” said Marc Pelletier, PH.D., a former postdoctoral fellow who now runs a biotech company in Cleveland, of his transmission electron microscope image. It depicts a molecule of apolipoprotein A-I, part of the high-density lipoprotein type of cholesterol. As the image caption points out, the micrograph is reminiscent of the work of the Russian painter Wassily Kandinsky, a pioneering abstract artist of the early 20th century. “I framed it in the scope to have the look of the Kandinsky,” he explained.

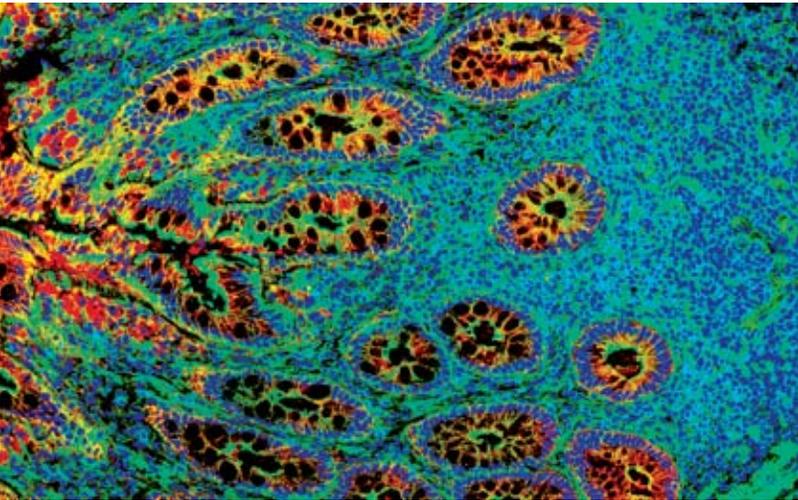
Though Pelletier didn’t alter or shape his image as an artist probably would, that nod to Kandinsky was an act of craftsmanship. In general, however, if a scientist never intended an image as art, it may not be. “Whether something is a work of art or not—that question has to be sensitive to the context in which it was created,” said Gilmore. “That doesn’t mean that these can’t be works of art made by, say, the person who collated them and put them together and used them.” In some cases—and in a long tradition of “found” art—Dagradi herself may be the artist. She chose images that were intended only to demonstrate a scientific point and, by making a visual decision of her own, elevated them to the status of art by displaying or altering them.

“I think that one should be at least careful about identifying the scientists—those who just happened to have these images around [and] made them for research purposes—as artists, because the concept of art didn’t enter into the process by which they made these things,” said Gilmore. We sometimes honor people who create visually interesting objects, he explained, by calling them artists. “Are those people artists in the sense in which Rembrandt was an artist? Probably not. I think that would be a mistake.”

Of all the scientists represented in Yale Med’s galleries, Cécile Chalouni, PH.D., a former associate research scientist in the Department of Cell Biology who now works at Genentech in San Francisco, may be the most at home in the art world. Trained as an immunologist, she chose her field in part for the



VALI GAZULA AND SUDHAKAR RAVURI



CECILE CHALOUNI

TOP Another view of Purkinje cells from an adult mouse cerebellum.

ABOVE Stains on this human colon section show actin filaments in green, an adhesion molecule on membranes of the colon’s epithelial cells in red and the nuclei in blue.

opportunities for imaging it affords; she was already an experienced aesthetic photographer when she began her doctoral studies. One of her microscopic images won a contest in *Nature Cell Biology* and three others appeared in the 40th edition of *Gray's Anatomy*, while her fine-art photography has been displayed in exhibitions in the United States and France.

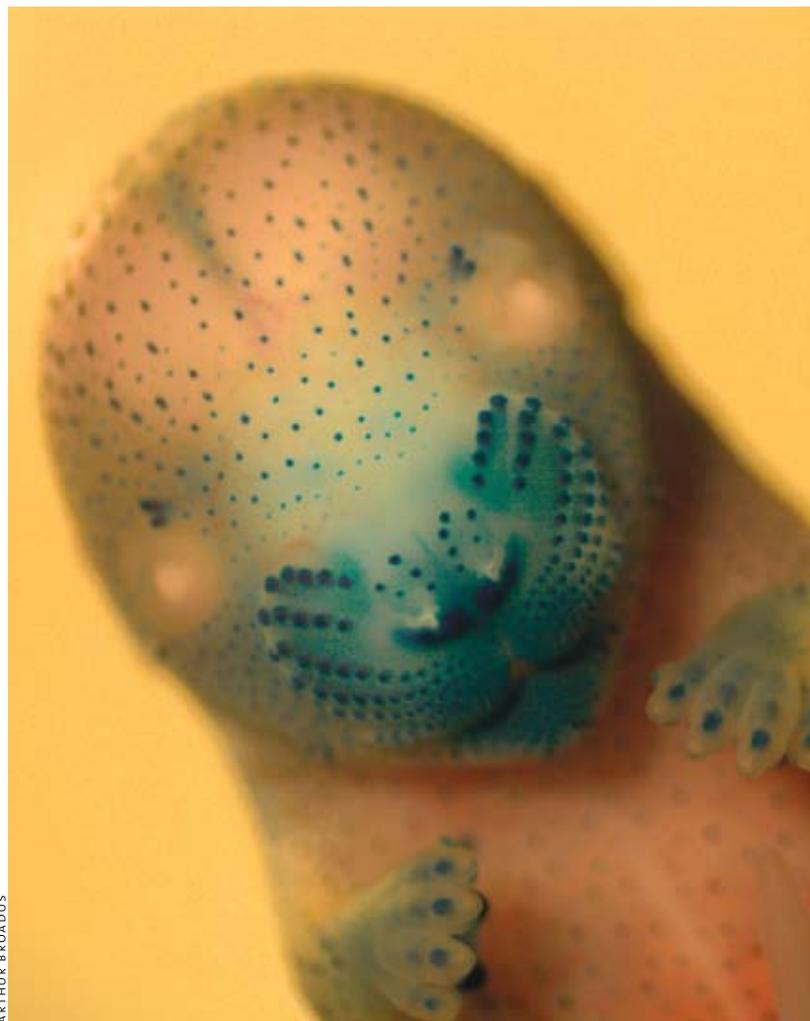
Both science and art, said Chalouni, feature connections between very different things. What shows up in a frog's immune system is often seen in a human's as well, while an artist may create a visual image based on a piece of music. "This is something for me that is totally amazing—that you translate and make bridges between senses."

Asked if the images she chooses for display were originally done for the sake of beauty or for science, she said they were done for both. Like Gazula, Chalouni occasionally makes and saves extra images in the course of her work. "The images I kept have the scientific information I'm looking for, and possibly aesthetic elements. What is important to remember is that a less beautiful image can be scientifically more interesting than a very beautiful image." That is, dendritic cells like the one on TAC's wall—a blue many-armed star—may be visually appealing, but a micrograph of simple round lymphocytes may be more striking to a scientist if it illustrates an important discovery. To a scientist, the beauty of an image may be more than visual. Yet, as artists have always known, the visual element makes for powerful demonstrations and may be the most effective mode of scientific communication.

"A fundamental driving force in science is to look for the beauty in nature," said Pelletier. "So scientists ... should have an eye to explore that nature." If the images in Brady and TAC are any indication, Yale scientists' eyes are wide open.

Pioneering scientific image-makers like Hooke who looked through their microscopes were filled with wonder at what they saw, and their modern-day counterparts—as well as many nonscientists—continue to gaze upon the natural world with awe and appreciation. "Sometimes there's no urgency in deciding whether or not these are works of art," said Gilmore, "because these things are just incredibly marvelous to look at in their own right." **YM**

Jenny Blair, M.D. '04, is a physician and writer based in New Haven.



ARTHUR BROADUS

This embryonic mouse is about 15 days old. A marker has been inserted and blue dye will stain any site in which the *lacZ* gene is normally expressed. In this image, the dye marks hair follicles that are forming, the nails and the epithelium around the nose and mouth.



Thomas Lynch

Lung cancer expert to lead cancer center

THOMAS J. LYNCH JR., M.D., '86, a lung cancer expert at Massachusetts General Hospital (MGH) and Harvard Medical School, was named director of Yale Cancer Center (YCC) in February. Dean Robert J. Alpern, M.D., Ensign Professor of Medicine, announced the appointment, which was effective April 1. Lynch will also serve as physician in chief of the new Smilow Cancer Hospital at Yale-New Haven.

In accepting the new post, Lynch said that he wants the cancer center to be known for discovery; personalized cancer therapy; the importance of compassionate patient- and family-centered care; and a commitment to quality, safety and outcomes measurement.

"One of the reasons why we're not curing cancer today is that we need to better understand the biology of cancer," said Lynch, who served as chief of hematology/oncology at MGH Cancer Center. "Yale is well-positioned for that, with expertise in immunobiology, genetics and tumor biology. At Yale, the scale is right for an integrated cancer program between science and clinical medicine. You have laboratories where fundamental discoveries are being made—within a couple hundred feet of clinics where patients are being treated—and people who are active in the pursuit of both clinical excellence and scientific discovery."

As part of that integration of science and clinical medicine, Lynch will oversee a new institute for cancer biology at the university's 136-acre West Campus. He will recruit a director and a team of scientists specializing in cell signaling, cancer immunology, and drug development and target acquisition for the new institute.

Other major plans for YCC and Smilow Cancer Hospital include recruitment of clinicians and translational researchers, a significantly expanded clinical trials network and a program that will provide molecular profiling services to enable targeted therapies.

As director of the MGH Thoracic Oncology Center, Lynch made important contributions to developmental therapeutics and defining the optimal treatment for patients with lung cancer. He has pioneered the use of molecular testing for mutations in the epidermal growth factor receptor gene to select patients who can benefit from targeted lung cancer therapies.

Lynch succeeds Richard L. Edelson, M.D. '70, chair and the Aaron B. and Marguerite Lerner Professor of Dermatology, who became YCC director in 2003. Edelson will continue as chair and professor of dermatology.

NOTES



Michael Caplan



Mark Hochstrasser



David Leffell



David McCormick

Several faculty members have been named to endowed chairs in recent months. **Michael J. Caplan**, M.D. '87, PH.D. '87, FW '89, known for his research on the sorting and function of ion proteins in polarized epithelial cells, was named the C.N.H. Long Professor of Physiology. His laboratory focuses on identifying the proteins that interact with ion transporters to determine their localization and trafficking properties. He is currently the interim chair of the Department of Cellular and Molecular Physiology.

Mark Hochstrasser, PH.D., was named the Eugene Higgins Professor of Molecular Biophysics and Biochemistry. Hochstrasser's research, which lies at the intersection of biochemistry and genetics, attempts to understand protein turnover at the molecular level—particularly the ways in which specific proteins are rapidly degraded within eukaryotic cells, even while most proteins are spared. **David J. Leffell**, M.D., newly designated the David Paige Smith Professor of Dermatology, specializes in the diagnosis and treatment of melanoma and other skin cancers using the Mohs micrographic technique. Leffell, who is also chief executive officer of Yale Medical Group, has served as deputy dean for clinical affairs at the School of Medicine since 2005. **David A. McCormick**, PH.D., was named the Dorys McConnell Duberg Professor of Neurobiology. McCormick studies the cellular and network mechanisms of the brain's cortical function in relation to attention, working memory, sleep-related activity and visual perception. **Scott A. Strobel**, PH.D., was named the Henry Ford II Professor of Molecular Biophysics and Biochemistry. His laboratory employs such technologies

as organic synthesis and X-ray crystallography to study reactions catalyzed by RNA.

Three neuroscientists have been named to endowed chairs funded by an alumnus of the Yale College Class of 1928. **Angus C. Nairn**, FW '82, PH.D., who was named the Charles B.G. Murphy Professor of Psychiatry, is noted for his research on the molecular actions of dopamine in the basal ganglia. Nairn has extensive experience in enzymology, protein chemistry and the molecular biology of signal transduction, particularly with respect to the role of protein phosphorylation in the nervous system. **Marina R. Picciotto**, PH.D., was named the Charles B.G. Murphy Professor of Psychiatry. She specializes in molecular neuroscience, behavioral pharmacology, mouse genetics and translational neuroscience. The goal of her research is improved understanding of the role of single molecules in complex behaviors related to addiction, depression and learning. **Jane R. Taylor**, PH.D., was named the Charles B.G. Murphy Associate Professor of Psychiatry. She specializes in brain research related to drug addiction and such psychiatric disorders as ADHD, depression, schizophrenia and Tourette syndrome.

Vikki Abrahams, PH.D., assistant professor of obstetrics, gynecology and reproductive sciences, has received a 2009 Albert McKern Scholar Award for Perinatal Research. The two-year award of \$100,000 per year will fund her proposal, "Human Endogenous Retroviruses: A Novel Biomarker for Pre-eclampsia." The award is funded by a bequest from Albert McKern, M.A. '13, M.D., an Australian who studied engineering



Scott Strobel



Angus Nairn

Marina
Picciotto

Jane Taylor



Joshua Copel



Walter Gilliam



Gregory Larkin



Majid Sadigh

at Yale before entering medical school at the University of Edinburgh.

Joshua A. Copel, M.D., professor of obstetrics, gynecology and reproductive sciences and of pediatrics, has been named president-elect of the Society for Maternal-Fetal Medicine (SMFM) for the coming year. The appointment begins in February 2010. The SMFM is a nonprofit organization of more than 2,000 members dedicated to improving care for pregnant women and their fetuses. The society's primary objectives are to promote and expand education in maternal-fetal medicine and to encourage the exchange of new ideas and research concerning the most recent approaches and treatments for obstetrical problems. Copel received the Dru Carlson Award for Research in Ultrasound and Genetics from the SMFM in 2007.

Walter S. Gilliam, PH.D., assistant professor in the Yale Child Study Center and director of its Edward Zigler Center in Child Development and Social Policy, received the Priscilla Canny Research Award in December at Connecticut Voices for Children's 8th annual First for Kids awards ceremony. He was recognized for providing consultation to state and federal decision makers. Connecticut Voices also praised his dedication to research on translating early-childhood policies into effective services and improving the quality of pre-kindergarten and child care services, as well as studying the impact of early-childhood programs on children's school readiness. Gilliam was a principal investigator of the National Pre-Kindergarten Survey, the first-ever national study of the

implementation of state-funded pre-kindergarten programs.

Robert Heimer, PH.D., professor of epidemiology (microbial diseases) and pharmacology, will work and lecture in Russia this year with support from a 2009 Fulbright Scholarship. Heimer's project, "Delphi Analysis to Explore the Origins of the HIV Epidemic Among Russian Drug Users," will be conducted at Kazan State Medical University in Kazan, Russia, from March through July. Heimer's research efforts include investigation of the mortality and morbidity associated with injection drug use. He is director of the Interdisciplinary Research Methods Core at Yale's Center for Interdisciplinary Research on AIDS and director of the Yale office of the Connecticut Emerging Infections Program.

Gregory L. Larkin, M.D., professor of surgery (emergency medicine) and associate chief of emergency medicine, has been awarded a two-year American Foundation for Suicide Prevention Distinguished Investigator Award for his study, "Suicide Clusters Across the Globe: Geospatial Trends in America, Ireland and New Zealand." This award extends a recent grant Larkin received from the New Zealand Ministry of Health to examine suicide clusters in that country. Larkin has also recently formed and been named as chair of the Task Force on Emergency Medicine and Suicidal Behavior of the International Association for Suicide Prevention.

Gil Mor, M.D., and **Alessandro Santin, M.D.**, members of Yale Cancer Center, received more than \$5 million in federal and foundation grants in January to improve detection of ovarian

cancer and to find a cure for the disease. Santin received \$1.7 million, including two grants from the Italian National Institutes of Health and another from the National Cancer Institute (NCI) for \$346,000 per year for five years. Although Santin's NCI-funded research is focused on therapeutic vaccination strategies for the treatment of HPV-infected cervical cancer patients, he also studies therapies for the management of chemotherapy-resistant ovarian cancer.

Mor will use an NCI grant of \$314,000 per year for the next five years to better understand the mechanism by which ovarian cancer cells resist cell death. Another newly awarded five-year NCI grant totaling \$1,715,000 will fund Mor's research on the ways in which tumors influence the immune system to promote their own growth and progression. Mor also has three foundation grants that include \$150,000 per year for three years from the Janet Burros Memorial Foundation; \$50,000 per year for three years from the Sand Foundation; and \$50,000 from the Adler Foundation.

Pasquale Patrizio, M.D., director of the Yale Fertility Center and professor of obstetrics, gynecology and reproductive sciences, addressed the Italian Parliament in Rome in January on a 2004 Italian law that restricts in vitro fertilization (IVF) practices. According to Patrizio and other experts, the law has led to fewer pregnancies and higher rates of multiple births. The law limits insemination to three eggs per patient—if all three eggs result in fertilization, all three embryos must be transferred for implantation. The law also bars genetic screening to prevent the

transfer of embryos with lethal or severely disabling diseases. As a result, fewer Italian women are getting pregnant through IVF on their first try, causing them to go through multiple IVF cycles. Patrizio hopes that he convinced the legislature that the law does a disservice to Italian women and also encourages couples to seek fertility treatments in countries with less restrictive legislation.

Majid Sadigh, M.D., associate professor of medicine, was nominated by medical students for the Humanism in Medicine Award presented annually by the Association of American Medical Colleges. The award recognizes a medical school faculty physician who exemplifies the qualities of a caring and compassionate mentor in the teaching and advising of medical students. The candidate must also possess the desirable personal qualities necessary to the practice of patient-centered medicine. Although Sadigh was not named this year's recipient, he received a plaque in honor of his nomination. In addition to his duties at Waterbury Hospital, Sadigh directs the Makerere University-Yale University collaboration that sends medical students and physicians to Mulago Hospital in Uganda for rotations. The students wrote in their nominating statement that Sadigh "has been a source of inspiration and guidance to the many medical students he has encountered, both on this continent and on continents far away."

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to claire.bessinger@yale.edu

At Commencement, the PA Program's history

Alfred Sadler, the first director of Yale's Physician Associate Program, described its early days in the 1970s.

When Yale's Physician Associate Program was launched in 1971, 28 of the 30 members of the Class of 2008 had not yet been born. At their Commencement in December the graduates got a history lesson along with their diplomas. The lesson came firsthand, delivered by the co-founder and first director of the Yale program, Alfred M. Sadler Jr., M.D.

Physician associate programs have their roots in emergency care, and Yale's began as an experiment. "We were

designing the curriculum as we went along," Sadler said.

The Class of 2008 reflects the growth of the program in both numbers and scope. Whereas Yale's first graduating class of just five students left with a certificate in physician associate studies in 1973, this year's class—like others since 1999—earned a master's degree in medical science, the M.M.Sc. Dean Robert J. Alpern, M.D., Ensign Professor of Medicine, said the program was lengthened from two years to 28 months under his tenure, "which is why we're having Commencement on this freezing day" in December.

Sadler said the Yale program came into being when he and his twin brother organized regional emergency

medical services in Connecticut, creating a model that was copied nationwide. Meanwhile, Jack Cole, M.D., chair of surgery, had received a grant from the Commonwealth Fund to start a trauma program within the Department of Surgery. He and Sadler had both noticed that the military had produced army medics competent to treat trauma alongside doctors, and that "these professionals were actually practicing medicine," Sadler said. The two men then convinced Yale to create "the medical school's first experiment in nonphysician education."

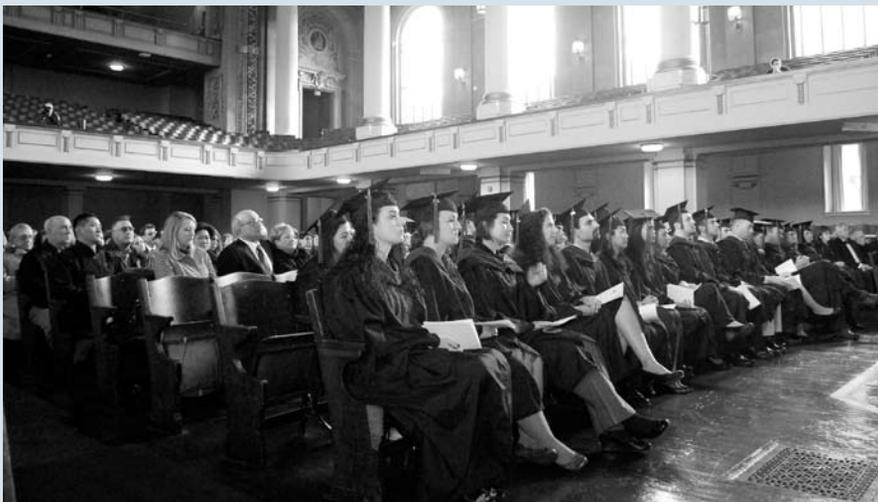
Sadler, who directed the program until 1973, spearheaded legislation to authorize physician associates to practice medicine in the state of Connecticut. As inaugural president of the Association of Physician Assistant Programs, he helped develop accreditation standards for the profession and worked with the National Board of Medical Examiners to create the first national board examination.

Yale has since graduated 895 students from the program. Today there are 142 programs nationwide, Sadler said.

At the Commencement ceremony William B. Stewart, Ph.D., associate professor of surgery (gross anatomy), and Shanta E. Kapadia, M.B.B.S., lecturer in surgery (gross anatomy), received the Didactic Instruction Award from students. Gerard J. Kerins, M.D., geriatrics section chief at the Hospital of Saint Raphael, received the Clinical Instruction Award for a clinical rotation site that provides exemplary teaching. The Jack Cole Society Award, for contributions in support of the physician associate profession, went to Paul P. Possenti, PA-C, lecturer in surgery (trauma).

Adam Cohn, PA '08, received the Dean's Award for Academic Achievement. Arielle Macher, PA '08, received the Dean's Award for Clinical Excellence, and Lauren Myers, PA '08, received the Dean's Humanitarian Award.

—John Dillon



JOHN CURTIS (2)

ABOVE The 30 members of the physician associate Class of 2008 heard about the history of the Yale program from one of its founders, Alfred Sadler Jr., who addressed the class at Commencement in December.

RIGHT Graduates Adam Cohn, Song Jin Comstock and Rachelle Concepcion read the professional oath of physician associates.



U.S. economy in free fall! Yale endowment down! Med school scrambles for \$\$\$!

Carrying on a 60-year-old tradition, the second-year class mocked its teachers and mentors with irreverence and affection at their show in February, “The Great ST Depression.”

The show’s 16 sketches centered on a loose plotline based on current events: the School of Medicine has lost its endowment and the dean is laying off faculty and eliminating financial aid. Entering survival mode, faculty and students must get part-time jobs—at s’wings or the Cedar Street food carts, for instance—or as Dean Robert J. Alpern, M.D., Ensign Professor of Medicine, suggests in one sketch, by holding up and robbing s’wings, a Crown Street eatery.

The cast of characters was familiar. Associate Dean for Student Affairs Nancy R. Angoff, M.P.H. ’81, M.D. ’90, HS ’93; Alpern; and Margaret J. Bia, M.D. (played by Larissa Chiulli, Derek Kennedy and Lauren Hackney, respectively) all received considerable skewering. Standout moments included the song “Docta Bia,” based on ABBA’s “Mamma Mia” and Jennifer Lopez’s “Jenny from the Block”; a video sketch featuring Shanta E. Kapadia, M.B.B.S., dishing up Indian food at a cart on Cedar Street; and the song “My Goodies/Rizzilicious,” featuring Matthew Singleton on stage and Carl Berdahl as the voice of Lawrence J. Rizzolo, Ph.D., based on Ciara and Petey Pablo’s “My Goodies” and Fergie’s “Fergilicious.”

Other highlights included a 14-member orchestra; a video parody in which David L. Katz, M.P.H. ’93, M.D.,



JOHN CURTIS (3)



played an overadrenalized juice fanatic; and a video screening of the Class of 2011’s class prank—a parody of a *Saturday Night Live* sketch about bodily functions in which faculty made faces of delight or disgust. “Our faculty had a great sense of humor and recognized that we only make fun of them out of love and respect,” said Patricia Peter, one of the show’s two executive producers.

Planning for the show began last summer, and about 90 of the class’ 100 members participated. “We’re very proud of how collaborative it was,” said co-producer Janet Chiang. Henry Park directed the show.

—Charles Gershman

BELOW The Class of 2011 took affectionate potshots at faculty in February with their second-year show, “The Great ST Depression.” Ripped from the headlines, the show’s plot revolved around efforts to keep the School of Medicine functioning during an economic decline.



ABOVE LEFT Gisella Weissbach-Licht, played by Lauren Graber, chastises faculty members James Jamieson, played by Ben Goldberg, and Michael O’Brien, portrayed by John Thomas, for spending too much money and getting the medical school into a financial crisis.

ABOVE RIGHT A highlight of the show was “My Goodies/Rizzilicious,” featuring Matthew Singleton as anatomy professor Lawrence Rizzolo. The number was based on Ciara and Petey Pablo’s “My Goodies” and Fergie’s “Fergilicious.”

Alum finds fascination in disease and the end of life

Robert Buckingham's career has taken him around the world as he studies HIV/AIDS, prostitution and hospice care.

Robert Buckingham, PH.D. '78, saw a lot of people die when he served in the U.S. Navy during the height of the Vietnam War. But he was more drawn to illness-related mortality, even in



DARREN PHILLIPS

Robert Buckingham, an epidemiologist at New Mexico State University's College of Health and Social Services, works around the world on AIDS prevention among sex workers and has been instrumental in developing hospice care.

combat zones. "In my travels throughout Southeast Asia during the war, I saw a lot of disease and death," he said. "I got fascinated with diseases."

Buckingham's career has run on the tracks of disease and death ever since. Usually the tracks are parallel, but they have also diverged and intersected, frequently taking him back to the places in Southeast Asia where his interest was first sparked.

For Buckingham, an epidemiologist and professor of health science at New Mexico State University's College of Health and Social Services, the intersection became personal as he entered the School of Public Health in the 1970s. His mother had just died of breast cancer, "so I was interested in the care she got—and the lack of care." His frustration over the hospital's aggressive attempts to keep her alive instead of alleviating her suffering led him to become involved in palliative treatment.

At the same time, the late Florence S. Wald, R.N., the former dean of the School of Nursing, was trying to establish the first inpatient hospice in the United States. Under Wald's tutelage, Buckingham helped to write a grant proposal that led to funding for hospice care. In researching his doctoral dissertation, he came to the conclusion that care for the dying was better in a hospice than in a hospital.

The Connecticut Hospice opened in Branford in 1974. Today there are about 8,000 hospices around the world (including more than 4,500 in the United States), according to Stephen Connor, PH.D., vice president of research and international relations at the National Hospice Foundation. Buckingham had a hand in developing

about 90 of them. “Bob is remarkably intelligent and capable,” Connor said. “He certainly is someone well-regarded in the field.”

Buckingham moved on to other areas of public health, notably HIV/AIDS prevention among sex workers. He returned to Thailand as the AIDS epidemic spread and has since studied condom use among prostitutes in that country’s commercial sex industry and started a pediatric hospice for children with AIDS there. He spent the 2000-2001 academic year “developing programs for commercial sex workers as well as treatment programs for workers who were HIV-positive.” Before his research began, only 11 percent of sex workers’ clients had used condoms. His study, published in the journal *AIDS Care* in 2005, found that the rate had risen to 51 percent. It wasn’t ideal, but in some brothels as many as 89 percent of the workers’ clients use condoms, and overall the HIV rate in Thailand has “decreased significantly,” he said. Buckingham concluded that more focus needs to be put on native Thai patrons, who are less likely to use condoms than Western or other Asian customers.

Buckingham is trying to transfer that model of HIV prevention to prostitution in Latin America. One such place is Ciudad Juárez, Mexico, just across the border from El Paso, Texas, and not far from his campus in Las Cruces, N.M. “When you see poverty you see prostitution, and when you see prostitution you see disease,” he said. He has encountered little opposition from the authorities, even though Mexico is a heavily Roman Catholic country. “We usually don’t get interference,” he said. “We’re trying to help.”

Most recently, Buckingham has been asked by the government of Honduras to form the country’s first health commission. The need for health care is acute, especially for people living on the islands off the coast where care is “nonexistent,” he said. “What we’re doing is a simple needs assessment affecting the country.” He plans to get the project in full swing while on sabbatical in 2009-2010.

Honduras also has a disproportionately high share of Central America’s HIV/AIDS cases—some estimates have it as high as 60 or 70 percent—so Buckingham will work to promote condom use there. He will also likely be working with the dying, because he helped to establish a hospice in that country.

His work with hospices and sex workers isn’t all that divergent, he said—in fact, the two tracks crossed one day in Thailand. He was interviewing prostitutes when a woman, wrongly assuming that he was a physician, begged him to care for her sick infant. “I said, ‘I can’t take care of your baby,’ and gave it back to her. She said, ‘No, no!’ and just ran away. We brought it to the medical school. Sure enough, the baby was HIV-positive. Word went out that I found a place for these dying kids.”

Buckingham helped set up a hospice there, too. “Life is weird sometimes,” he said.

—*John Dillon*

An international traveler makes himself at home in the world’s great libraries

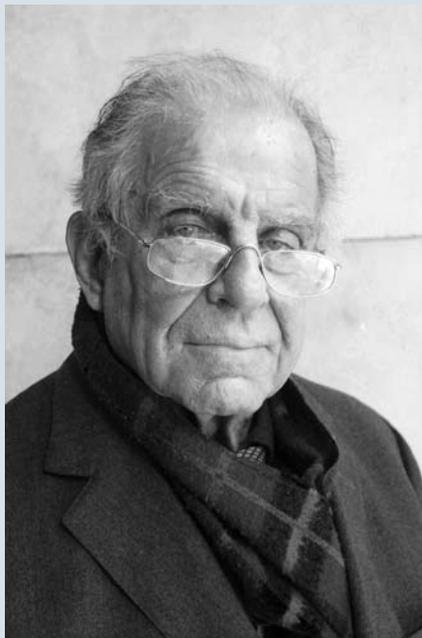
Wherever **Stanley Simbonis**, M.D. ’57, travels, he visits the local library. If it’s Athens, you’ll find him in the Gennadius Library at the American School of Classical Studies, or the archeological library at the British School at Athens, where he reads about the origins of language and writing. This research, of course, occurs after his annual six-week course in the Greek language at the University of Athens.

“The library is the heart and soul of the university,” said Simbonis, who is, not surprisingly, a trustee of the Cushing/Whitney Medical Library. “It’s the guts of the university, the crown jewel. How can you do without it? It’s been a storehouse of knowledge throughout the ages.”

If it hadn’t been for libraries, Simbonis might never have made it to the School of Medicine.

Born in Manhattan in 1928 to emigrants from Greece, Simbonis lived in a tenement apartment in the Bronx with his mother and brother; his father died when he was 8. Simbonis loved to look at the handful of books in his home until he discovered the public library on Washington Avenue; then he started to read everything from Churchill to calculus. At 13, when he finished school for the day, he wandered into the libraries and classrooms of Fordham University, where a chemistry professor allowed him to sit in on classes.

Simbonis’ junior high school science teacher steered him to the Bronx High School of Science, which still enjoys a reputation as one of the best



JOHN CURTIS

Wherever Stanley Simbonis travels, he always makes a point of visiting the local library. “The library is the heart and soul of the university,” said the retired pathologist, who is still an associate clinical professor at Columbia University’s College of Physicians and Surgeons. “It’s been a storehouse of knowledge throughout the ages.”

college preparatory high schools in the country. He grew restless, however, in part because the school had no sports or even a gym at that time, and he dropped out at age 16.

“My original dream was to be a center fielder for the Yankees and then I tried to become a musician,” he recalled. “Medicine was my third choice.”

In the 1940s, trying out for a professional baseball team did not require an agent or experience. Simbonis just showed up at Yankee Stadium. He also took a crack at the Dodgers. Neither team hired him, so he knocked on doors all along Broadway to audition as a big band drummer. “I could barely

keep a beat,” he said. He did, however, meet bandleaders Louis Prima and Harry James.

Still uncertain of his career path, he took on three menial jobs, delivering newspapers on Wall Street at 5 a.m., running mail for a ship’s broker and washing dishes at the Horn & Hardart automat. “The dishwashing really woke me up,” Simbonis said. “I thought, ‘What the hell am I doing here? It’s obvious that I have to go to school.’ The GI Bill sounded pretty good.”

Simbonis enlisted in the Marine Corps on September 2, 1945, the day the Japanese surrendered to the Allied forces, and began to pursue his high school equivalency degree. Because he took more than a dozen of the academic classes the Marines offered, he was called to the Marine Corps school in Washington, D.C., to teach English.

Simbonis planned to go to Columbia University and live at home after leaving the service, but his mother had remarried and moved to New Haven. He followed her to the city and enrolled in Yale College. Simbonis lived off campus above the Sisk Funeral Home on Howe Street, where he earned \$25 a month and a free apartment for answering the telephone in the middle of the night. He majored in zoology and earned his undergraduate degree in 1953.

Simbonis then entered the School of Medicine, where he took an interest in pathology because it allowed time for research. After graduating he worked in the New York University lab of biochemist Severo Ochoa, M.D., who won the 1959 Nobel Prize for medicine or physiology for his discovery of an enzyme that can synthesize RNA. “Ochoa was brilliant, but also fun-loving,” Simbonis

remembered. “He bought a red sports car with his prize money.”

After stops at Columbia University and Holy Name Hospital in Teaneck, N.J., Simbonis settled down at St. Joseph’s Hospital in Paterson, N.J., where he became chair of pathology. He retired in 1992 but remains an associate clinical professor of pathology at Columbia University’s College of Physicians and Surgeons, where he still audits classes.

Teaching, he said, was his greatest contribution to pathology. “I hope I was able to convey to students how to examine slides and specimens, and then *think* fiercely on how to synthesize the material at hand to arrive at reasonable conclusions,” Simbonis recalled. “It wasn’t an easy task but it was really worth the effort.”

Since 1975 Simbonis has lived in a historic brownstone in Greenwich Village, where he is active in neighborhood preservation. Divorced, he has no children. He travels widely and owns an apartment in Athens. He also has a vacation home on Fire Island, N.Y., which he has willed to the School of Medicine. The home will be sold upon his death and the proceeds divided between the library and a scholarship to be set up in his name. It will be a fitting gift from a lover of libraries.

—Alix Boyle

A life in public health takes an alumnus around the world and back to Brooklyn

Research, teaching and other projects have exposed **Michael A. Joseph**, M.P.H. '96, PH.D., to Zimbabwean health crises, the Bedford-Stuyvesant–Crown Heights AIDS epidemic and tuberculosis (TB) affliction in South African provinces. No matter where he has traveled, however, he has always returned to SUNY Downstate Medical Center in Brooklyn, where his interest in public health began.

Joseph's wide-ranging path wasn't what he'd imagined growing up in Brooklyn. Although he had planned to become a doctor, the premed courses at Brooklyn College turned him away from medicine. He switched his major to health science and secured an internship at Downstate. Assisting the late Rachel G. Fruchter, M.P.H., PH.D., then-associate professor of obstetrics and gynecology, in researching gynecological cancers among minority and immigrant women, he said, "allowed me as an undergraduate to see a research project from inception to completion." It also connected him to the institution that would become his professional touchstone.

"By my second epi course, I fell in love with the hands-on detective work linking an exposure to a health outcome," recalled Joseph, who was encouraged by professors to pursue an M.P.H. At the School of Public Health he served as a teaching assistant during his second year, where his love affair with teaching began and spurred him toward a PH.D. Joseph's master's thesis was based on his analysis of Fruchter's data.

For his doctoral work, he went to the University of Michigan and assisted

in the teaching of master's-level biostatistics and epidemiology courses. There, he said, "I was trained by the best of the best in epidemiology: Siobán Harlow, Sherman James and David Schottenfeld." He continued exploring a theme from his Downstate internship—minority health—for his dissertation, "Risk Factors for Lower Urinary Tract Symptoms in African-American Men."

Strong family ties lured Joseph back to Brooklyn after he had completed his doctorate and was looking for a faculty position. When he heard about



Michael Joseph initially planned to become a doctor, but instead he went into public health. His studies and his work have taken him around the country and to Africa, but he has always returned to his home in Brooklyn, where he focuses on AIDS and tuberculosis.

Downstate's new public health graduate program emphasizing urban and immigrant health—a marriage of the themes that have guided his career—it seemed like a natural fit. “At a well-established public health school, I’d have less input, less room for innovation and growth,” he reasoned. “This was an opportunity to serve as a role model for a diverse student population.” Joseph’s lectures explore factors “prohibiting minority and underserved populations from engaging in healthy behaviors—including economic inequality, lack of employment opportunity, poverty and our failing health care system.”

Dedicated to both teaching and minority health, Joseph was invited on three occasions to teach an intensive biostatistics and epidemiology course to public health students at the University of Zimbabwe in Harare. “Africa is plagued by many infectious diseases, so students are in the field tackling outbreaks. What I teach here over 14 weeks, I had to teach there in two, from 9 to 5 daily. It was exhausting but quite fulfilling,” he said. Through Downstate’s HIV Center for Women and Children, he was invited in 2008 to train HIV and TB researchers at South Africa’s University of the Free State in Bloemfontein. “They had a wealth of data but needed assistance carrying out the next steps—conducting appropriate analysis or writing a manuscript for publication.”

An assistant professor of epidemiology, Joseph is the junior principal investigator on a grant from the Centers for Disease Control and Prevention, in which Downstate faculty collaborate with the Arthur Ashe Institute for Urban Health to target sexual behaviors that put heterosexual African-American

men at risk for HIV infection. In 2006, Joseph and his wife-to-be, Laretta Ansah, used funding from the National Black Leadership Commission on AIDS to support a ministry to educate the members of Bedford Central Presbyterian Church about the disease. “For years, the black church was silent about the AIDS epidemic because of stigma. Many in the black community still believe it’s largely a homosexual disease,” said Joseph.

Joseph always reaches out to peers. At Michigan, he mentored several students, including members of the Public Health Students of African Descent, a student-run group that was established over 21 years ago. He tutored master’s-level students struggling with epidemiology or biostatistics. He also co-founded the Black Young Professionals’ Public Health Network, also known as ‘The NETWORK.’ The NETWORK presents such programs for black attendees at American Public Health Association conferences as “Is Hip Hop Healthy for African American Females?” Poster sessions showcase research in health disparities by minority public health students and young professionals.

To Pascal J. Imperato, M.D., M.P.H., dean and Distinguished Service Professor of Downstate’s Graduate Program in Public Health, “Michael is extremely skilled in teaching epidemiological concepts [so that students are] engaged and encouraged to reach beyond their own perceived limits. His introductory epidemiology course is one of the most popular in the graduate program.” Joseph’s students consistently give him top ratings as teacher, mentor and role model.

After interviewing at Downstate

in 2004, Joseph remembers thinking, “They loved me, I loved them, it’s a great fit.” For his work there, he was inducted into Delta Omega, the public health honorary society. Michael Joseph knows he’s in the right place.

—Carol Milano

Familiar Faces

Do you have a colleague who is making a difference in medicine or has followed an unusual path since leaving Yale? We’d like to hear about alumni of the School of Medicine, Physician Associate Program and the medical school’s doctoral, fellowship and residency programs. Drop us a line at ymm@yale.edu or write to Faces, Yale Medicine, 300 George Street, Suite 773, New Haven, CT 06511.



Lionel Nelson

Juanita
Merchant

1960s

Lionel M. Nelson, M.D. '69, writes from Camp Stryker in Baghdad, where he is a colonel in the Army and the brigade flight surgeon with Task Force 449: "I have been here a month now, and have fallen into the routine. The day starts at 0 dark 30 with my usual exercise routine. ... no different than home. I get to fly about once a week, usually something to attend to at one of our forward operating bases where we keep air crews, and a good excuse to get outside the wire and see some green fields. Parts of the Iraqi countryside along the rivers are quite beautiful. Otherwise, most of the day is a combination of staff duties (coordination, reports, briefs, etc.), supervising medical care for the task force personnel and overseeing the medical portion of our medevac operations. I have a staff of 25, with several physicians to help me with this. Operational tempo remains quite heavy, but threat level is relatively low at this time. I came out of retirement (21 years in, mostly as a reservist, and retired for five years) to do this. The need for flight surgeons with experience is significant. The Army asked, and I volunteered. I will be here about 90-120 days, and have temporarily closed my ENT practice in San José, Calif., for that time. Although I have had other deployments in the past, this is my first time in Iraq. It is great to be back around the aviators. Helicopter crews, particularly the Apache and medevac folks, are full of bravado and practical jokes. I am glad to have the opportunity to be here and help take care of these very dedicated and brave Americans."

Martin Wand, M.D. '67, was elected vice chair with succession to chair of the American Board of Ophthalmology. Wand is also the chair of the council and trustee of the 27,000-member American Academy of Ophthalmology. He specializes in glaucoma and remains in full-time practice with an eight-physician subspecialty group in Connecticut.

1970s

Laura M. Finkelstein, M.P.H. '79, and Lawrence N. Rothbart were married on November 17, at the River Café in Brooklyn. Finkelstein is a quantitative and qualitative market research consultant based in Brooklyn, where she works with financial service companies, advertising agencies and consumer packaged-goods companies. Rothbart is a lawyer in Manhattan specializing in matrimonial and family law.

1980s

Juanita Merchant, M.D. '84, PH.D. '84, professor of internal medicine and of molecular and integrative physiology at the University of Michigan Medical School, was named to the Institute of Medicine of the National Academy of Sciences in October. She was also named an Outstanding Woman in Science for 2008 by the American Gastroenterological Association Foundation for Digestive Health and Nutrition, in honor of her contributions to digestive disease science.

1990s

Michael A. Coady, M.D., M.P.H. '97, has been named cardiac surgeon at The Miriam Hospital

in Providence, R.I. He is also chief of surgery at Landmark Medical Center in Woonsocket, R.I.

2000s

James M. Kessler, M.D., M.P.H. '01, was married to Jessica A. Bassik in Kings Point, N.Y., in November. Kessler is a third-year radiology resident at Jacobi Medical Center in the Bronx. He graduated summa cum laude from the American Jewish University in Los Angeles. He received a master's degree in public health from Yale and a medical degree from Johns Hopkins. His wife is a third-grade teacher at Public School 75 in Manhattan.

John Strasswimmer, M.D., PH.D., HS '03, was part of a group that traveled to Malawi in September to assess the surgical needs of albino patients and to determine how dermatologic surgeons can help. Strasswimmer is a Mohs surgeon in Delray Beach, Fla.

SEND ALUMNI NEWS TO
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to claire.bessinger@yale.edu

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Rebecca L. Calderon, M.P.H. '81, PH.D. '86, died on December 21 at her home in Chapel Hill, N.C., after an 18-month struggle with lung cancer. Since 2004 Calderon served as director of the human studies division of the National Health and Environmental Effects Research Laboratory at the Environmental Protection Agency.

William A. Clermont, R.N., M.P.H. '57, died on December 22 at Fort Pierce Hospice House in Fort Pierce, Fla. He was 92. Clermont served as a medic in the U.S. Army in England during World War II and was a hospital administrator at Alice Hyde Memorial Hospital in Malone, N.Y.

Charles H. Crothers, M.D. '44, HS '48, died on January 10 of cancer at his home in Van Buren, Ind. He was 88. Crothers practiced pediatric medicine in Connecticut for more than 40 years. After serving in the U.S. Army in the Philippines, he returned to Grace-New Haven Community Hospital in 1948, where he was chief resident and assistant professor of pediatrics. In 1952 he began a private practice in New Britain, Conn.

Nicholas D. D'Esopo, M.D. '36, died on December 12 at his home in Woodbridge, Conn. He was 99. During the 1940s D'Esopo conducted studies that led to the development of combined chemotherapy for the treatment of tuberculosis. From 1953 until 1985, he was chief of the pulmonary disease service at the West Haven VA Medical Center. He was also a clinical professor of internal medicine at the medical school until 2004.

Rocko M. Fasanella, M.D. '43, chief of ophthalmology at

Yale from 1951 to 1961, died on February 11. He was 92. Fasanella established the ophthalmology residency program and headed the section when it was still within the Department of Surgery. He laid the foundation for ophthalmology's growth into a freestanding department with its own full-time faculty. He is known for a surgical technique that bears his name and is still widely performed, the Fasanella-Servat procedure for drooping eyelid, which was developed with Javier Servat, M.D. His popular textbook, *Management of Complications in Eye Surgery*, was a must-read in the 1960s and 1970s.

Francis R. Fekety Jr., M.D. '55, died at Parkcliffe Alzheimer's Community in Toledo, Ohio, on January 6. He was 79. After service in the U.S. Public Health Service and a teaching appointment at Johns Hopkins University, Fekety established and was named chief of the Infectious Diseases Division of the Department of Internal Medicine at the University of Michigan Medical School. He was on the faculty there from 1967 until his retirement in 1995.

Joanne E. Finley, M.D., M.P.H. '51, died on October 15 in Baltimore, Md. Finley was the commissioner of health in New Jersey from 1974 to 1982 and deputy secretary of health for the state of Maryland from 1983 to 1984.

Dennis R. Hamilton, M.P.H. '71, died on September 16 in New Hampshire of a heart attack. He was 66. A resident of New Haven, Hamilton was in New Hampshire working on a photo exhibit for Amman Imman, a project started by Ariane Kirtley,

M.P.H. '04, to bring water to remote areas of the African country of Niger. Although retired, Hamilton was active in New Haven's progressive community and was associate director of Amman Imman. An accomplished pianist, Hamilton often played at his friends' birthday parties.

Edward H. Hon, M.D., HS '55, died on November 6 at his home in Bradbury, Calif. He was 89. Hon worked with Orvan Hess, M.D., to invent electronic fetal heart rate monitoring at Yale in the 1960s. Born in China to Australian parents in 1917, he grew up in Australia and came to the United States in 1945 to attend Loma Linda Medical School, then known as the college of Medical Evangelists of the Seventh-Day Adventist Church. Hon and Hess published their landmark paper on fetal electrocardiography in *Science* in 1957. Hon received numerous awards, including the Distinguished Service Award of the American College of Obstetricians and Gynecologists.

Robert F. Husted, M.D. '54, died on December 6 from complications of pneumonia in Baltimore, Md. He was 80. Husted was a longtime resident of Wichita, Kan., and a world-renowned anesthesiologist. From 1957 to 1959 he was a captain in the U.S. Army and served at the Edgewood Chemical Biological Center in Aberdeen, Md. In 1959 he became an instructor in anesthesiology at Johns Hopkins University School of Medicine, where he started the anesthesiology department. In 1961 he moved to Kansas City to take a position as assistant professor at the University of Kansas School of Medicine. He patented numerous medical

devices and invented the Husted epidural needle, used to eliminate childbirth pain.

W. Raymond James, M.D. '44, died on December 16 at his home in Essex, Conn. He was 89. After an internship in Los Angeles and a residency at Columbia Presbyterian Hospital in New York, James and his wife moved to Essex in 1948, where he practiced medicine. A proponent of regionalization and special education, he served on the Essex Board of Education and the Region 4 Board of Education. He was also a health officer in area towns and won awards for his efforts to clean up the polluted lower Connecticut River.

Mildred H. January, M.D. '35, died on January 5 in West Hartford, Conn., after a long period of failing health. She was 101. After postgraduate training January specialized in psychiatry and psychoanalysis. She maintained a private practice in Hartford, Conn., and was affiliated with clinical settings in Stamford, New Britain, New Haven and Hartford.

Edward M. Kenny, M.P.H. '63, died on November 26 of prostate cancer. He was 78. Kenny was the assistant administrator at Stamford Hospital from 1963 to 1965; assistant administrator at Manchester Memorial Hospital from 1965 to 1967; executive director of Manchester Memorial Hospital from 1967 to 1983; and president and CEO of the Greenwich Hospital Association from 1984 to 1991. He served for more than two decades in the U.S. Army Medical Service Corps and retired with the rank of lieutenant colonel in 1979. He was a recipient of the Connecticut Hospital Association

T. Stewart Hamilton, M.D., Annual Award for Distinguished Service and was a member of the boards of Workers' Compensation Trust, Opportunity House (for autistic residents) and Milford Hospital.

James M. Lansche, M.D., HS '53, died on November 2 in Pocatello, Idaho. He was 78. Lansche became the first neurosurgeon in Pocatello when he moved there from California in 1972. He was chief of staff at the Bannock Regional Medical Center and served on several professional boards, including the State Board of Medical Discipline, as well as in numerous civic and professional organizations. After retiring in 1992, he spent much of the year at his cabin on Henry's Fork of the Snake River.

Anthony Lovell, M.D. '67, died on November 15 at his home in Springfield, Mass., of a glioblastoma. He was 68. Lovell had recently retired after 35 years as a cardiologist in Springfield. The son of a lobsterman on Cape Cod, Lovell earned money for college and medical school by shell fishing and commercial fishing. Long interested in serving the community, he helped initiate one of the region's first cardiac rehabilitation programs at the Springfield YMCA.

John L. Mahoney, M.D. '63, HS '69, died on October 5 of prostate cancer at his home in Oakland, Calif. He was 71. After an internship at Seton Hall University Medical Center in New Jersey, Mahoney joined the U.S. Marine Corps as a captain and instructor in neuropsychiatry. In 1973 Mahoney took a position as staff psychiatrist at Highland General Hospital in Oakland. He also started a private practice,

consulted at senior living centers and in 1999 became staff psychiatrist at San Quentin State Prison. In 2004 he transferred to Solano State Prison. He retired in 2006.

Hugh J. McLane, M.D. '46, died at his home in the Laurel Lake Retirement Community in Hudson, Ohio, on January 11. He was 85. After attending Amherst College and the School of Medicine, McLane served in the U.S. Army Medical Corps in Berlin from 1947 to 1949. He completed his residency in internal medicine at Henry Ford Hospital in Detroit. He practiced internal medicine in Fond du Lac, Wis., for more than 40 years and retired in 1992. He served as president of the Fond du Lac Medical Society and president of the Wisconsin Heart Association.

Allan R. Oseroff, M.D. '76, PH.D., died on October 16 in Buffalo, N.Y. He was 65. Oseroff was chair of dermatology at the University of Buffalo and at the Roswell Park Cancer Institute in Buffalo. He was internationally recognized for the photodynamic treatment of skin cancer.

Frederic M. Richards, PH.D., a structural biologist and an innovative leader in the study of the relationships between protein structures and their biological functions, died of natural causes at his home in Guilford, Conn., on January 11. He was 83.

Richards, professor emeritus of molecular biophysics and biochemistry, was instrumental in the development of molecular biophysics and structural biology at Yale and nationwide. His most paradigm-shifting experiment, published in 1958, provided the first evidence that

a protein peptide's ability to form a three-dimensional structure is an intrinsic property of its amino acid sequence.

Richards obtained his PH.D. at Harvard in 1952. He pursued postdoctoral research at the Carlsberg laboratory in Copenhagen, Denmark, and at Cambridge University in England. In 1955 he joined the biochemistry faculty at Yale and in 1963 merged the departments of biochemistry and biophysics to form the Department of Molecular Biophysics and Biochemistry, with a mandate to move the department into the new field of molecular biology. Between 1963 and 1967 and from 1969 to 1973, as chair of this new department, Richards initiated the development of one of the major centers in the world for the study of biophysics and structural biology.

Richards was a member of the National Academy of Sciences the American Academy of Arts and Sciences, and the American Philosophical Society. He was awarded the Connecticut Medal of Science in 1995.

Samuel Ritvo, M.D. '42, a faculty member at the Yale Child Study Center for nearly six decades, died on December 3 while hospitalized for treatment of lymphoma in Maryland. He was 91. Ritvo graduated from Harvard College in 1938. He trained in pediatrics at the University of Minnesota and in pediatrics and psychiatry at Columbia University in New York. He joined the Yale faculty in 1950 as part of the reorganization of what became the Child Study Center and held the rank of clinical professor of psychiatry from 1965 until his retirement in 2007. The first director of training in child psychiatry at Yale, Ritvo was a training and supervising analyst at the

New York Psychoanalytic Institute and the Western New England Institute of Psychoanalysis in New Haven. A highly respected teacher and clinician, Ritvo trained generations of child psychiatrists.

Jerome H. Shapiro, M.D. '48, died on October 14 in Bedford, Mass., from complications of Alzheimer disease. He was 84. Shapiro served in the U.S. Army during World War II and completed his medical education following his discharge. He was president of the Massachusetts Radiological Society, the New England Roentgen Ray Society and the American College of Radiology (ACR). He received the ACR gold medal in 1992 and a gold medal from the Radiological Society of North America in 1996.

Ellis J. Van Slyck, M.D. '47, died on December 20 in Grosse Pointe, Mich. He was 84. After his residency and service in the U.S. Army Medical Corps during the Korean War, Van Slyck joined the hematology division at Henry Ford Hospital in Detroit. He authored or co-authored 80 publications about his specialty, cancer and hematologic disorders. From 1981 to 1983 he chaired the medical advisory board of The Children's Leukemia Foundation of Michigan.

SEND OBITUARY NOTICES TO Claire M. Bessinger, *Yale Medicine*, 300 George Street, Suite 773, New Haven, CT 06511, or via e-mail to claire.bessinger@yale.edu



A student-run free clinic grows and thrives

The idea was simple—free primary health care for the uninsured. Five years ago students in medicine, nursing and public health and in the Physician Associate Program opened the HAVEN Free Clinic in partnership with the Fair Haven Community Health Center (FHCHC). [See “Students Reach Out to the Uninsured at Free Medical Clinic in Fair Haven,” *Yale Medicine*, Autumn 2006.] Supervised by faculty from the schools of medicine and nursing, the students saw three or four patients a week. Now HAVEN serves more than 20 patients a week during its Saturday morning hours. Unlike the FHCHC, which has a sliding scale, HAVEN does not charge for its services or for medications.

Since its beginnings five years ago, the student-run clinic has added services to meet the needs of its growing patient population, said Susan Mathai, a fourth-year medical student and one of HAVEN’s directors. In response to student observations of unmet mental health needs among female patients, a support and educational group for women has been started. A new program for latent tuberculosis patients is improving medication adherence. HAVEN’s expanded capacity and services have been made possible by a variety of gifts and grants from members and friends of the medical school community and such philanthropic organizations as the Community Foundation for Greater New Haven and the Gilead Foundation.

Along with more services have come more opportunities for students to learn about the challenges of caring for low-income patients. HAVEN has drawn on the FHCHC professional staff, volunteers from the medical school community and full-time faculty members to serve as attending physicians. According to Frederick Haeseler, M.D., associate clinical professor of medicine and HAVEN’s medical student advisor, faculty volunteers value the opportunity to teach committed students and help care for patients in need.

“A lot of good things are possible,” said Mathai.
—*Colleen Shaddox*



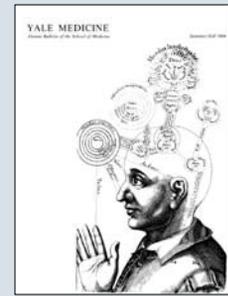
Alumni Day 1959
—*Alumni Bulletin*
May 1959

“Those who attended the February Alumni Day activities at the School of Medicine were privileged to hear a stimulating panel discussion on ‘Recent Advances in Cardiovascular Surgery at Yale.’ This program was arranged and moderated by Dr. William W.L. Glenn, associate director of surgery, who heads the section of cardiovascular surgery. ...

“The growth of cardiovascular surgery at Yale has been possible through the integrated efforts and cooperation of various departments in the School of Medicine, and it was not possible to include all who have been active in this important field. ...

“Recent advances in the diagnosis of heart disease in the adult were reviewed by Dr. Allan V.N. Goodyer (‘42), associate professor of medicine, who heads the cardiovascular section of the Department of Medicine. He was followed by Dr. Richard L. Barach (‘49), assistant professor of radiology, who presented a remarkable motion picture taken during fluoroscopy to illustrate cineangiography in the diagnosis of congenital heart disease. Features of various anomalies amenable to right heart bypass were discussed by Dr. Marie J. Browne, clinical fellow in rheumatic fever and heart disease, of the Department of Pediatrics.

“In conclusion, Dr. Glenn contributed some observations on the breadth and scope of cardiac surgery. A pump oxygenator (heart-lung machine) currently being used in open heart surgery was demonstrated. As a special bonus, Dr. Alexander Mauro, assistant professor of physiology, was called upon to describe a newly developed electronic cardiac pacemaker. ... which recently underwent its first clinical trial successfully.”



... In Progress: Cancer
—*Yale Medicine*
Summer/Fall 1984

“The National Cancer Institute recently awarded a grant of \$421,000 for support for three years of research being conducted by Dr. Sara Rockwell on the use of perfluorochemical emulsions as adjuncts to radiotherapy. The target for this research is improved treatment of those solid tumors which are resistant even to the best of current treatment. ...

“In preliminary studies, Dr. Rockwell and her colleagues have found that infusing laboratory animals that have breast cancer or sarcomas with Fluosol and having them breathe oxygen before and during radiotherapy increases the number of tumor cells killed by radiation, but does not increase the toxicity of the radiation to the blood-forming cells of bone marrow. Further studies will examine the effect of Fluosol treatment on other tumors and other normal tissues, to evaluate whether this agent in combination with radiotherapy has the potential for effective treatment of solid tumors in humans.”

FROM A DONOR IN THE ANATOMY LAB, A FINAL LESSON

Four first-year medical students in the anatomy lab watched closely in February as Shukrulla Ghofrany, M.D., lecturer in surgery (gross anatomy), hunted for the .22-caliber bullet in the body of the donor they'd been studying since the fall. An X-ray showed that it was lodged near the 12th vertebra, and Ghofrany was struggling to find the shell, which had gone untouched for 73 years.

"The bullet is intact, so we know it didn't hit bone," said William B. Stewart, Ph.D., chief of the section of anatomy and experimental surgery, as he studied the X-ray.

While Ghofrany probed, student Rany Woo methodically kneaded the donor's kidney. "What's that?" she asked. Moments later, she held the bullet in her gloved hand as classmates crowded around.

The students couldn't have known it, but the man who donated his body after learning he had incurable lymphoma would have taken great satisfaction from this scene. C. Charles Peterson, "Chuck" to family and friends, "loved to teach," said his widow, Carolyn.

Peterson was 7 years old when his playmate accidentally shot him with a gun the boys had found in a neighbor's bedroom. The doctors left the bullet because Peterson was unbothered by it.

Peterson lived a full life until his death in December 2007 at the age of 80. He married and had five children, served in the Naval Air Corps as a night carrier pilot, initiated an after-school computer program while teaching in Missouri in the 1960s, wrote and taught a hands-on science program for the American Association for the Advancement of Science, and was vice president of Middle East programs for Sikorsky Aircraft.

Peterson shared his wish to donate his body with his family, who, after some agonizing, agreed. "Dad was a teacher and a scientist, and furthermore, he loved to work," son Charles said. "This is the very thing he'd want, that after he died, he'd have a job to do."

—Jennifer Kaylin



JOHN CURTIS

First-year medical students Josh Au, Chineme Enyioha, Rany Woo and Kenneth Ike examined the .22-caliber bullet they found in the body of their anatomy lab donor. The donor had been shot accidentally by a playmate 73 years earlier, but the bullet was never removed.

1944
sixty-fifth

1949
sixtieth

1954
fifty-fifth

1959
fiftieth

1964
forty-fifth

1969
fortieth

1974
thirty-fifth

1979
thirtieth

1984
twenty-fifth

1989
twentieth

1994
fifteenth

1999
tenth

2004
fifth

Embrace the past. Explore the future.

Join us for a weekend of celebration!
Yale School of Medicine Alumni Reunion Weekend
June 4–6, 2009



Weiss

PROGRAM HIGHLIGHTS

Thursday June 4

- 14th Annual Yale Surgical Society Spring Reunion
An Evening to Honor Robert Weiss, MD
- 5th Annual Yale Physician Associate Alumni Spring Reunion
The State of the Yale Physician Associate program with Assistant Dean Mary L. Warner, PA-C



Warner

Friday June 5

- Campus Tours:
Historical Library Tour and Discussion
Guided Walking Tour of the Yale Medical School Campus
- Welcome Reception and New England Lobster Dinner
Greeting by Dean Robert J. Alpern, MD



Alpern

Saturday June 6

- Reunion Symposium:
Biological Therapies in Cardiology, Michael Simons, MD '84
Oxygen and the Biology of Cardiovascular Disease, Frank J. Giordano, MD
- State of the School with Dean Robert J. Alpern, MD
- Afternoon Campus Tours:
Historical Library Tour and Discussion
Tour of Yale's West Campus
Hard Hat Tour of Smilow Cancer Hospital
- Class Dinners and Photos



Simons



Belitsky

ALSO THIS SPRING

Monday May 4 — New York

- Yale's Vision for Medical Education: Affirming Values, Defining Priorities and Renewing the Curriculum, Richard Belitsky, MD, Deputy Dean for Education
The Yale Club of New York, 50 Vanderbilt Avenue, New York



Silverman

Thursday May 7 — Chicago

- An evening with Richard A. Silverman, Director of Admissions
MK The Restaurant, 868 North Franklin, Chicago

For additional information about Reunion Weekend contact Mary Meehan, Director of Alumni Affairs,
(203) 436-8540 or email mary.meehan@yale.edu.