

Yale Medicine

fall/winter 2004

“It’s hard to think about
AIDS when staring down
the barrel of a gun.”

A LETTER FROM HAITI

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Yale’s provost
becomes a president

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“Hit list” targets AIDS
researchers

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How a protein finds
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FALL/WINTER 2004

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Hurricanes devastated Haiti this fall, but early this year the country was the scene of a political storm of protests against President Jean-Bertrand Aristide. In the weeks before he fled the country, violent demonstrations were a common sight in the capital, Port-au-Prince, as government soldiers, Aristide's armed supporters and antigovernment protesters clashed in the streets. Here police stormed a hospital after a demonstration turned violent.

BACKGROUND

Murals cover the walls of the home of Uncle Big, a voodoo doctor with an unusual message for his patients—he has no power to treat or cure AIDS.

BACK COVER

A candle in a voodoo ceremony serves as a medium to link humans with spirits.

Video stills by Amelia Shaw

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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.



Sally Provence's autism work deserves mention

The article on autism in the Summer 2004 issue brought back interesting memories. In 1953 I was on the pediatric house staff, and my first experience with autism was in the family: a nephew who did not walk or talk at age 2, did not seem to relate to others, had odd and limited food preferences and could spend much of his day sitting in the corner spinning toy tops.

We asked Sally Provence of the Child Study Center to see him. She made the diagnosis of autism. Since his parents were busy with three other children and their work, etc., Sally suggested he live with his grandparents for a year. They were retired and could give him their full attention. Within the year the boy was relating to others and talking. Today he lives alone and holds a responsible technical job that requires some contact with others.

Naturally the family gives full credit to Dr. Provence for this success. She deserves recognition for her insight into the psychological problems of children.

*Ira Gabrielson, M.D., HS '53
Drexel University
College of Medicine
Philadelphia, Pa.*

Rolling tells a story that needs to be heard

Thank you so much for including an article about Gretchen Berland's documentary *Rolling* ["Life on Wheels," Summer 2004]. I had heard a great deal about this film and became convinced even more that this was a "must-see." I, too, use a wheelchair; many of the experiences portrayed seemed to have mirrored my own quite closely.

I was especially intrigued that Dr. Berland chose subjects who were not "down and out," but rather were people who had had and continue to have enriching lives. I hope that I have been successful in convincing the chair of my department that Dr. Berland's work is something that should be seen by the rest of the faculty. I am sure that by seeing *Rolling*, awareness of and sensitivity to the multitude of experiences of others in wheelchairs will be greatly enhanced.

*Cindy R. Miller, M.D.
Section Chief, Pediatric Radiology
Yale-New Haven Hospital*

First among surgeons, last in the spotlight

I noted the letter in the Summer 2004 issue of *Yale Medicine* about Max Taffel. I was a resident in surgery at Yale from 1960 through 1966, and during that period had an occasion to visit Max Taffel at his home one evening along with several of my resident colleagues. Although he rarely discussed his past, we did hear a bit of his World War II experiences while at One Tree Hill in New Zealand performing surgery for injured soldiers from the South Pacific campaigns. Most of the evening's discussion was about various surgical subjects.

At one point I walked past a small room that contained a desk, books, lots of papers strewn here and there and a few framed things on its walls. One of the framed objects was a certificate from the American Board of Surgery. Looking closer, I saw that it was certificate No. 1! I asked Dr. Taffel about this and he told

us that four young surgeons journeyed to Philadelphia in 1937 to take the very first American Board of Surgery examination.

Dr. Taffel was awarded the first certificate. After completing the two-year chief residency in 1966, I was certified by the American Board of Surgery in 1967 and was awarded certificate No. 14899 (a less auspicious number than Dr. Taffel's, but I was pleased!). I feel certain that none of us would have heard about this from Dr. Taffel had I not stumbled on the certificate. I knew him to be a humble man, a dedicated teacher and a meticulous surgeon, and it seems fitting that he was the first to pass the American Board of Surgery examination.

*A. Griswold Bevin, M.D. '60, HS '66
Chapel Hill, N.C.*

Suspicious about hair dye are confirmed

I read with great personal interest the article about Dr. Zheng, "Increased Risk of Non-Hodgkin's Lymphoma Linked to Hair Dye" [Summer 2004].

My late sister did use dark hair dye for years, and I found this article about Dr. Zheng's research interesting, in that work is still being done on this possible relationship. I think that this research is important, taking into account the large number of women who do use hair dyes.

*William J. Waskowitz, M.D. '57
New Britain, Conn.*

HOW TO REACH US

Yale Medicine welcomes news and commentary. Please send letters to the editor (250 words or less) and news items to *Yale Medicine*, P.O. Box 7612, New Haven, CT 06519-0612, or via electronic mail to yymm@yale.edu, and include a daytime telephone number. Submissions may be edited for length, style and content.

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Editor in Chief

Michael Kashgarian, M.D. '58 HS '63
*Professor of Pathology and Molecular,
Cellular and Developmental Biology*

Editor

Michael Fitzsosa
Director of Publications

Managing Editor

John Curtis

Contributing Editors

Janet Emanuel, Ph.D.
Peter Farley
Sharon McManus
Karen Peart
Cathy Shufro
Jacqueline Weaver
Marc Wortman, Ph.D.

Contributors

Alan Bisbort
Terry Dagradi
Alla Katsnelson
Jennifer Kaylin
Donald S. Kornfeld, M.D.
Jill Max
Kara A. Nyberg, Ph.D.
Kendall Powell
Colleen Shaddox
Amelia Shaw

Copy Editing

Anne Sommer

Office Manager / Editorial Assistant

Claire M. Bessinger

Senior Administrative Assistant / Website Coordinator

Cheryl R. Violante

Design

Daphne Geismar

Printing

The Lane Press

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ADDRESS CORRESPONDENCE TO

Editor, *Yale Medicine*

P.O. Box 7612

New Haven, CT 06519-0612

Telephone: 203-785-5824

Facsimile: 203-785-4327

Electronic mail: yymm@yale.edu

Website: <http://yalemedicine.yale.edu>

Waiting it out in Haiti

At this writing at the end of September, Haiti has just endured another storm and 10 days of devastation following Hurricane Jeanne. Fifteen hundred people have died in the flooding and mudslides that swept the coastal region near Gonaïves, the country's second-largest city. Today's *Miami Herald* tells the deeply unsettling story of a mother who was forced to choose between rescuing her 6-year-old son and holding on to her 4-year-old daughter as she struggled to escape the rising flood waters. Now she is worrying about the child who survived. Will enough food arrive to keep the girl nourished? Will cholera and other diseases spare her?

Public health in Haiti and the impoverished country's long history of suffering are at the heart of this issue's cover story ("A Film to Finish," page 18) by alumna Amelia

Shaw, M.P.H. '03. Shaw had to leave Haiti during an earlier moment of tumult this year—the riots preceding the ouster of President Jean-Bertrand Aristide in February—but she returned in July to continue work on the documentary film she is making about the impact of AIDS in Haiti. Two months later, she was waiting out a different kind of storm and glad to be back, despite the element of danger. As her Haitian colleague Liony Accelus says, "Our film is really going to change the way Haitians think about treating AIDS." As you will read, they risked their lives to make it.

Managing Editor John Curtis happened upon Shaw's story last winter during a conversation with faculty member Kaveh Khoshnood, M.P.H. '89, PH.D. '95, and has been in contact with her ever since. With the article written and laid out, we listened to the hurricane reports from Port-au-Prince in September and noted one voice with special interest. Shaw, who had worked as a summer intern at National Public Radio, was now covering the hurricane's aftermath for NPR. In an e-mail in late September, she reported that the people in her story—Accelus, Moliere Jean and Uncle Big—all survived the storms.

Shaw's article shows one way in which Yale has an impact on the world of health and medicine. We're impressed by her reporting and writing and proud to have her byline in *Yale Medicine*. The best epilogue to her story would be a healthier Haiti.

September's news also brought a happy footnote to another celluloid story. Gretchen K. Berland, M.D., an assistant professor of medicine who is also a documentary filmmaker, was awarded a \$500,000 "genius grant" from the John D. and Catherine T. MacArthur Foundation. The five-year, no-strings-attached fellowship will support her work on projects similar to *Rolling*, in which she provided cameras to three people who use wheelchairs and created a compelling portrait of their everyday lives. *Rolling* was the subject of a feature article ("Life on Wheels") in the Summer 2004 issue of *Yale Medicine*.

Michael Fitzsosa
michael.fitzsosa@yale.edu

SECOND OPINION BY SIDNEY HARRIS



ACHES! PAINS! FLU! STREP! WHY DOESN'T ANYBODY COME IN WITH GRONNIK'S SYNDROME?

New travel restrictions bar Cuba rotations

A program that allowed Yale residents to observe the island nation's health care system ends.

For each of the past four years, up to four residents at Yale-New Haven Hospital have spent six weeks studying health care in Cuba. Those rotations are unlike other foreign rotations that take residents to more than a dozen countries, said Michele Barry, M.D., HS '77, co-director of the Yale/Johnson & Johnson Physician Scholars in International Health program, which sends 40 Yale residents abroad each year.

"It's a little bit different than our other rotations in underserved areas, where they desperately need doctors," Barry said. Cuba has no shortage of physicians and Barry sends residents to Cuba, she said, to observe the Cuban approach to primary care. "They have a physician assigned to an entire neighborhood. The physician takes ownership of the neighborhood's health and does outreach in a way that we have never been very effective at," Barry said.

That exposure to Cuban health care practices is no longer possible because of new restrictions on travel to Cuba that the U.S. Department of the Treasury put into effect on June 30. Among other limits on travel by American citizens, students must stay in Cuba for at least 10 weeks, too long for hospital residents, Barry said.

The rotations in Cuba were organized through Medical Education Cooperation with Cuba (MEDICC), a nonprofit organization that has sent almost 900

students from more than 100 medical, nursing and public health schools to Cuba since 1997. "These regulations will make it very difficult for health sciences students to study in Cuba, since most academic institutions do not have the resources to organize a course of 10 weeks," said MEDICC's director, Diane Appelbaum, R.N., M.S.

The new guidelines, she said, restrict MEDICC in several ways. For one, it's not an academic institution, the only entity now allowed to send faculty, staff or students to Cuba. The new guidelines also require that students wishing to study in Cuba must do so as part of accredited courses in the institution in which they are enrolled, rather than under the auspices of other organizations or programs. And the courses MEDICC offers in Cuba only last between two and six weeks.

For most of Fidel Castro's reign, which began in 1959, the United States has restricted travel by U.S. citizens to Cuba. Typically only scholars, journalists and Cuban-Americans with relatives on the island have been allowed to travel there. The latest restrictions are based on recommendations by the Commission for Assistance to a Free Cuba, which President Bush created last fall to find ways to move Cuba toward democracy. The new rules do not affect graduate students pursuing independent research.

Barry sees a political motive for the new rules—a desire to garner support from conservative Cuban exiles in Florida in the presidential election. And she believes the restrictions are counterproductive. "I only see good things coming out of the exchange," Barry said. I do not think a country like the United States should foster censorship and thus prevent an exchange of ideas and cultures which could effectively promulgate democracy in Cuba."

—John Curtis



Neurobiologist Hockfield leaves provost post for presidency of MIT

When she embarked on her career as a neurobiologist in the early 1980s, Yale Provost Susan Hockfield, PH.D., never imagined that her academic path would take her from running a laboratory to running a university. She devoted herself to research, devising novel uses of monoclonal antibody technology and discovering a gene that may play a role in brain cancer. “Being a scientist is a wonderful, wonderful career,” she said in September in her office on Hillhouse Avenue. “I had no aspirations to move into positions of academic leadership.”

But early on her administrative skills emerged. After she came to Yale in 1985, she ran a summer program in neurobiology at the Cold Spring Harbor Laboratory on Long Island, where she had previously worked. At Yale, Hockfield, the William Edward Gilbert Professor of Neurobiology, served as director of graduate studies in the medical school’s Section of Neurobiology and on the graduate school’s executive committee. In 1998 she was named dean of the Graduate School of Arts and Sciences (the first member of the medical school faculty appointed to that post), and in January 2003, she became provost when her predecessor, Alison Richard, PH.D., was chosen to lead Cambridge University.

As provost she has worked to advance science, medicine and engineering at Yale—initiatives that include a \$500 million investment in facilities. She has also fomented interdisciplinary collaborations throughout the university.

In August the Massachusetts Institute of Technology (MIT) announced that Hockfield would become its 16th president, the first woman and the first life scientist so named. She will move to Cambridge, Mass., with her husband, Thomas N. Byrne Jr., M.D., HS ’81, clinical professor of neurology, neurosurgery and medicine at the medical school, and their daughter, Elizabeth, 13, in December.

At MIT she replaces Charles M. Vest, PH.D., who announced his retirement last year after 14 years leading the school. (In October, President Richard C. Levin appointed Deputy Provost Andrew D. Hamilton, PH.D., to succeed Hockfield.)

“MIT is an inspiring place, populated by inspiring people,” Hockfield said. “From my first conversations in the search process, the Institute’s central themes—the pursuit of truth, integrity and the great meritocracy—have resonated with my own core values.”

Although MIT, with its strong reputation in engineering, has never before named a biological scientist as its leader, Hockfield said that the school’s grants and contracts supporting research in the life sciences, largely from the National Institutes of Health, have grown at a remarkable rate over the last decade. And the school is constructing a three-building complex devoted to neuroscience. With its strengths in engineering, the physical sciences and the biological sciences, she believes MIT is well-positioned for collaborative, interdisciplinary science. “I am hoping to do what I can to encourage bridge-building among these disciplines,” she said.



DONNA COVENEY/MIT

Neurobiologist Susan Hockfield is leaving Yale after almost two decades to become the president of the Massachusetts Institute of Technology.

She also plans to continue the practice of past MIT presidents who have served as advocates for sound national policies on science, technology and higher education. (The school maintains an office in Washington, which she will visit once a month.) One of her main concerns is that American students are falling behind their peers around the world in math and science. She’d like to see improvement in math and science education from kindergarten through high school, to engage and inspire students. “Almost every child gets a thrill from building and inventing things that work,” she said. “Math and science in our schools can do a better job in tapping and encouraging that creative energy.”

For now, though, her attention is on MIT. “My overarching goal is to help MIT to be an even greater MIT,” she said. “I hope that MIT is increasingly seen as among the very best places in the world for people—faculty, staff and students—who are enormously inspired by innovation in both teaching and research.”

—J.C.

Yale CME gets a new lease on lifelong learning as it adapts to the Internet age

Nearly 25 years ago, when Continuing Medical Education (CME) at Yale was created to develop programs that present the most current information and research to a broad range of medical professionals, the practice of medicine was very different. Advances in medicine did not occur at such a rapid pace, managed care had not permeated the medical landscape and 15-minute office visits were not yet the norm.

Today, as physicians try to keep up with their profession in a changed medical environment, Yale CME is overhauling its continuing education activities, which include courses and conferences, regularly scheduled grand rounds and two newsletters (*The Medical Letter* and *Diabetes Newsletter*) that include tests on their content for CME credit. Its goal is to build CME at Yale into an educational clearinghouse that acts not only as a resource, but as the facilitator of new information.

"One of the challenges in the environment is that physicians, because of managed care, find it increasingly difficult to leave the practice and go to a meeting," said Lawrence S. Cohen, M.D., HS '65, the Ebenezer K. Hunt Professor of Medicine, special advisor to the dean and chair of the CME Faculty Advisory Committee. In response, Yale CME is taking advantage of the Internet to streamline many of its activities. A revamped website allows participants to register for conferences online and access *The Medical Letter* and its corresponding exams at their convenience. (*The Diabetes Newsletter*



JAMES YANG

will be available online sometime next year). In addition, physicians will be able to take online courses and examinations for CME credit within the next few months.

"On a practical basis, we are formalizing activities that have been ongoing at the School of Medicine, such as grand rounds and tumor boards (which meet to discuss cancer cases), and making them easily accessible to CME for credit," said Cohen. "Most importantly, we are uncovering, not surprisingly, a wealth of investigators/educators who are in the process of putting together programs appropriate for CME at Yale."

A major issue is compliance with guidelines set by the Accreditation Council for Continuing Medical Education (ACCME), including standards for commercial support that outline the steps that must be taken when accepting financial support from sources such as drug companies and device manufacturers. Two years ago the program's accreditation was at risk over shortcomings in its record keeping and compliance with ACCME rules. Then Mary D. Marcarelli became director of CME, which is now up-to-date on

ACCME standards and has trained almost 50 departmental coordinators to ensure compliance. In July the Yale CME program learned it received full accreditation from the ACCME through June 2008.

Plans under consideration for the future include video coverage of grand rounds on the Web; a lecture series focusing on research that can be directly translated to patient care; and the production of a CME program through the cable channel Discovery Health to offer CME credit to those unable to travel to conferences. The next few years may also usher in the use of handheld personal digital assistants to deliver CME course materials and the revival of the Mini-Med School Program, begun in 1995, which presented a series of lectures to the general public.

CME at Yale has become a high-profile project, and will continue to evolve as new technologies, research and treatments become available. "Medicine moves forward," said Marcarelli. "We're moving with it."

—Jill Max

Yale CME can be found online at cme.yale.edu/.

A conservative “hit list” targets AIDS researchers, including some at Yale

In the fall of 2003 Margaret R. Weeks, PH.D., got a call from her project officer at the National Institute on Drug Abuse (NIDA). Weeks, an anthropologist and the associate director of the Institute for Community Research in Hartford could hear the stress in her project officer’s voice. The National Institutes of Health (NIH) needed an immediate report on her study that recruits drug users to spread a message about how to prevent HIV/AIDS.

“We were two and a half years into a four-year study. We didn’t have findings,” Weeks told the audience at AIDS Science Day in April, describing her response. She said, ‘Give me anything you can.’ ”

Weeks and her project, which is affiliated with the Center for Interdisciplinary Research on AIDS based at the School of Public Health, were on what came to be known as the “hit list” of about 200 federally funded studies deemed by the conservative Traditional Values Coalition to be “prurient,” “smarmy” and having “little or no bearing on public health.” The list found its way to Congress, which demanded explanations. Elias A. Zerhouni, M.D., director of the NIH, looked into the studies and went back to Congress with a vigorous defense.

The project Weeks is leading recruits active drug users and trains them to become peer health advocates who can introduce harm reduction measures into drug use sites. Weeks was one of four panelists at AIDS Science Day to discuss the implications of this list.

Michael H. Merson, M.D., dean of public health and moderator of the panel, said the list made him think back to the 1950s and another politician with a list. “As someone who has his name on this list, I immediately recalled the words of Senator Joseph McCarthy,” he said. Merson appeared on the list as principal investigator

of studies on drug use in high-risk settings and AIDS in China.

Panelist Judith Auerbach, vice president for public policy at the American Foundation for AIDS Research (amfAR), placed the “hit list” in the context of other assaults on science. She noted that the Union of Concerned Scientists issued a report in February that cited examples of what it called the administration’s distortion of science, and scores of scientists, including 20 Nobel laureates, issued a statement accusing the administration of misrepresenting scientific findings.

Studies on air pollution, mercury emissions, lead in water and global warming—which affect key industrial constituents of the Bush administration—have been questioned, Auerbach said. Religious views have dominated discussion of condom use, sex and the sale of contraceptives over the counter. “All of this misuse or misinterpretation of science is happening in a very political context,” Auerbach said. “The goal of the attacks is to disallow certain kinds of research.”

“Some of what is going on is not entirely new,” said Kevin Cranston, M.D.IV., acting director of the HIV/AIDS bureau at the Massachusetts Department of Public Health, “even if in a matter of degree it is entirely unprecedented.”

Ana Oliveira, executive director of Gay Men’s Health Crisis in New York, said organizations in Washington and San Francisco have undergone audits of their grant funding. “The kind of threat and intimidation an audit represents is unbelievable. It diverts precious time and resources.”

Indeed, Weeks said her entire office mobilized to gather information for the NIH. “Everyone stopped what they were doing and helped,” she said. Apart from the waste of time and energy, Weeks said, targeting individual projects and scientists has the effect of chilling studies of controversial topics. “We absolutely cannot use this as a reason to shy away from this research,” she said.

—John Curtis

et cetera ...

YALE JOINS DIABETES TRIAL

The School of Medicine has joined 11 other medical centers in a national study that will compare three treatments for type 2 diabetes in children and teenagers. The study is the first clinical trial to look at the impact of intensive lifestyle change designed to lower weight by cutting calories and increasing exercise. It is also the first trial sponsored by the National Institute of Diabetes and Digestive and Kidney Diseases to focus on type 2 diabetes in youth.

The five-year trial will look at how each treatment option, including drugs currently used in adults, controls blood glucose levels in younger patients. It will also evaluate safety and the effects of treatments on insulin production, insulin resistance, body composition, nutrition, physical fitness and risk factors for disease.

The principal investigator at Yale is Sonia Caprio, M.D., associate professor of pediatrics (endocrinology).

—J.C.

EYEWITNESS ACCOUNTS FLAWED

Soldiers engaged in survival training had trouble identifying people they encountered during threatening and stressful events, according to a Yale study published this Spring in the *International Journal of Law and Psychiatry*.

“Contrary to the popular concept that most people would never forget the face of a clearly seen individual who had physically confronted them and threatened them for more than 30 minutes, a large number of subjects in this study were unable to correctly identify their perpetrator,” said Charles A. Morgan III, M.D., associate clinical professor of psychiatry.

Morgan studied more than 500 soldiers who were subjected to stress modeled after the experiences of prisoners of war. For 48 hours prior to questioning, they were deprived of food and sleep. Asked to identify their guard and interrogator a day later, those who experienced less stressful interrogations had better recognition.

“The present data have a number of implications for law enforcement personnel, mental health professionals, physicians, attorneys and judges,” Morgan said.

—J.C.

Quickening the pace from bench to bedside

A new program speeds laboratory findings into the clinic, cutting years from the process.

Just eight months after scientists in a lab on Cedar Street devised a new approach for treating ovarian cancer, clinical trials began in June at Yale's gynecologic oncology clinic a block away on Howard Avenue. The experimental protocol is among four clinical trials under way in the Discovery to Cure program—an informal collaboration that began in the late 1990s and took on its new name in June. The program is designed to speed progress in detecting and treating women's reproductive cancers through an unusual alliance of basic researchers, clinical

investigators and nurses. The clinicians report directly back to the laboratory scientists, who incorporate findings into planning for new research.

The latest study uses the anticancer drug phenoxodiol to sensitize ovarian cancer cells before chemotherapy. Phenoxodiol, developed in Australia for possible use as a treatment for cancer and cardiovascular disease and as an anti-inflammatory, was among about 200 compounds screened for their anticancer properties by Gil Mor, M.D., PH.D., an associate professor of obstetrics, gynecology and reproductive sciences, and his team. Phenoxodiol attacks a problem common in cancer cells: normal cell death is blocked, allowing cells to proliferate and form tumors. The drug, which affects intracellular signaling, helps activate caspases, the enzymes that regulate cell death. Mor said the intravenous treatment renders the cancer cells up to 100 times more vulnerable to the chemotherapy drugs cisplatin and paclitaxel. This sensitization allows doctors to prescribe lower doses of chemotherapy, reducing the damage to healthy cells that can cause debilitating side effects.

"Our new approach was not to develop new cytotoxic drugs but to find something specific that will remove those blockers [to cell death] in the cancer cell without affecting normal cells," said Mor.

Mor is encouraged by how quickly discoveries about molecular pathways are being tested in patient trials. "All these findings are immediately brought to the clinic," he said. "This is quite unusual. Findings in the lab can take years to get to the clinic."

Once his group developed its therapy, Mor said, it took about eight months to gain approval from the medical school's institutional review board, the Human Investigation Committee, and then recruit 40 patient volunteers to take part in a combined Phase I/Phase II trial that tests both safety and effectiveness. Mor said the researchers save time because lab investigators have immediate access to tissue samples from cancer patients and a clinical population that allows them to launch a trial quickly. In one instance in 1999, he noted, a basic science lab without close ties to a clinic couldn't get an ovarian cancer drug into clinical trials until 2003.

"The time cut is years," said Mor's clinical colleague, Thomas J. Rutherford, PH.D., M.D., FW '94, associate professor of obstetrics and gynecology. Rutherford said the researchers learn not only from each other but also from others on the team, including nurses, who have insights into managing clinical problems. "If you're willing to talk and listen—and I'd say listening is most important—there's a tremendous amount of information people will give you."

The Discovery to Cure program sponsors research on four gynecological cancers: ovarian, cervical, uterine and breast.

Of these cancers, ovarian cancer poses a particularly daunting problem, because it is rarely discovered in its early stages. When diagnosed in the advanced stages, the five-year survival rate ranges from 20 to 40 percent. Mor and Rutherford are working to develop a blood test to detect the cancer early, collaborating with Peter E. Schwartz, M.D., HS '70, the John Slade Ely Professor of Obstetrics and Gynecology.

Rutherford is optimistic. "We have identified what we think to be protein markers for early ovarian cancer," he said. "If it proves to be true, it will be a good thing."

—Cathy Shufro



MARLENA ZUBER

Study suggests marijuana induces temporary schizophrenia-like effects

Anyone who inhaled in the 1960s can recall the effects of cannabis—euphoria, paranoia, changes in perception, an inability to concentrate and short-term memory failures. A laboratory-controlled study by Yale scientists published in the journal *Neuropsychopharmacology* last summer has found that delta-9-tetrahydrocannabinol (THC), the active ingredient of cannabis, transiently induced a range of schizophrenia-like effects in healthy people. And in the past year, three large epidemiological studies have supported the long-suggested link between cannabis use and a risk of schizophrenia.

“No one really knew how cannabis worked until about 10 years ago,” said D. Cyril D’Souza, M.D., associate professor of psychiatry and lead author of the study. “The discovery of cannabinoid receptors and several other advances in the basic pharmacology of the cannabinoid receptor system have renewed interest in that association between cannabis and psychosis.”

Because animal models of psychosis have significant limitations, scientists have used drugs to induce transient psychosis in humans. “Perhaps by studying drug-induced psychosis, that might lead us to a better understanding of psychoses in general and schizophrenia in particular,” D’Souza said, adding that this is the first study, to his knowledge, that has applied measures for schizophrenia to study the effects of THC in healthy people screened for any vulnerability to schizophrenia.

In the study, THC induced temporary responses similar to the three domains of schizophrenia: positive symptoms such as paranoia and disorganization of thinking, negative symptoms such as blunted affect and reduced spontaneity, and cognitive deficits such as memory lapses. On three test days at least a week apart, the researchers administered THC to 22 test subjects—including Yale medical students and undergraduates and other volunteers. All had used cannabis previously but none had ever been diagnosed with cannabis abuse disorder or a major psychiatric disorder. On each test day the subjects received one of three injections, a placebo or a low or medium dose of THC, before taking a series of behavioral and cognitive tests.

The subjects reported how they felt, using a scale of feeling states associated with cannabis effects—high, calm, relaxed, tired, anxious and panicked. Some subjects experienced schizophrenia-like symptoms lasting between half an hour and an hour. In addition, THC induced euphoria and raised levels of cortisol and prolactin, biological markers for activity of cannabinoid receptors.

The tests relied on self-reporting and the observations of trained researchers, which at times differed from those of the subjects. “We had a subject who refused to complete some of the cognitive testing because she was convinced we were trying to trick her,” said D’Souza. “But when we asked if she felt paranoid, she said ‘no.’”

Follow-up months after the study revealed no side effects among participants.

Ultimately, D’Souza said, the research may provide clues about the pathophysiology of psychotic disorders. “By understanding how cannabis produces psychosis, that may help us understand what goes wrong in schizophrenia,” he said.

—John Curtis

et cetera ...

HIGH-FAT DIET RAISES CANCER RISK

It’s long been a tenet of good nutrition that too much fat and animal protein can clog the arteries and raise cholesterol. A new study by Yale researchers found that such a diet also increases the risk of non-Hodgkin’s lymphoma (NHL), a cancer that attacks the lymphatic system.

The study reaffirmed another mantra of dietitians and nutritionists—consumption of high-fiber fruits and vegetables such as broccoli, lettuce, tomatoes and cauliflower is associated with a lower risk of NHL.

“An association between dietary intake and NHL is biologically plausible because diets high in protein and fat may lead to altered immunity, resulting in increased risk of NHL,” said Tongzhang Zheng, Sc.D., associate professor of epidemiology (environmental health). Zheng was the principal investigator of the study of Connecticut women, which was published in the *American Journal of Epidemiology* earlier this year. “The antioxidants found in vegetables and fruits may result in a reduced risk of about 40 percent.”

—J.C.

HIGH VOLUME NOT ALWAYS BEST

The conventional wisdom suggests that only hospitals that perform at least 400 angioplasties a year should be allowed to offer the procedure. A higher volume, the reasoning goes, leads to better outcomes.

But researchers at Yale and the University of Pennsylvania challenge that view in a study published in the *Journal of the American College of Cardiology*. The study of 362,748 angioplasties performed between 1998 and 2000 found comparable outcomes in medium- to very-high-volume hospitals. Yet some low-volume hospitals provided excellent care while some high-volume hospitals did not, said Saif S. Rathore, M.P.H., a lecturer in cardiovascular medicine, and one of the study’s authors.

“If you accept volume [as the only standard],” Rathore said, “you essentially consign all low-volume hospitals to being of poor quality and you give all high-volume hospitals a pass on quality. What we ought to be doing is identifying those hospitals or doctors that provide better quality of care.”

—J.C.

In the kitchen, a way to treat cystic fibrosis?

A spice may protect a mutant, but functional, protein from the cell's quality control system.

A possible compound for the treatment of cystic fibrosis may be as close as the kitchen spice rack. Researchers at Yale and the University of Toronto reported recently in *Science* that curcumin, an element of the spice turmeric, helps correct a protein defect associated with this genetic disease.

Through a mechanism that is not completely understood, curcumin protects a mutant, yet functional, protein from the cell's quality control machinery. Cystic fibrosis stems from a defect in this protein, the cystic fibrosis transmembrane conductance regulator (CFTR), which moves chloride across cellular membranes to maintain a balance of ions and water. When that balance is disrupted, mucous becomes a sludge that clogs respiratory and digestive pathways, ultimately causing infections. Most people with cystic fibrosis do not live past the age of 30.

The most common form of cystic fibrosis is called delta F508, and is due to the deletion of a single amino acid from the sequence of CFTR. Although the protein is still able to mitigate most cystic fibrosis symptoms, cellular quality control machinery tags it for degradation, because without the amino acid it cannot fold properly. "Even though [it] works, it gets thrown out," said Michael J. Caplan, M.D. '87, PH.D. '87, professor of cellular and molecular physiology and cell biology and the principal investigator of the study.

Working with Marie E. Egan, M.D., associate professor of pediatrics and cellular and molecular physiology, and others, he may have found a way to subvert quality control.

As part of the quality control process, some chaperone proteins bind to calcium, commonly found in the endoplasmic reticulum (ER). To help CFTR evade quality control, Caplan and Egan sought compounds that would disable the chaperones by depleting calcium stores in the ER. Previously identified compounds blocked calcium pump action in the ER, but proved to be toxic. A search through the literature turned up curcumin, a weak inhibitor of ER calcium pumps.

Remarkably, it worked—and well, at least in tissue culture and mouse models. The researchers noted a restoration of ion transport in mice that received curcumin, and in cell lines bathed in curcumin, a fraction of the mutated protein migrated to

the cell membrane and restored a significant level of ion transport function.

Given these findings, Egan and Caplan plan to collaborate with the Cystic Fibrosis Foundation and Seer Pharmaceuticals in a clinical trial to assess curcumin's potency in patients with cystic fibrosis. However, Egan stresses that more research is needed: "What it does to people versus what it does in mice may be very different. We first need to get a better handle on the mechanism," Egan said. To that end, Egan and Caplan are trying to determine whether curcumin blocks calcium pump action or whether it binds to CFTR to help stabilize it. They are also investigating whether the active compound is curcumin or a metabolite of curcumin. If the data from both the clinical and basic research investigations prove its efficacy, curcumin may be the first cystic fibrosis drug that treats the cause of the disease rather than just the symptoms.

—Kara Nyberg



Molecular players shown to affect nerve fibers in multiple sclerosis

Until recently, researchers knew very little about the neural molecules associated with secondary progressive multiple sclerosis (MS), a nerve-degenerating autoimmune disease that afflicts almost 3 million people worldwide. Scientists had typically studied the disease in mouse models, but Stephen G. Waxman, PH.D., M.D., professor of neurology, pharmacology and neurobiology, and his colleagues looked for clues at the source—postmortem spinal cord tissue from MS patients. In a study published in May in the *Proceedings of the National Academy of Sciences*, Waxman's team and researchers from the VA Connecticut Healthcare System in West Haven and University College London described the first observations in humans of key molecules that contribute to nerve fiber degeneration. These molecules, though produced to compensate for a short in the neural signaling circuit, ultimately—and ironically—initiate a series of events that cause nerve damage.

To relay signals to other neurons, healthy nerve cells are studded with sodium channels that open in succession along the nerve fiber to allow in surges of sodium when neurons become activated. To help propagate this signal, an outer coating of myelin insulates the nerve cells. But in those with MS, the myelin breaks down, causing a short in the signal circuit. Waxman and colleagues found that MS neurons compensate for this defect by overexpressing the sodium channel Nav1.6—normally present only at small regions called nodes of Ranvier—all along the nerve fiber to

improve the signal relay. However, the atypical Nav1.6 expression appears to cause more harm than good, as it coincides with regions of axon injury.

There are at least 10 types of sodium channels in human nerve cells, each with a different task, Waxman explained. “It’s as if you have 10 different types of batteries. Only the right batteries will make a device work properly.” In this case, the cells are using the wrong batteries in the wrong place. The researchers observed that another protein called NCX, a sodium-calcium exchanger, is expressed near Nav1.6 sites. The aberrant placement and overabundance of Nav1.6 causes too much sodium to enter the cells. Overexpression of NCX adjacent to Nav1.6 channels presumably flushes out the excess sodium and replaces it with calcium. But too much calcium provokes molecular chain reactions, sending cells into activity overdrive that results in cellular damage and disease symptoms.

In a field long dominated by immunobiologists, Waxman is enthusiastic about the contributions to the understanding of MS that he and his neurobiologist colleagues are making. “We are chipping away at the disease molecule by molecule, and we are understanding more about the disease process,” he said. Based on his research, Waxman is eager to try targeting the neurons for treatment; all approved MS therapies currently target the immune system. Consistent with his research findings, he said, “Drugs that block sodium channels prevent axonal death.” Consequently, he is involved in an upcoming clinical trial that will test sodium channel blockers in MS patients.

—K.N.

et cetera ...

PICTURING AN ENZYMATIC RNA

More than 20 years ago scientists discovered that RNA, and not just proteins, could act like an enzyme. Now Yale researchers have obtained the first X-ray crystal structure of this type of enzymatic RNA. The image caught an RNA molecule as it spliced together two exons, the parts of a gene that code for proteins. Also visible in the image were a full-length noncoding intron and metal ions bound in the molecule's active site.

The RNA acts like an enzyme so it can overcome an inherent hindrance to protein synthesis—the intron that separates the exons. With the help of the metal ions, the RNA connects the exons and removes the intron sequence.

“This is the first RNA splicing complex to be visualized in molecular detail,” said Scott A. Strobel, PH.D., professor of molecular biophysics and biochemistry and chemistry, and principal investigator of the study published in the journal *Nature* in June.

—K.N.

HOW SALMONELLA SURVIVES

Yale scientists have discovered how *Salmonella*, a bacterium that causes food poisoning and typhoid, escapes the innate immune system's efforts to destroy it. Typically, bacteria are gobbled up by macrophages, which send bacteria to an execution chamber called a lysosome for degradation.

While they await degradation, *Salmonella* sit in a holding cell called a vacuole and begin to plan their escape. They secrete a protein, SopB, that changes the composition of the vacuole. This allows the bacterium to escape and find a friendlier compartment where they can replicate and avoid innate immune defenses.

“*Salmonella* have an elegant strategy for surviving and replicating and avoiding this cellular disposal system,” said Jorge E. Galán, D.V.M., PH.D., chair of the Section of Microbial Pathogenesis, the Lucille P. Markey Professor of Microbiology and principal investigator of the study published in *Science* in June. “Our work is revealing a fundamental mechanism by which these bacteria cause disease—and may lead to new targets or strategies for controlling them.”

—John Curtis

Who's minding the bookstore?

Don Levy's career has taken him from reporting to academia and, now, to selling medical textbooks.

By Cathy Shufro

Yale Medical Bookstore manager Donald M. Levy was ringing up three hefty surgery texts when he suggested to the customer, a surgical resident, that he take a look at *Zollinger's Atlas of Surgical Operations*.

Levy wasn't expecting to make a sale: the *Atlas* costs \$199, about what the resident had just spent. Nevertheless, the surgeon opened the book, checked the index and began reading. "This is the operation I had to do yesterday," he said. "If I'd had this book, I would have been better off." He bought the book.

Making that sale wasn't Levy's primary motive. "I don't like being sold stuff, myself," says Levy, a warm, talkative man who remembers customers by name. "There's a subtle difference between offering and selling."

Levy has managed the store at 320 Congress Avenue, which is owned by Barnes & Noble, since it opened in October 2001. He came to the medical school campus from the main Barnes & Noble store on Broadway. But before he got into the book business he spent 10 years as a television reporter in upstate New York, Vermont, Ohio and Kentucky.

A complex career path next led him into journalism education at Syracuse University; graduate studies in religion at Yale, where he received a master's degree in 1992; and a brief tenure running his own company selling out-of-print volumes in philosophy, psychology and religion. When the advent of Internet shopping undermined his sales, he joined Barnes & Noble.

Running the store gives him a chance to draw on his interest in religion and healing. For example, to customers fresh from the doctor's office he can recommend a mass market book on diabetes or heart disease "You're kind of being pastoral," he says. "You show them the section and maybe you ask a few questions."

The bookstore offers shelf after shelf of review books and primers like *Clinical Microbiology Made Ridiculously Simple* and *Laughing Your Way to Passing the Pediatrics Boards*. Also for sale are medical accessories and necessities, including one big seller, a \$16 dissection kit. It contains tweezers, pick, scalpel, scissors and replacement scalpel blades in a box—"all Larry Rizzolo-approved"—a reference to Lawrence J. Rizzolo, PH.D., one of the directors of the first-year anatomy course. The store also carries tuning forks, Babinski hammers and stethoscopes.

"I really like selling 'scopes," says Levy after watching a student equivocate between navy and burgundy models. "It's an important purchase, and it's a personal fashion statement."

Levy welcomes ideas from customers. "My customers help me manage my bookstore if I'm careful to listen to them," he says. He started carrying cotton lab coats when customers requested them and he listens to the medical students who compare notes on various texts. "I like it when students come in really informally and pick each other's



After a varied career that included forays into television journalism and academia, Don Levy now manages the Barnes & Noble Medical Bookstore on Congress Avenue.

brains," says Levy. He began the year with four student texts for hematology. Very quickly, students had reached a consensus that *Hematology at a Glance* was the best.

Even when students are looking for a particular title, Levy likes to suggest alternatives. "They will come in and say 'Do you have that blue book for 1CU?' I tell them, 'This is the book they told you to get. It's a great old book, but it's 1998. This is the standard, but I want you to look at this.'" Then he'll show them another guide, published in 2001. "That way," he says, "they feel like they made a much more informed purchase than if they came in like lemmings and bought the one they were told to buy."

—Cathy Shufro

Bookshelf is a column in *Yale Medicine* focusing on matters related to books and authors at the School of Medicine. Send ideas to Cathy Shufro at cathy.shufro@yale.edu.



**Leave No Child Behind:
Preparing Today's Youth for
Tomorrow's World**

by James P. Comer, M.D., M.P.H., HS '66, associate dean of the School of Medicine and the Maurice Falk Professor of Child Psychiatry in the Child Study Center (Yale University Press) Comer offers proof that students from all backgrounds can learn at a high level, adopt positive attitudes and prepare for fulfilling adult lives if they learn in schools that provide adequate support for their complete development. Comer draws on his own experiences as the creator of the School Development Program.

**Metamorphoses: Memoirs of
a Life in Medicine**

by William G. Anlyan, M.D. '49 (Duke University Press) Born in Alexandria, Egypt, in 1925, Anlyan attended Yale as both an undergraduate and a medical student before leaving for Duke University in 1949 for an internship in surgery. Among other things, he describes changes in the world of medicine, recalling an era when medicine focused on controlling infectious diseases like tuberculosis and polio.

**What Every Senior Needs to
Know About Health Care**

by James J. Nora, M.D. '54 (University Press of Colorado) This guide to the medical, financial and social issues of today's American health care system is written for people 50 and older. The author discusses mental and social health, elder abuse, retirement, end-of-life issues and health maintenance strategies involving nutrition, fitness and the avoidance of risk factors.

**The Packard Weight Health Plan:
A Medically Based 5-Step Program
for Permanent Weight Loss**

by Andrew R. Packard, M.D. '77 (Ballantine Books) Packard, who in his medical practice sees the chronic pain and illness that are directly related to excess weight, details his plan for "weight health" for life—one that is not a diet plan. The key to regulating weight, he feels, lies in understanding the triggers for releasing the neurohormones dopamine, serotonin, GABA and endorphins and other hormones like leptin, insulin and ghrelin.

**Hyperbaric Medicine Practice,
2nd ed.**

edited by Eric P. Kindwall, M.D. '60, and Harry T. Whelan, M.D. (Best Publishing) An international group of more than 40 hyperbaricists provides practical information on the application of hyperbaric oxygen therapy in the treatment of patients.

**The Doctors' Plague: Germs,
Childbed Fever, and the Strange
Story of Ignac Semmelweis**

by Sherwin B. Nuland, M.D. '55, HS '61, clinical professor of surgery (W.W. Norton & Co.) Before the discovery of bacteria and bacterial diseases and before Pasteur, Lister and Koch, the mid-19th century Viennese physician Ignac Semmelweis insisted that doctors should wash their hands before examining patients. Although his observations were largely ignored in his lifetime, Semmelweis is remembered for this now commonplace practice.

**Clinical Management of
Hypertension, 7th ed.**

by Marvin Moser, M.D., clinical professor of medicine (Professional Communications) This book reviews the results of major clinical trials completed over the past 20 years, with special emphasis on newer trials completed within the last several years. The author discusses treatment of hypertension and reviews drug therapies.

**Understanding Cosmetic Laser
Surgery: A Description of
the Processes and Procedures
Available in Cosmetic Laser
Surgery**

by Robert C. Langdon, M.D., HS '84, assistant clinical professor of dermatology (University Press of Mississippi) Laser treatment is an alternative to more invasive cosmetic procedures and can be used to reduce facial and body scars and remove lesions, tattoos and hair. In this book for the general reader Langdon describes the technology of the laser as well as the basics of laser surgery, its risks and post-operative recovery.

**Discrete Distributions:
Applications in the Health
Sciences**

by Daniel Zelterman, Ph.D. '83, professor of public health (biostatistics) (Wiley) This book provides an overview of discrete distributions and their applications in the health sciences. Zelterman focuses on real examples, giving insight into the utility of the models, the properties of each distribution and the methods that led to their development. Examples come from the health sciences, including cancer and epidemiology, and from demography.

**On the Take: How Medicine's
Complicity With Big Business
Can Endanger Your Health**

by Jerome P. Kassirer, M.D., adjunct professor of medicine (Oxford University Press) Compiled from interviews with hundreds of physicians, Kassirer's book delves into the kind, extent and consequences of physicians' collaborations with industry.

**Pediatric Toxicology:
Diagnosis & Management of
the Poisoned Child**

by Timothy B. Erickson, M.D., William R. Ahrens, M.D., Steven E. Aks, O.D., Louis Ling, M.D., and Carl R. Baum, M.D., assistant professor of pediatrics (McGraw-Hill Professional) Evidence-based and age-specific, this book guides the clinician through the diagnosis and management of the poisoned pediatric patient. Features include case presentations throughout; a self-assessment section with more than 200 questions; antidote dosage tables; color plates; and coverage of herbal products, vitamins, cosmetics, spider bites and snake bites.

**Atlas of Foot and Ankle
Sonography**

by Ronald S. Adler, Ph.D., M.D., Carolyn M. Sofka, M.D., and Rock G. Positano, D.P.M., M.Sc., M.P.H. '89 (Lippincott Williams & Wilkins) This atlas is a complete guide to using ultrasound to diagnose foot and ankle disorders. More than 160 illustrations display both normal ultrasound anatomy and a variety of pathologic states.



Clone Being: Exploring the Psychological and Social Dimensions

by Stephen E. Levick, M.D., HS '78 (Rowman & Littlefield) Levick uses narratives of patients from his own practice along with studies of twins, namesakes, adoptees and offspring of famous parents to anticipate the challenges that human clones and their "families" will face and how to meet their psychological and social needs.

Against the Spirit of System: The French Impulse in Nineteenth-Century American Medicine (paperback)

by John Harley Warner, PH.D., professor and chair of the history of medicine, American studies and history (Johns Hopkins University Press) Warner describes how, between the 1810s and the 1860s, when Paris emerged as the center of Western medicine, hundreds of Americans studied in Parisian hospitals and dissection rooms and then applied their new knowledge to advance their careers at home and to reform American medicine.

A Woman's Guide to Sexual Health

by Mary Jane Minkin, M.D. '75, HS '79, clinical professor of obstetrics, gynecology and reproductive sciences, and Carol V. Wright, PH.D. (Yale University Press) This guide includes explanations of how the female body works, problems that may arise and comprehensive solutions for women of all ages who are concerned with their reproductive health.

The Early History of Hospice Buffalo

edited by Abel K. Fink, ED.D., and Donald P. Shedd, M.D. '46, HS '53 (The Center for Hospice & Palliative Care) This book traces the course of Hospice Buffalo from its inception in 1974, including the educational effort that was required to convey to the public and the professions the full meaning of the hospice concept.

The Whistlers' Room: Stories and Essays

by Richard A. Selzer, M.D., HS '61 (Shoemaker & Hoard) Selzer's latest book contains 24 pieces from diaries, memoirs and essays. The title piece is the story of three World War I soldiers who were shot in the larynx and could only communicate by forcing air through tubes in their throats.

The descriptions above are based on information from the publishers.

SEND NOTICES OF NEW BOOKS TO Cheryl Violante, *Yale Medicine*, P.O. Box 7612, New Haven, CT 06519-0612, or via e-mail to cheryl.violante@yale.edu

Gift endows library post and pays tribute to "a nurturing treasure"

John Robinson Bumstead surely knew the story of how his father became the first physician to administer penicillin in the United States. He was 17 years old in March 1942 when his father, John Henry Bumstead, M.D., was caring for 33-year-old Anne Miller. Neither transfusions nor surgery nor sulfa drugs had cured Miller of a streptococcal infection. She was dying and Bumstead was desperate. His colleague, physiologist John F. Fulton, PH.D., M.D., had befriended the Australian researcher Howard W. Florey, PH.D., and helped him come to the United States to begin production of penicillin; Bumstead asked Fulton to obtain a sample of the still-experimental antibiotic. It worked, and Miller lived to be 90.

When he died in July 2003, the younger Bumstead remembered in his will the medical library, as well as Connecticut's historic Mystic Seaport, where he was a librarian, and New Haven's St. Thomas' Episcopal Church, where he was a parishioner. Bumstead left \$1.2 million to the Harvey Cushing/John Hay Whitney Medical Library. Director R. Kenny Marone, M.L.S., used the gift to endow a librarianship at what she calls "one of the premier medical historical libraries in the world."

Built in 1940, the library was established by three men who donated their collections of tens of thousands of volumes of medical literature: neurosurgeon Harvey W. Cushing, M.D.; Swiss tuberculosis specialist Arnold C. Klebs, M.D.; and Fulton. Cushing, says librarian Toby Appel, PH.D., M.L.S., saw the library as "the heart of the medical school," a unifying force in an age of increasing specialization. Thanks to Bumstead's gift, Appel is now the John Robinson Bumstead Librarian for Medical History.

The two-story room that holds much of the 125,000-volume historical collection has a vintage air, with a vaulted wooden ceiling, twin balconies and a fireplace. "There's something special when you can walk in and see Volume One of *The Lancet*," says Marone. "We just have marvelous resources." Among those using the historical library now is medical historian Michael Bliss, PH.D., at work on a biography of Cushing.

Surgeon, historian and writer Sherwin B. Nuland, M.D. '55, HS '61, is among those who have written about the room and its "treasured stacks." In *Doctors: The Biography of Medicine*, he writes: "Of all the libraries in all the educational institutions of our world, there is none quite like this one. ... a sanctum containing the lore and the collected reminiscences of the art of healing ... a nurturing spring for renewal and strengthening of purpose."

—Cathy Shufro



TERRY DAGRADI



BILL BRANSON



JOHN CURTIS (2)

**PAUL FARMER****A human rights view of health care**

“What is the cost of not doing the right thing?” Paul Farmer, M.D., PH.D., asked in March during a talk sponsored by the Diversity Action Committee at the School of Nursing. With that question he challenged the cost-benefit analysis that underpins most global health projects.

In Haiti, where he has spent most of his career, no patient, he said, has ever told him, “Thank you very much for offering me this therapy, but it’s really not cost-effective here.”

In 1987 Farmer co-founded Partners In Health (PIH), which is dedicated to improving health care in poor countries. PIH’s low-cost projects have achieved impressive outcomes in settings where resources were thought to be too scarce to make modern interventions practical. Their cure rate for multidrug-resistant TB—using innovative drug procurement strategies and locally trained community health workers—was 83.3 percent in the slums of Lima, Peru. The same model delivers antiretrovirals for AIDS patients in rural Haiti and in inner-city Boston.

He urged his listeners to have a “technically correct human rights perspective,” in which feasibility is a problem to be solved, rather than an excuse for inaction.

—Colleen Shaddox

STEVEN ROSENBERG**Cautious excitement about a “living cancer reagent”**

The patient was a 57-year-old radiologist with advanced melanoma. The treatment was experimental—it combined immune-sensitized T cells with chemotherapy, and it had worked for a 16-year-old boy at death’s door. After years of unsuccessful trials, the therapy had evolved to the point where it made a volleyball-sized tumor disappear from the boy’s pelvis and left him free of disease.

Did the new patient want to try it? “He said, ‘Absolutely, doc. I want to receive this new treatment while it’s still working!’” recalled Steven A. Rosenberg, M.D., PH.D., head of the surgery branch at the National Cancer Institute.

The patient was joking, but years of effort with vaccine and cell transfer therapies for cancer are starting to pay off, Rosenberg said at Cancer Center grand rounds in May. Combining CD4 cells with sensitized CD8 cells in the right proportion made the difference. “We gave the [16-year-old] patient a cell packet of 23 grams, and it made over half a kilogram of tumor disappear,” he said. “The reason is that it’s a living cancer reagent. These cells continue to live and produce anticancer activity inside the patient.”

—Michael Fitzsosa

JOHN PAOLETTI**Art and plague in the Middle Ages**

When the plague reached Europe in 1348 it was seen as a divine punishment. How else to explain a disease that killed entire families with no regard for their station in life and wiped out as many as two-thirds of a city’s inhabitants?

Along with the civic disruption came a spiritual catastrophe. The plague struck so swiftly that it denied its victims the chance to indulge the rituals that eased the passage to death, said John T. Paoletti, PH.D. ’67, professor of art history at Wesleyan University.

As the plague spread, artists turned to images of Madonna of the Misericordia and St. Sebastian, protectors against the plague, Paoletti said. Cherubic angels flinging arrows at their victims symbolized the still-unexplained plague as victims sought protection from saints and the Virgin Mary, who offered her cloak as a shelter. Medicine of the time offered little hope against the plague.

“Your salvation is dependent upon a confession, on other sacraments, sometimes the Eucharist,” he told an audience at the Program for Humanities in Medicine in April. “The doctor is dead. The confessor is dead. And if they’re not, they’re not going to come to your house.”

—John Curtis

JOHN RUFFIN**Striving not to narrow, but to eliminate, racial disparities**

For years health statistics have revealed a grim dichotomy—members of racial and ethnic minority groups bear a greater burden of chronic and infectious disease. “The problem is here because we ignored the warning signs,” said John Ruffin, PH.D., director of the National Center on Minority Health and Health Disparities.

Addressing an audience of health care providers at the annual meeting of the Division of Prevention and Community Research at the Department of Psychiatry in April, Ruffin said, “If health disparity is to be eliminated it is going to be eliminated by you, not by us in Washington.”

To that end Ruffin has worked to provide the tools to health care professionals. New programs to investigate health disparities, he said, will repay student loans of physicians, establish centers of excellence and endow underfunded institutions. The NIH has also adopted a strategic plan to address health disparities.

“I do believe we are not talking about narrowing health disparities,” Ruffin said. “I really believe we are talking about eliminating health disparities.”

—J.C.



A life among the viruses

Jordi Casals-Ariet spent his life studying and categorizing viruses, and in 1969 his search for the agent behind the mysterious Lassa fever almost killed him. But his near-lethal infection paved the way for improvements in lab safety.

By Kendall Powell



When virologist Jordi Casals-Ariet, M.D., died last February at age 92, his obituaries highlighted two salient facets of his life; the system he designed for classifying the viruses that he spent his life studying, and how one of those viruses almost killed him in 1969.

The virus first appeared that same year in three missionary nurses in Nigeria—a mysterious fever killed two of them in days. Casals-Ariet's laboratory at the School of Public Health seemed the logical place to study samples of the nurses' blood containing the virus. The Yale Arbovirus Research Unit (YARU) held the world's most extensive collection of arboviruses, which are spread by blood-sucking insects, and the presence of leading virologists on the faculty offered the best chance of isolating the agent behind the fever.

Casals-Ariet and Sonja M. Buckley, M.D., an expert in tissue cultures, took on the task of isolating and identifying the lethal virus, named Lassa for the Nigerian town where it appeared, and altered their laboratory methods accordingly. They limited access to the virus and sealed off several lab rooms at the Laboratory of Epidemiology and Public Health. "I slowed down and became meticulous in my techniques," Buckley recalled in her autobiography, "since we could not know how highly virulent this infectious agent might be."

Early in June 1969, three months after the virus arrived at Yale, Casals-Ariet fell ill with fever, chills and severe muscle aches, which he brushed off as a cold. By June 15 he was in an isolation unit. His only hope was the surviving nurse, Lily Pinneo, who was recovering at home in Rochester, N.Y. Researchers

OPPOSITE TOP His efforts to identify the virus underlying Lassa fever almost cost Jordi Casals-Ariet his life. It's still unclear how, despite extraordinary laboratory precautions, he became infected.

BACKGROUND In June 1969, days before he became infected with Lassa fever, Casals-Ariet (second row, fifth from left) posed for an annual photo with the infectious disease faculty at the School of Public Health.

RIGHT Sonja Buckley, an expert in tissue culture, collaborated with Casals-Ariet in the investigation of Lassa fever.



and doctors debated whether to give Casals-Ariet her antibody-containing plasma. Although they were convinced he had Lassa fever, a confirmation would take 96 hours, time he didn't have. If they were wrong, an infusion of antibodies might cause a cross-reaction. Robert W. McCollum, then chair of the Department of Epidemiology and Public Health, said YARU researchers ultimately recommended using the antibodies.

"Nobody knew what else to do," he said in an interview from his home in New Hampshire.

Casals-Ariet recovered and continued his research. That Thanksgiving, however, lab technician Juan Roman became ill and died. Lassa fever was confirmed, sending chills through the research group—Roman had never worked with the virus. Work on the live virus was halted and all samples were

sent to a maximum-security lab at the Centers for Disease Control (CDC).

How Casals-Ariet and Roman contracted Lassa fever remains a mystery. McCollum and others suspect that the two inhaled virus particles from dust kicked up by infected mice. Casals-Ariet worked in the same room with the cages and Roman may have passed by the room or talked to him from the doorway.

"The incident forced changes to biosafety nationally, and was one of the seminal events in [bringing about modern] biosafety," said Ben Fontes, M.P.H., the biological safety officer for Yale and a Certified Biological Safety Professional accredited by the American Biological Safety Association. He credits the YARU group's extremely careful precautions with preventing other infections at Yale. Yet, as a result of these and other laboratory infections, a classification system

for viruses, bacteria and other pathogens was created to ensure safe working conditions. After Roman's death, unidentified infectious agents like Lassa were sent to the safest possible lab facilities.

Casals-Ariet went on to investigate Lassa outbreaks in West Africa. In 1973 biologists in Sierra Leone, aided by the Yale and CDC teams, determined that Lassa virus spread from wild rats to humans. Casals-Ariet also worked with the CDC to set up what eventually became the World Health Organization's reference collection of arboviruses. His longest-lasting research legacy, however, may be the virus classification system he developed that shows the relationships of different animal and human viruses—critical information for developing vaccines and tracking and treating epidemics.

Kendall Powell is a freelance writer in Denver.





MOLIERE JEAN

A film to finish

Most descriptions of Haiti include the phrases “poorest nation,” “ravaged by dictators” or “highest AIDS rate.” These are all true. But to public health alumna and documentary filmmaker Amelia Shaw, there is really only one way to describe Haiti: the land where magic and danger collide.

A LETTER FROM HAITI

Text and video stills by Amelia Shaw, M.P.H. '03



On a trip to Jacmel, two hours from Port-au-Prince, Shaw took a taptap, a local form of transportation.

Armed troops and gangs were a frequent sight on the streets of Port-au-Prince as the country erupted in opposition to President Jean-Bertrand Aristide.



The sun rises on Airport Road, a bustling thoroughfare in Port-au-Prince. My assistant, Moliere Jean, is driving and Liony Accelus, an HIV/AIDS counselor, is in the back seat. We are going to meet Liony's Uncle Big, a famous voodoo doctor four hours away in Haiti's breadbasket, the Artibonite Valley.

The radio blares about today's demonstration against the government. It's early February and for three months

students have demanded the resignation of President Jean-Bertrand Aristide. Their cry has been taken up by business leaders and civil society, who say Aristide is responsible for the disappearance of journalists, the death of the economy and violent attacks on peaceful protesters. But most people are just angry at being poor. When Aristide became president in 1994 most Haitians believed that this priest from the slums would lift them out of poverty. Yet most Haitians have only gotten poorer; today more than 80 percent of Haitians live in poverty and many of them blame Aristide.

Moliere winces and shakes his head. Forty people have been killed and hundreds wounded in antigovernment demonstrations. It has become increasingly difficult to work in Port-au-Prince. More than once Moliere and I have hidden in an alley or screeched up the road in reverse because demonstrations disintegrated into a storm of tear gas, stones and bullets as protesters clashed with riot police or Aristide's armed supporters, known locally as *chimères*. I look out the window and wonder what today's demonstrations will bring.

I first went to Haiti as a Yale student on a Downs Fellowship in the summer of 2002, to coordinate a film project about AIDS and social stigma. Due to funding problems, the project was never completed. I returned to Yale to finish master's degrees in public health and African studies, yet I could not let go of my memories of Haiti and her courageous HIV community.

Right before I graduated in May 2003 I won a Fulbright Scholarship, and that fall I touched down in Port-

au-Prince. "I made it," I kept thinking, and was both exhilarated and overwhelmed. I had worked as a summer intern at National Public Radio (NPR), but I had never made a film before. Making films, I felt, couldn't be that different from making radio. The trick is to tell a good story.

I wanted to record the stories of people living with HIV/AIDS, and distribute them in Haiti as a way to reduce stigma and discrimination. Haiti's national television network was behind me, as were international organizations willing to use the videos in outreach campaigns. In a country where almost half of the people cannot read or write, videos and group discussions can break the silence about AIDS.

Over six months, I filmed dozens of men and women—some of whom hid their faces—as they shared a bit of their lives. Some spoke of their fear of orphaning their children, others of their shame at public humiliation, but most spoke of their desire to live and do a little bit of good in the world.

I met Liony through the small, vocal, HIV-positive network in Port-au-Prince. Liony is unforgettable. Tall, dapper, with a wife and a handful of children, he has a talent for making people listen. He spends most of his time working in a grass-roots organization as one of Port-au-Prince's only AIDS counselors.

"People think I am a curiosity," he says, chuckling. "Sometimes I sit for hours on my doorstep and answer people's questions. ... Yes, I still live with my wife, yes we eat the same food, yes my kids play with other kids. Do I sleep with her?" He winks and laughs. "Yes I do, with condoms of course. ... though not so much anymore. I need to keep my strength, *mon cher!*"

Liony gets free antiretrovirals (ARVs) at the Haitian Study Group on Kaposi's Sarcoma and Opportunistic Infection (GHESKIO), one of two research centers in Haiti that distribute medicine to people with full-blown AIDS. Haiti has about 400,000 AIDS cases in a population of 8.2 million, yet only 1 percent receive AIDS drugs, either through GHESKIO in Port-au-Prince or the Zanmi Lasante clinic in central Haiti run by Paul Farmer, M.D., PH.D. This may soon change. With millions of dollars pouring in from the Global Fund To Fight AIDS, Tuberculosis and Malaria as well as President Bush's Emergency Plan for AIDS Relief, more than 30 percent of Haiti's AIDS patients—120,000 people—are expected to receive ARV treatment in the next five years.

Unlike other voodoo doctors Liony's Uncle Big does not claim he can cure AIDS. "The problem isn't mystical," he says. "It's medical."



"You know, if I hadn't gone to the *houngan* two years ago, I probably never would have gotten so sick," Liony says, shaking his head, "But then again I wouldn't be on treatment now either."

A *houngan* is a voodoo doctor. And when people are sick in rural Haiti, the *houngan* is usually the first person they'll see. Most rural Haitians believe that illness is the result of evil, caused by a vengeful or jealous neighbor. And with only 2.5 physicians per 10,000 people, health care in rural areas is not always an option. So the *houngan* becomes a logical place to seek help. Unfortunately for people with AIDS, the treatment they get from a *houngan* usually makes their situation worse.

"I had to drink this brown liquid and sleep outside for days at a time. I spent my savings on it. And in the end, man, I just got sicker and poorer," Liony says. After a few weeks, Liony's father found him weak and shivering, and carried him to a health clinic.

"I had pneumonia," Liony says. "But the good thing is, I went on medications." When Liony's doctor saw that his T-cell count was below 200, he referred Liony to GHEKIO for treatment.

"AIDS is AIDS. A curse is a curse."

We enter the sprawl of Cité Soleil, the slum on the edge of Port-au-Prince famed for its mind-bending poverty and patrolling *chimères*. We weave through crowds of people stepping crisply over open sewage. A lucky few are on their way to jobs in the industrial complex, assembling baseballs or T-shirts for a buck fifty a day. In a country where unemployment soars to 70 percent, \$1.50 seems like a godsend. We come to a roadblock guarded by kids with dreds, and Moliere instinctively turns down the radio and flashes an open palm. "Cinq ans!" the hand says, "Five years! Five more years for Aristide!" Moliere doesn't support Aristide, but here an open palm is a ticket to safety.

We leave Cité Soleil and drive over broken roads, past fishing villages, rice paddies and women hawking peanuts and melons. Then the land dries up and the dust rises.

"See those up there?" Liony says, pointing to little shacks on the hillsides. "Those are all *peristyles*, the temples where *houngans* receive their clients." *Peristyles* dot the naked hillsides as far as the eye can see.

We walk a maze of dusty footpaths to Big's *peristyle*. It is a work of art. The temple walls are covered with murals of saints, serpents and mermaids, and the air flutters under a canopy of colored streamers. Big is sitting outside on a stool in front of a large painting of the Virgin Mary and a rainbow.

"Uncle Big!" Liony calls out, and Big chuckles and spits. He has a fat belly and old red eyes. He waves children away and gestures for me to sit. I ask him what he knows about AIDS. His response leaves me floored.

"AIDS is AIDS. A curse is a curse. Now *diarrhea* can be supernatural. But AIDS ..." Big pauses to spit in the dirt, "nope, AIDS can't."

Most *houngans* claim they can cure the "AIDS curse," called *mò sida* in Creole. They say you get *mò sida* when your enemy makes a powder out of someone who died from AIDS and blows it on you. If Big thinks someone might have AIDS, I ask, what does he tell them?

"What *can* I tell them? I say, did you go to the doctor ... no? Well then go and get an HIV test. Then you can come back."

In Haiti, this is unheard of. Most people prefer not to know their serostatus—a positive result hangs like a death sentence. But being told to get an HIV test by a *houngan* could be just the encouragement people need to seek testing and counseling.

"If the test is positive, I say there is nothing more I can do." Big raises his hands in the air. "Because the problem isn't mystical, it's medical. And they need to go see a medical doctor to resolve it. I can't cure AIDS!"

But what about all the *houngans* who say they can?

"Ah! It's all bluff! Bluff!" Big is clearly upset by the question. "*Houngans* can't treat AIDS! I mean, look around, now honestly, what would I use to treat AIDS?"

I do look around. I see a skull lying on a miniature coffin, a brown baby doll head, an American flag and three plastic coke bottles. Less than 20 years ago scientists were asking themselves the same question—what can we use to treat AIDS? Well, we've got our answer. Treatment exists. Now the big question is, how do we get treatment to the people who most need it—poor people living on the margins of global society?

Sitting in Big's *peristyle* in the dusty plains of the Artibonite, it dawns on me that for Haiti the answer may sit at the crossroads of public health and voodoo. Public health

Amelia Shaw in a self-portrait
taken at Big's *peristyle*.

professionals around the world need to keep advocating for affordable drugs in poor countries. And then they need to collaborate with the people on the ground who really make a difference.

No matter how unorthodox his methods, a guy like Big is saving lives. By affirming the role of medicine in a world dominated by the supernatural, he is directing rural people to the tests and treatment they need. If more *houn-gans* follow Big's lead, Haiti could see a turning point in the fight against AIDS.

A hospital becomes a war zone

On our return the capital disintegrates into chaos.

The radio reports that a student was shot with a tear-gas canister and taken to Canapé Vert hospital for emergency surgery. While doctors are trying to remove the canister from his abdomen, it explodes. I am picturing white smoke pouring out of a wound in a young man's body. The hospital is evacuated. The student dies. His classmates surround the hospital, enraged.

As the violence escalates I am drawn to epicenters of conflict to film, to record, to try and understand the country. I sometimes want to play reporter, but it isn't journalism that inspires me—it's public health. Because journalists are cynical, and I still believe in the power to change.

Moliere and I leave Liony at his house and then go to the hospital. The chain of events is fast and brutal. Students drag abandoned cars into the road and light them on fire. The riot police finger their M16s. Pistols crack on the hillside, and a woman screams, "The *chimères* are coming down the hill!" The road explodes in a flurry of shouts and lost shoes. The police storm the flaming barricades—sparks fly, bullets fly, students fly or hit the ground and pray.

Rat tat tat tat tat tat tat.

If you have ever stood near machine gun fire, you know the sound: loud, and very, very mean. The hospital becomes a battleground. Patients in white robes running in panic totter and fall in the courtyard. Doctors scream. Students hide and riot police chase them from room to room. In the confusion, a woman is raped on the operating table. She had been recovering from minor surgery; her story was broadcast on that night's news.

I run through the thick smoke with my camera, and come face to face with a riot police officer in sniper position,

his M16 trained on my left shoulder. I feel a hot red point where the bullet would enter. He is screaming at me, and I am paralyzed. When I hear Moliere's frantic footsteps behind me, I shout the only thing that comes into my head:

"I AM A JOURNALIST! I AM A JOURNALIST!—PLEASE! DON'T SHOOT!" My only proof is my expired intern badge from NPR, but in retrospect, I believe this saves us both. Lucky for me, dead white journalists are bad press for Aristide.

In darkness, a candle brings light

Haitians have a saying: "When you run from the rain you only end up falling in a big river."

In the weeks that followed, the country crumbled around our ears, and in mid-February the city imploded. People stayed indoors while businesses were looted, neighborhoods were barraged with tear gas and roads blocked by flames. The nights were filled with gunfire and shouts and the days saw hospitals overflowing. Yet the storerooms were bare and many doctors stayed home because, as in the case of Canapé Vert, even the hospital becomes a war zone.

I watched my work become insignificant as people's conception of risk changed entirely. It is hard to think about AIDS when staring down the barrel of a gun. So while I wasn't surprised when, a few days before Aristide left the country on February 28, I was told by the U.S. Embassy to evacuate, I was overcome with a feeling of great loss.

But in moments of darkness, one candle brings light.

While I am packing my bags, my cell phone rings. It is Liony.

"Amelia! When are we going back to the Artibonite? We need to film another interview with Big!"

Liony is unstoppable. A group of armed rebels—disgruntled *chimères*, drug traffickers and convicted criminals—had taken over the Artibonite the week before and were moving south. They have sealed off the country's northern corridor, setting the stage for a scene Haitians have seen too many times: state decapitation. Whereas over a decade ago, Aristide rose to the presidency on an unprecedented wave of popular support, this week he is about to become just another overthrown dictator in Haiti.

When I tell Liony I've been ordered to evacuate, he doesn't miss a beat.

"Don't worry, you'll be back. We have a film to finish." His voice is both confident and nonchalant. "You know, our



film is really going to change the way Haitians think about treating AIDS.”

For the rest of the afternoon, my cell phone does not stop ringing. Liony has mobilized the entire AIDS community to give me a message: “Hey Amelia! Don’t lose hope! You’ll be back—we have a film to finish!” I am touched that they are calling to comfort me—after all, I am the healthy one getting out.

Yet I learned that day that the optimism of HIV-positive Haitians is unbreakable. By force of will, they beat the odds and survive in a world where magic and danger collide—often with deadly consequences. These people are heroes. They are also Haiti’s hidden treasure. Because when the rumbling stops and the smoke clears, Liony and his comrades will be the first to climb from the wreckage. They will smile and rub their hands, ready to rebuild stone by stone. And God willing, I will be there with them too. After all, we *do* have a film to finish. **YM**

In late July Yale Medicine received this e-mail from Amelia Shaw:

I arrived in Haiti two days ago. ... It has been an emotional journey. The poverty here is stultifying—it shocks you even when you expect it. Things are much calmer than when I left, but a lot of unreported violent crime occurs in the slums, where most of my friends live. And floods have knocked out parts of their houses, leaving them open to intruders. People seem tired, very weary of “the everyday” in Haiti, which includes the most hair-raising bits and pieces of reality. The money has deflated in value, but prices have not, and a lot of people can’t buy food.

But the good things are there too—the electricity is on most of the time. And the musicians have returned, which is a sign of relative stability. United Nations vehicles are everywhere, and hopefully the police are strengthening in numbers.

I saw Liony today. It was such a happy moment! That has been the best for me, to see the people I have worked with so closely! I am so happy to be back here! It is wonderful, though it also makes my heart bleed.

Amelia Shaw, M.P.H. ’03, graduated from Yale in 2003 with joint master’s degrees in public health and African studies. She returned to Haiti in July 2004.

Staying safe abroad

Facing instability like the recent upheaval in Haiti may be the norm rather than the exception for people working in international health, says Frank J. Bia, M.D., M.P.H., FW ’79, co-director of the Yale/Johnson & Johnson Physician Scholars in International Health program, which sends residents to more than 14 countries. “The inherent nature of international health is working in an unstable world,” says Bia, professor of medicine (infectious disease) and laboratory medicine. “It’s unstable because it’s unfair, and I think it’s getting worse.” Increasingly, he said, the world’s poor are becoming aware of “how bad off things really are in terms of the increasingly skewed distribution of both wealth and technological resources.”

Since the international program began in 1981, more than 100 Yale residents have volunteered for a month or two at Haiti’s Hôpital Albert Schweitzer. The program has rarely suspended activities due to turmoil abroad, but temporarily stopped sending physician volunteers to Haiti this year, said program co-director and professor of medicine and public health Michele Barry, M.D., HS ’77. She expected that rotations in Haiti would resume later this year. (Four years ago Yale suspended its program in Zimbabwe in the wake of widespread violence there.)

Second-year resident Emmanuelle Clérismé-Beaty, M.D. ’02, found herself in a strange situation while volunteering in Haiti last January in the weeks preceding the ouster of President Jean-Bertrand Aristide. Although most foreigners felt safe at the hospital, she was harassed by hospital workers who wanted her to join protests against the hospital administration. Clérismé-Beaty,

who grew up in Haiti and speaks Creole, was taken for a “local.”

“It got pretty scary,” she recalls. She chose to leave a few days early, catching a ride to the airport before dawn to reduce the danger of being robbed on the road. Clérismé-Beaty feels ambivalent about the experience. “Being there, you knew you were needed, and you were appreciated,” she says, adding, “I didn’t really feel safe.”

For those in charge of sending students and residents abroad, security is always a concern. Summers are nerve-wracking for Curtis L. Patton, Ph.D., head of the Division of Global Health at the School of Public Health. Patton directs the Downs International Health Student Travel Fellowship program, which funds research for about 16 students of public health, nursing and medicine who spend a summer abroad.

He relies on four sources to judge the safety of research sites: advisories from the State Department and the Centers for Disease Control and Prevention, Yale College’s list of countries declared off-limits to undergraduates and information gleaned directly from people at the sites. This spring he advised one student to avoid Haiti. She went anyway, and “she seems to be fine,” Patton reported in mid-summer. He barred another student from studying diarrheal diseases in Iraq; she went to Tanzania instead.

“I have my heart in my throat all summer until they return,” says Patton.

—Cathy Shufro



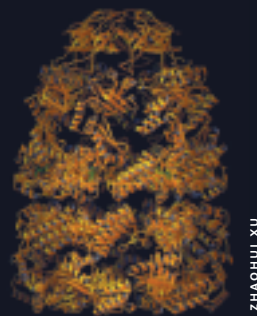
Getting the right fold



For almost two decades Arthur Horwich has been unraveling a basic biological mystery: how proteins achieve their native shapes.

By Cathy Shufro
Photograph by Terry Dagradi

Arthur Horwich and collaborators have explained the workings of molecular folding machines known as chaperonins. His laboratory team includes (from left) Eunice Park, Wayne Fenton, Krystyna Furtak, Jörg Hinnerwisch, Horwich, George Farr and Fernando Agarraberes.



The chaperonin GroEL, shown here with the co-chaperonin GroES, helps proteins fold properly.

ZHAOHUI XU



Christian B. Anfinsen, PH.D., a biochemist at the National Institutes of Health (NIH), in the early 1960s answered one of biology's fundamental questions. He explained where proteins get the marching orders that direct their metamorphosis from amino acid chains into active, func-

tional three-dimensional sheets and helices. Function follows form, and those distinctive shapes dictate how the proteins work. Shape allows the lock-like structure of an antibody to trap the key-shaped antigen to fight infection; it allows an enzyme to work on a specific substrate to speed up a chemical reaction, such as digesting food; and it permits a hemoglobin protein to bind to oxygen and carry it in the blood. But when a protein is improperly folded, its function is lost, and that can lead to disease.

Scientists already understood that DNA embodies a code that is transcribed onto RNA, which in turn directs the cell to produce the 30,000 vital proteins that are the body's building blocks. Scientists recognized that these polypeptide chains—composed of the 20 amino acids—don't function as proteins until they have folded, but they did not know, before Anfinsen, where proteins got the instructions to fold.

Anfinsen shared a Nobel Prize in chemistry in 1972 for a simple experiment that yielded remarkable results. He unfolded an enzyme to see if it could find its way back to its active, folded form. It did, showing that the sequence of amino acids itself contains the information that tells a protein how to fold, and that the protein folds spontaneously.

That seemed to be the final answer when Arthur L. Horwich, M.D., HS '78, was studying biochemistry as a freshman at Brown University in 1969. But 18 years later, Horwich, by then an assistant professor of genetics at Yale, began to think there might be more to protein folding. While studying the passage of unfolded proteins through membranes into mitochondria, the cell's power source, he asked whether a specialized protein might be assisting the folding process.

Anfinsen had correctly discerned that amino acid sequences do provide the information needed for folding, but Horwich found evidence that many amino acid chains need help: he discovered "folding machines" that provide that help.

Now the Eugene Higgins Professor of Genetics and Pediatrics and a Howard Hughes Medical Institute (HHMI) investigator, Horwich has spent 17 years studying those machines.

"This work is as basic to biology as understanding the nature of genes and how genes are expressed and translated into proteins," says colleague Richard P. Lifton, M.D., PH.D., the chair and Sterling Professor of Genetics at Yale and an HHMI investigator. "The part that is really breathtaking about Art's work is that he went all the way from basic discovery of the protein-folding machine to understanding how it works on an atomic level. ... It's just one of the nicest pieces of work one will ever see in biology."

Seeking what's never been seen

Horwich rarely sets foot in his office at the Boyer Center for Molecular Medicine. He'd rather be in the lab.

"I just have never matured beyond postdoc," jokes Horwich, a slim man with unruly brown hair, glasses and a droopy, graying moustache. "I still work at the bench every day. I still like to do my own experiments. I like to be able to live with and suffer through the problems of understanding how things work side by side with my own people, and I always have one or two things for myself that I consider my own laboratory struggle."

When Horwich must be away, he calls daily to check on the progress made by his 10-member team. "I drive them nuts."

"He's a very, very intense person," says Krystyna J. Furtak, M.S., an HHMI research technician who has worked with Horwich for 20 years.

Dressed in faded corduroys, winter and summer, Horwich sets up his experiments beside the makeshift office he has created at the end of his bench, where piles of journals and papers rise from the floor and windowsill. The lab draws Horwich like a magnet, because there each day holds out the chance, however small, "to see something that's not been seen before."

Horwich grew up in River Forest, a Chicago suburb where he enjoyed snowball fights that endangered priceless stained-glass windows in the neighborhood's Frank Lloyd Wright homes. His father, Walter, a Chicago businessman, shares Horwich's interest in science.

"He was a sort of frustrated scientist," Horwich says. "He let me be a ham [radio] operator and he was just as inter-

ested as me. He was up on the roof with me putting up antenna systems. He had to draw the line when I wanted to bounce the signal off the moon. He wouldn't let me put a dish up on the roof."

Horwich graduated in 1975 from Brown Medical School, where he was class valedictorian, a fact he mentions only to tell a story on himself. "I gave this speech saying Brown should train great primary care physicians. So I promptly went off and did research." He jokes that his parents took the speech to heart. "I think the folks are still waiting for me to practice medicine."

During his pediatrics residency at Yale he felt the lure of genetics. After his residency, he spent three years at the Salk Institute in California with tumor biologists Walter Eckhart, PH.D., and Tony Hunter, PH.D.

"I watched Tony make what is probably one of the most important discoveries of the latter part of the 20th century," Horwich recalls. In 1979 Hunter discovered tyrosine phosphorylation, a process that plays a role in normal cell signaling and growth and that also contributes to the formation of cancerous tumors if it goes awry: of 300 genes implicated in cancer, 90 encode tyrosine kinases.

"Art still works in the lab, which amazes me," says Hunter, still at the Salk Institute. "He seems to have retained the enthusiasm for science and the day-to-day excitement that most well-established scientists running big labs seem to lose."

Horwich returned to Yale in 1981 to work with human geneticist Leon E. Rosenberg, M.D., HS '63, who later became dean of the School of Medicine. "I worked with a large number of postdoctoral fellows, but none had Art's combination of brilliance, a love of experimentation and a fearlessness to learn what he needed to learn to go further," says Rosenberg, now a professor at Princeton.

A late-night discussion and a mutant yeast

Horwich's first significant discovery grew out of a late-night conversation in 1987 with then-graduate student Ming Cheng, M.D., PH.D., about whether unfolded proteins crossing membranes into mitochondria might get help folding into active forms. "Maybe there's such a thing as a folding machine," Horwich proposed. Using a library of mutant yeast strains, they looked for one in which a protein that had clearly entered the mitochondria had reached its mature

size, yet showed no sign of enzyme activity. That would suggest that it had not folded. They found such a mutant within days. They could hardly believe what they were seeing.

They traced the mutation that disabled folding to a defective gene for mitochondrial heat shock protein (called Hsp60). Heat shock proteins, scientists believed, played a role in protecting already folded proteins. When Horwich and Cheng inserted a normal gene for Hsp60 into the mutant yeast, protein folding resumed.

"It didn't just *hold* the proteins," says Horwich, who still sounds excited 17 years later. "It *folded* them. It was a folding machine."

But Horwich's team was not ready to announce the discovery. "We thought there must be something else to explain it. ... We were terrified of being wrong." They worked with another group in Germany to confirm their findings. That group was led by Franz-Ulrich Hartl, M.D., PH.D., a director of the Max Planck Institute of Biochemistry, who along with Horwich and R. John Ellis, PH.D., of the University of Warwick in the U.K., won the 2004 International Award from the nonprofit Gairdner Foundation, which recognizes outstanding achievements in biomedical research. The three were honored for having "revolutionized our understanding about basic cellular functions."

In 1989, after a year of testing and retesting of a variety of proteins in mutant yeasts, Horwich and Hartl published their findings in *Nature*. Working together, the scientists and their teams went on to show that specialized proteins mediate protein folding in archaeobacteria, prokaryotes and eukaryotes.

In the years that followed their discovery of the role of Hsp60, Horwich and his colleagues turned to understanding the inner workings of a closely related folding machine in bacteria called GroEL, using genetic, biochemical and structural methods. Like Hsp60, GroEL is a chaperonin, a double-ringed molecular "machine" that resembles two stacked doughnuts.

Chaperonins begin their work by binding an unfolded or misfolded polypeptide molecule inside one of the rings (see diagram on page 29). The working principle, Horwich says, is that unfolded or misfolded polypeptide chains expose hydrophobic ("greasy") surfaces that become buried to the interior in the fully folded, functional ("native") form. In the nonnative state, the exposed surface of one protein

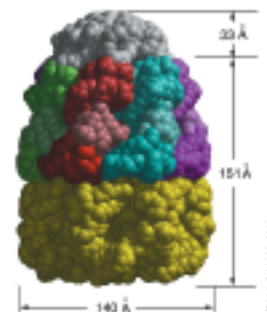
can stick to that of another, setting off a process of multi-molecular aggregation. This results in an inactive protein that cannot perform its intended function; in addition, aggregates can harm the cell. Binding in a chaperonin ring serves to mask such surfaces of the nonnative protein, because the chaperonin itself has a cavity lining that is a hydrophobic surface, which interacts with that of the nonnative protein. It is thus prevented from aggregating.

The machine then switches to a folding-active state by binding ATP, a unit of energy currency, and a lid structure, a co-chaperonin called GroES. The chaperonin ring that binds GroES undergoes large, structural changes that cause its hydrophobic lining to turn away from the bound polypeptide and interact directly with GroES. In the process, the polypeptide is released into the now-encapsulated chamber, where it folds to its native form. Proper folding is favored in this chamber, because the polypeptide is in solitary confinement with nothing else to aggregate with, and because it is now next to watery walls that encourage the burial of its hydrophobic surfaces and exposure of its watery ones, properties of the final native state. Finally, after 10 seconds, a step of conversion of ATP to ADP causes the machine to release the lid structure, and the polypeptide leaves the cavity. As the cavity of the ring that had been occupied becomes emptied, the other ring swings into action to perform the same function with another polypeptide chain.

But each protein does not always fold properly on the first try, and Horwich says the protein-folding mechanism reveals something fundamental about where a living cell directs its energy. The machine will try again and again to fold the protein correctly. Each cycle consumes seven ATPs (energy-storing molecules), and for some proteins, up to 20 trials may be required. “Think of the cost,” says Horwich. “It’s a very expensive process. The cell has decided it will spend a lot of ATP to try and correctly edit the protein-folding process.”

The consequences of misfolded proteins can be dire. Misfolded proteins are linked to hundreds of devastating diseases—including amyloid diseases such as Alzheimer’s, Parkinson’s, Huntington’s, ALS (also known as Lou Gehrig’s disease) and spongiform encephalopathies like mad cow disease. In the amyloid disorders, misfolded proteins stick together to form fibrils, or plaques, in the brain. Scientists are not yet sure how these diseases occur. For example, they don’t know whether the fibrils themselves injure the brain or

This view of the chaperonin molecule shows GroEL and GroES in images taken from crystal structure determinations carried out in collaboration among Arthur Horwich, Paul Sigler and colleagues.



whether the misfolded proteins cause damage on their way to forming fibrils.

Looking outside the cell

After two decades of studying the genesis of proteins within the cell, Horwich is interested in what happens to proteins in the extracellular spaces of the brain. During a break from the lab on a hot afternoon last summer, he mentions being both troubled and intrigued by a recent article in *Nature* examining the aging of the human brain. The article, “Gene Regulation and DNA Damage in the Ageing Human Brain,” reports that brain function begins to deteriorate when we get “old”—age 40. “That’s the shocker,” says Horwich. “All the good things are going down—vesicular trafficking, synaptic plasticity. The DNA is damaged increasingly. ... Yet all these machines that help us to repair damage, including the heat shock proteins, are getting induced.”

He sees some good news in this observation: ramped-up defenses suggest avenues for treating disease. Horwich envisions two approaches. “If you want to think about what to do about neurological diseases that involve misfolded proteins, you could shut down production of the proteins that get misfolded. Or you could upregulate this line of defense [provided by molecules like chaperonins].”

He wonders whether the body has other machines similar to chaperonins that might prevent the misfolding of proteins that causes disease. “What other machine is out there that we’ve really missed, that’s outside the cell? Everyone’s been focused inside the cell.”

One step is to learn about the structure of the fibrils formed by misfolded proteins in the brain. Horwich and his team, in collaboration with Wayne Hubbell, PH.D., at UCLA, have been using a spectroscopy approach to study how the normal structure of a serum protein, transthyretin (pre-albumin) gets converted into an amyloid in a disease known as familial amyloid polyneuropathy.

“I really want to focus on these things. I don’t have an unlimited amount of time. After reading the *Nature* paper about the brain, I’m not too optimistic,” says Horwich with a wry smile. He’s 53.

Horwich is not wedded to the idea of curing disease, however. “Of course it would be wonderful,” he says perfunctorily. And he does not seem interested in fame. Although he was recently elected to the National Academy of Sciences,

and although as a Gairdner winner he has, statistically, nearly a one-in-four chance of going on to win a Nobel, Horwich shrugs when he is described as a distinguished scientist. It's the science itself that drives him. "I'm particularly interested in seeing the beauty of how Mother Nature has handled the problems of protein folding and this last step of information transfer. ... Mother Nature decided it's not going to leave even the step of protein folding to chance."

Outside the lab, fishing and tennis

Although Horwich spends long hours in the lab, that's not to say he works nonstop. On weekends, he plays tennis, sometimes with his 24-year-old daughter Annie, a photographer. A few years ago, 26-year-old Michael, an M.D./PH.D. student at the University of Massachusetts, introduced his father to fly-fishing. When it comes to fishing nowadays, his youngest child, sixth-grader Dave, is "a complete fanatic."

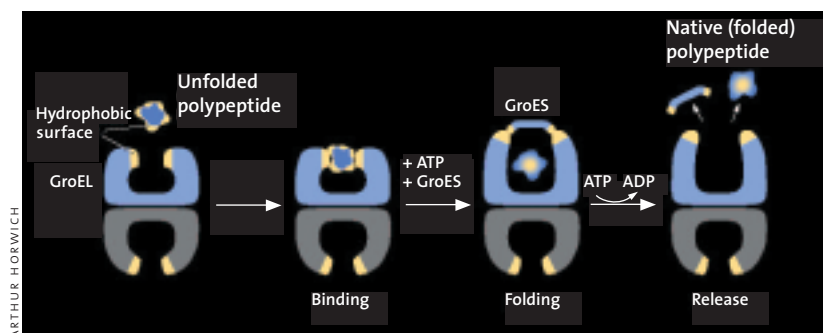
Horwich is happy to get away occasionally, taking a few days off to relax on Block Island or backpack in the Adirondacks, "because you think about things on a different plane when you're not right up against it. I'm OK with being away from it for a while, but there's a feeling that it's time to get back and touch it again."

His wife, Martina Brueckner, M.D., FW '90, understands the pull of the laboratory. An associate professor of pediatrics (cardiology), she studies the development of left-right asymmetry in the embryo, which affects the placement of the heart and viscera. They both spend long hours in the lab.

What keeps him in the lab is not the anxiety of falling behind, says Horwich. "It's just: can we find the next really big thrill? There's no substitute for the thrills we've had. Most people are lucky if they have one. I've had two."

The first came after he and Cheng found the yeast mutant that failed to fold proteins. The second came when Horwich saw for the first time the structure of the bacterial chaperonin. For four challenging years in the 1990s, Horwich and his team had collaborated with the group led by the late Yale structural biologist Paul B. Sigler, M.D., PH.D., trying to get an image of the protein molecule. They grew hundreds of crystal forms of GroEL, altering each slightly in hopes of finding one that would create a clear image by means of X-ray crystallography. Then, at last, one of Horwich's graduate students, Kerstin Braig, hit upon a

In the diagram below, a polypeptide passes through the folding machine GroEL to achieve its proper three-dimensional shape. Each cycle consumes seven energy-storing ATP molecules, and for some proteins up to 20 trials may be required for successful folding.



crystal that worked. It was a molecule that had an accidental mutation that made it diffract well. Horwich calls the discovery pure luck.

Just a few days later, Horwich's and Sigler's groups drove to the synchrotron at Cornell in Ithaca, N.Y., where they could use its high-intensity X-ray source to collect more data about the molecule. Assembling the data, or "phasing the crystal," required several trips over several months, and Zbyszek Otwinowski, PH.D., a member of Sigler's lab at the time, performed what Horwich describes as "an amazing feat." In just two days, Otwinowski "solved the structure" of GroEL and created a three-dimensional model of the protein.

"We worked for four years trying to get the crystalline structure of this, and there it was, at atomic-level resolution. That was a religious moment."

Having experienced these highs creates a certain tension. "It's a wonderful experience, but you always wonder, are you ever going to have another really fabulous revelation? You try to set things up so you will. You try to see beyond where things are, to see a way to open up a system so you can see how things work in one fell swoop. Science is usually more incremental, and that's OK. It's where you get to see a whole vista at once—that is really special stuff.

"It's like pulling Venus from the waves. You have no idea what you're going to see until you see it. It's just unbelievable." **YM**

Cathy Shufro is a contributing editor of *Yale Medicine*.

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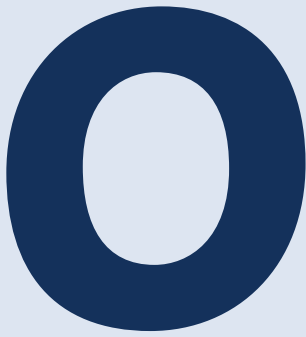
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Recreating the residency

Under new rules, residents may not work more than **80 hours** a week.

This change has forced physicians to **rethink** the underpinnings not only of training,
but also of **patient care**.

By Peter Farley
Photographs by John Curtis



On the night of March 4, 1984, an 18-year-old patient named Libby Zion was admitted to the emergency room of Cornell Medical Center's New York Hospital complaining of fever and an earache. Just hours later, while in the care of the hospital's residents, she lay dead. Zion's father, Sidney

Zion, was a prominent, well-connected journalist and a former federal prosecutor, and in what would soon become notorious as "the Zion case," he and his wife filed suit, claiming that the negligence of the hospital's overly fatigued and poorly supervised house staff was the direct cause of their daughter's death.

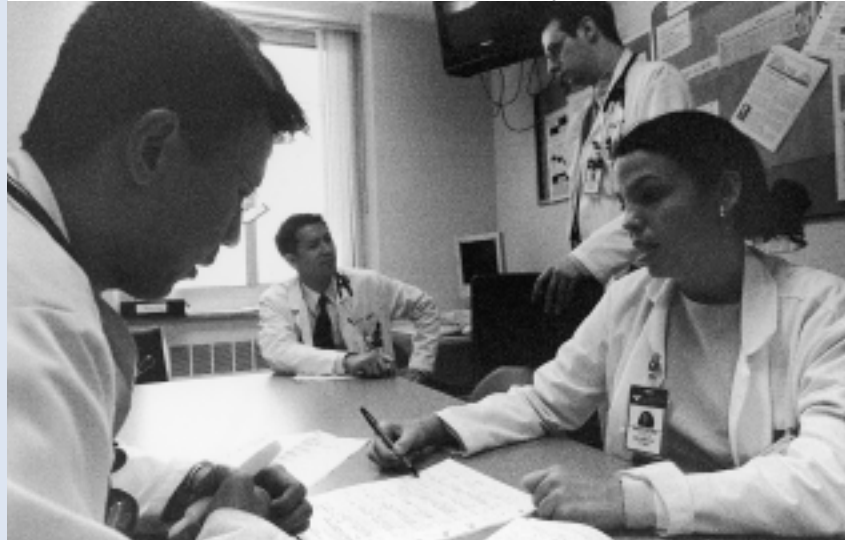
In the end, a New York grand jury did not find sufficient evidence that overtired residents were responsible for Zion's death, and postmortem lab results suggested that she had died from an overdose of cocaine. But the enormous publicity surrounding the Zion case cast a bright light on aspects of graduate medical education that the American public had long ignored. Medical residents' duty hours, once an esoteric and jealously guarded prerogative of medical school faculty and hospital administrators, had become the focus of intense interest on the part of legislators and regulatory boards nationwide.

In the wake of the Zion case, New York state and Puerto Rico enacted statutes that set limits on duty hours for hospital house staff. But the most significant shock wave from the case wasn't felt until July 2003, when the Accreditation Council for Graduate Medical Education (ACGME), citing concerns for patient safety, imposed strict limits on residents' duty hours at all teaching hospitals. Though the rules themselves are straightforward—they limit residents to an 80-hour workweek and 24 continuous hours on call, and guarantee one day off each week—they have set off a sea change in American medical education and patient care. The traditional residency system was deeply ingrained in the educational structures of medical schools, and the presence of hardworking, inexpensive house staff has long been taken for granted by hospitals in their day-to-day operations.

Yale is no exception. Some 175 new residents in specialties as diverse as anesthesiology and urology arrive in New Haven each year. Though most of these residents are technically employees of Yale-New Haven Hospital (YNHH), the dual educational and clinical missions of residency are reflected in the Graduate Medical Education Committee, which directly oversees the program and reports both to the chief of staff at YNHH and to the dean's office at the School of Medicine.

Some residency programs, such as pediatrics and psychiatry, have adapted fairly easily to the new rules, but for

At the end of the morning, after work rounds, residents' report and attending rounds, Charles Dela Cruz and Loida Viera (foreground) go over treatment plans for their patients, as do Francis Chan and Robert Bercovitch.



A day in the life

By 7:15 on a recent Monday morning, intern Loida Viera, M.D., and second-year resident Charles Dela Cruz, M.D., have been working for 24 hours

straight in YNHH's new Acute Care for the Elderly (ACE) unit. Viera admitted six patients to the unit during the night, and she and Dela Cruz are preparing for "work rounds," during which they will convey all they know about the new patients to their counterparts on their residency team, intern Robert Bercovitch, M.D., and second-year resident Francis Chan, M.D. Medical student Robert McGlynn will join them.

Along with attending physician Leo M. Cooney Jr., M.D. '69, Humana Foundation Professor of Geriatric Medicine, the five move in a tight pack through the hallways before coming to rest in the hall outside

the room of a newly admitted patient. By tradition, interns present cases, and Viera, a freshly minted graduate of Tulane University School of Medicine, betrays no fatigue or uncertainty as she fashions clipped, efficient clinical narratives from the blizzard of acronyms, abbreviations and numerals that are the lingua franca of modern medicine.

The truism that today's patients are far sicker than those under residents' care 30 years ago is nowhere more true than in Cooney's ACE unit. As Viera presents updates on the unit's more familiar cases, Chan and Bercovitch must keep track of multiple diagnoses, a litany of test results and combinations of several medications for each patient as they prepare for their shift.

others the regulations have forced a sweeping re-evaluation of both education and patient care. For example, the sheer size and complexity of the residency program in internal medicine, which shepherds 180 residents through 13 clinical rotations at four different hospitals each year, have required painstaking organizational and educational adjustments.

“The structure of the program at Yale has been built over the last 50 years, and it has been built in pieces, so nobody knew when you changed one piece what the domino effect would be,” says Asghar Rastegar, M.D., professor of medicine (nephrology) and associate chair for academic affairs. “This is sort of like a spring cleaning. Every room in the house had to be looked at.”

Institutions that skirt the new rules do so at their own peril. In 2002 the ACGME threatened to withdraw accreditation of the surgical residency program at Yale for violations of its previous duty-hours guidelines, and the accrediting board has come down hard on other elite programs since July 2003. Residency programs at Johns Hopkins, Duke and the University of Rochester have been subjected to similar “adverse actions” by the ACGME. However, just one year after the new rules took effect, Rosemarie L. Fisher, M.D., HS ’75, professor of medicine (digestive diseases) and director of graduate education at the School of Medicine, says that Yale has adapted well. According to Peter N. Herbert, M.D. ’67, HS ’69, chief of staff and senior vice president for medical affairs at YNHH, the close call with the surgical program’s accreditation may have been a blessing in disguise: the crisis led YNHH to take steps over the past two years—the Department of Surgery hired 12 physician assistants to lighten residents’ workloads, for example—that put Yale ahead of the curve for compliance.

Herbert says that problems arising from the new regulations may loom large at the moment, but he is confident that the rules will present few difficulties for Yale or for graduate medical education in general in the long run. “I think all of these concerns will be history in two or three years,” Herbert says. “We will find a way to educate our residents and to give them all the necessary experiences, in and out of the operating room, and at the same time take good care of patients.”

Education or service?

It has been a screenwriter’s staple since the earliest days of television medical dramas. A harried hospital resident, run-

ning on empty after yet another all-nighter, slinks into a darkened storeroom during an unexpected lull. The young doctor lies down and closes her eyes. But after just a few seconds of blessed sleep, the door bursts open—emergency! Cut to our rudely awakened heroine, who shakes off her drowsiness and rushes off to slay whatever dragon may await.

Any doctor knows that the relentlessly action-packed arena of *ER* only faintly resembles the everyday practice of medicine, but the stock character of the sleep-deprived resident is drawn from real life, and has been a familiar figure in hospital hallways for a century.

The punishing life of the resident, like many other features of graduate medical education in America, was a product of innovations in medical education made by William Halsted, M.D., a Yale College graduate who founded the vastly influential surgical training program at the Johns Hopkins Hospital during the 1890s.

For Halsted, who strongly admired the German medical system of his day, “residency” was literal: he required doctors in training to live at the hospital, and he discouraged his charges from marrying to ensure that they gave their all to the profession. His residency system combined the rigor of boot camp, the asceticism of the monastery and the esprit de corps of a college fraternity.

Senior physicians often speak of this system as if it had been in place since Hippocrates, but as Kenneth M. Ludmerer, M.D., professor of medicine and history at Washington University in St. Louis, says, residency was only one of many possible routes to medical specialization in Halsted’s time, and it did not become the dominant system in graduate medical education until the 1920s. Moreover, says Ludmerer, author of *Time to Heal: American Medical Education From the Turn of the Century to the Era of Managed Care*, residency was originally considered a privilege reserved for a few students who had demonstrated promise for an academic career, and a high attrition rate was considered a virtue.

“The concept was to start with a broad range of talented individuals, and of those, to select the very best,” says Robert Udelsman, M.D., M.B.A., Lampman Professor of Surgery and Oncology, chair of the Department of Surgery and chief of surgery at YNHH. This model was known as the “pyramidal system,” because fewer residents remained in a program each year; only those at the top tier survived to become senior or chief residents.

As the intern who admitted patients overnight, it falls to Viera to present their cases at morning rounds.

At 11 a.m. Leo Cooney leads attending rounds, an hour-long discussion of cases of interest from morning rounds.

After World War II, several trends converged to “democratize” residency, vastly increasing enrollments in residency programs. An explosion in medical knowledge made specialization increasingly necessary, and there was growing pressure on faculty at teaching hospitals to provide clinical care while pursuing research. The availability of more residents to care for patients freed faculty for laboratory work, and residents took on more responsibility for teaching medical students. By the 1950s, grueling 100-hour workweeks had become the norm for residents, but the system was remarkably efficient and cost-effective. As Udelsman says, residents “worked like the devil, didn’t complain too much and saved hospitals a fortune.”

But according to medical historian Ludmerer, the educational mission of residency suffered greatly as hospitals increasingly relied on house staff for clinical care. “The dominant theme in the history of graduate medical education is the ongoing tension between education and service,” Ludmerer says. Graduate medical education still comes under fire for overemphasizing service and de-emphasizing education, a charge leveled since the 1930s, he says.

If anything, the devaluing of residents’ educational experience has only increased in the era of managed care—patients admitted to the hospital are far sicker and require more medical care than inpatients of a generation ago. Moreover, in the face of the recent nursing shortage residents have shouldered duties that have little or no relevance to the education of a physician. Because patient care must always take precedence over opportunities to teach medical students, medical school education has suffered as well. Nevertheless, Herbert says, arguments to reform residency to better meet educational goals have largely fallen on deaf ears, while the patient-safety crusade that grew out of the Zion case ultimately carried the day, leading directly to the ACGME’s restrictions on duty hours.

Unintended consequences

Like military service or athletic competition, enduring the trials of traditional residency has been a source of great pride and camaraderie for generations of physicians and has undoubtedly burnished the profession’s mystique in the public mind. But whatever its romantic aspects, the intense schedule of the medical resident had a purely practical benefit known as “continuity of care”: by treating newly admit-



By 9 a.m., the handoff is complete, and Dela Cruz and Chan are free to attend residents’ report, an informal one-hour exchange of ideas among the chief resident, attending physicians and house staff, while Bercovitch keeps an eye on patients in the ACE unit. Meanwhile, Viera huddles in front of a computer screen in a small ACE workroom with McGlynn, using the six postcall hours that remain under Accreditation Council for Graduate Medical Education (ACGME) rules to complete

paperwork and order tests and medications for her patients.

At 11 a.m., the four residents and interns are reunited for attending rounds, where Cooney compresses more than 30 years of clinical wisdom into a one-hour lecture based on cases of interest in the unit. Today’s topics: gout and pressure sores, two banes of geriatric medicine. Cooney seamlessly weaves anecdotes from his hospital experiences and his days as a volunteer physician at a home-

ted patients for long, uninterrupted stretches, budding doctors could see the natural course of disease and the effects of treatment unfold in ways no textbook could describe.

The new limitations on duty hours inevitably create breaches in continuity of care. Under the ACGME rules, residents must leave the hospital when their shift is over regardless of the clinical situation at hand, and the lack of flexibility in this regulation is the greatest source of dissatisfaction among both faculty and residents.

Robert J. Alpern, M.D., the Ensign Professor of Medicine (nephrology) and dean of the School of Medicine, says that “continuity of care was one of the best parts of the educational experience. Limiting continuity of care is especially bad for education because you learn about a patient much better if you follow them through their whole treatment.” Surgery chair Udelsman agrees. “I don’t think there’s any question that the residents are sleeping more, are home more, and I think they basically like that,” he says. “There’s also no question that they’re not getting as much exposure to patient care as they used to. There’s no getting around it.”

The same is true for medical students, whose schedules are tethered to resident teams’ shifts, says Herbert S. Chase Jr., M.D., professor of medicine (nephrology) and deputy dean for education at the medical school. “One learns by observing a patient live the natural history of an illness from beginning to end,” Chase says. “In the future, students are going to have to piece together the mosaic of a syndrome; they’re only going to see snippets of it. It will never be the same.”

But the advantages of continuity of care are not just educational. Though it might seem obvious that better-rested physicians will improve patient safety, Rastegar says that rigorous studies on this question in a medical setting are sparse and inconclusive. David J. Leffell, M.D., HS ’86, professor of dermatology and surgery and associate dean for clinical affairs, has similar concerns. “I don’t know if there’s any evidence that an 80-hour workweek is advantageous apropos risk,” says Leffell. “It seems like an arbitrary figure.”

On the other hand, there were some clear advantages to the traditional residency’s longer hours. For one thing, longer schedules meant fewer “handoffs” of patient histories and test results from one resident to another when signing out. Fisher used to warn residents to be especially vigilant about the possibility of medical errors during handoffs, which she says can come perilously close to the children’s

game of “Telephone”—information passed from one person to another changes as it moves down the line. Though the pitfalls of handoffs are more subtle than resident fatigue and have largely escaped the notice of regulators, Rastegar says that two studies published in the 1990s in *Annals of Internal Medicine* and *JAMA: The Journal of the American Medical Association* presented convincing and worrisome data to back up Fisher’s concern. “There’s a trade-off between a rested team and handoffs,” he says. “Often handoffs have more negative impact on patient care than residents who have worked longer hours.”

Herbert says that some of these problems should diminish over the next three years as YNHH becomes an increasingly “paperless” hospital. “We need exquisitely tight signoff systems from caregiver to caregiver when we have so many more individuals involved in the care of patients,” he says. “The handoff with index cards and paper sheets is still going on, but there’s a lot of effort on computerized formats for doing signout, so any caregiver can go into the computerized medical record and see the major concerns and things that need to be followed up in patient care.”

Even as systems are put in place to alleviate procedural issues, many faculty worry that the new rules will create a “shift-worker” mentality in residents that will erode the absolute commitment to patient care so esteemed in traditional residency. Reports of residents at other institutions being physically forced to leave hospitals at the moment their duty hours end are troubling to those trying to instill absolute dedication to patients’ welfare at Yale. “Those are the residents you want to be your doctor when they leave,” says Leffell, “because they’re the ones who care the most.”

Meeting the challenge

Whatever the shortcomings of the new rules, those entrusted with implementing them are convinced that they are here to stay. Instead of greeting the ACGME ruling with a grudging passivity, Yale faculty and YNHH administrators have seized the moment to examine the fine structure of the residency system at Yale. Their ultimate aim is not rote compliance with the rules, but a reinvention of medical training that meets requirements but exceeds expectations in both education and clinical care.

For example, surgical volume is sharply up in Udelsman’s department, which has added 22 surgeons to

the faculty in just the past two years. Because today's hospital patients need a great deal of care, the reduction in resident duty hours has required junior faculty to perform many tasks formerly handled by interns; some assistant professors are logging in excess of 80 hours a week since the ACGME rules were enacted, Udelsman says.

His department has hired a dozen physician assistants to relieve residents and comply with the rules, but Udelsman suggests that tapping retired surgeons in the New Haven area would be a creative way to take up even more clinical slack. "What a waste to have these people sitting at home doing crossword puzzles when they could be in the operating room two or three days a week doing what they love to do," he says. "It could be a win-win situation."

In the Department of Internal Medicine a hospitalist service has been formed to care for an increasing number of patients who cannot be cared for by the medical house staff.

When it became clear that restrictions on duty hours were inevitable, Rastegar and his colleagues in the Department of Internal Medicine began to convene regular meetings of residents, chief residents and faculty to take a fresh look at house staff policies. "There was no blueprint to follow," says Rastegar. "We had to develop it locally for our own hospital, and we knew we wouldn't get it right the first time."

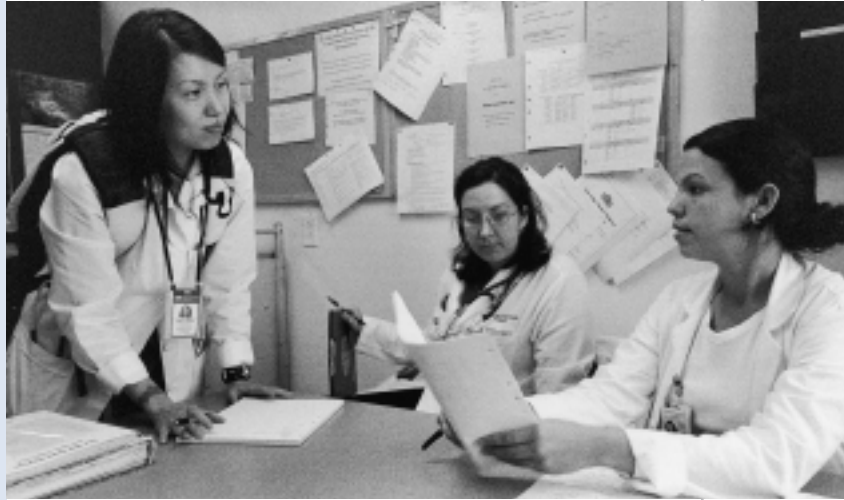
They didn't. A system in place last year was deemed unworkable and was jettisoned in favor of the current model, which is based on teams of two senior residents and two interns (first-year residents) under the watchful eye of an attending physician. Two medical students are assigned to each team.

One resident/intern pair in a team arrives for duty at about 7:30 a.m., working through the night and admitting new patients until 7:30 the next morning, when the other resident/intern pair arrives. The first pair is now deemed to be "postcall"; according to the new ACGME regulations, this pair may hand off patient care to the second team during rounds, but they may not admit new patients and they must refrain from any other clinical duties not crucial to continuity of care.

After rounds, which start at 7:30 a.m. and last until about 9 a.m., responsibility for the unit's patients is in the new pair's hands, and with the medical student's help, the first team's intern completes orders for tests and medications and any other paperwork. The postcall pair are also permitted to use any of their remaining six hours for conferences or other educational activities.

As they prepare to hand off their patients, Wendy Chen and Kathryn Hogan describe their cases to Viera.

During breaks between meetings, residents, attendings and interns repair to a staff room to complete their notes and order tests and medications for their patients.



less shelter together with précis of recent articles on molecular medicine, and delivers the whole package with warmth and humor.

After a thorough review of Viera's notes, Dela Cruz attends a lunch conference and leaves at 1 p.m. On those days when her notes are complete, Viera leaves at noon. She may opt to spend her lunch hour at Fitkin Amphitheater, where a changing cast of faculty present intern-friendly lectures on various clinical concepts.

Viera will return at 7:15 the following morning, but for now Chan and Bercovitch have taken the reins.

For Asghar Rastegar, M.D., professor of medicine (nephrology) and associate chair for academic affairs, the key to preserving professionalism and a commitment to patient care under the new rules lies in a "cultural shift": residents must be convinced, he says, that patients' interests will be best served

At 1 p.m., after a 30-hour shift, the first pair is officially off duty until the next morning's rounds. Each resident/intern pair completes two such shifts per week, and puts in two days' worth of more standard hours to approach the 80-hour maximum.

In the previous model, one resident supervised two interns, who could each admit five new patients and one patient transferred from another ward. Though interns can still admit the same number of patients, having two residents on the team should significantly improve both patient care and education, says Cyrus R. Kapadia, M.D., FW '78, professor of medicine (digestive diseases) and director of the residency training program. "Now the resident has time to read more about a couple of his or her patients, and to spend more time teaching the intern and the medical student," Kapadia says.

The ACGME has been unwavering in its enforcement of the 80-hour week, which faculty members say was probably necessary for hospitals to take the ruling seriously. And everyone agrees that they would much rather police their own programs in concert with the ACGME than submit to auditing by a government agency in the event that federal restrictions on duty hours were passed.

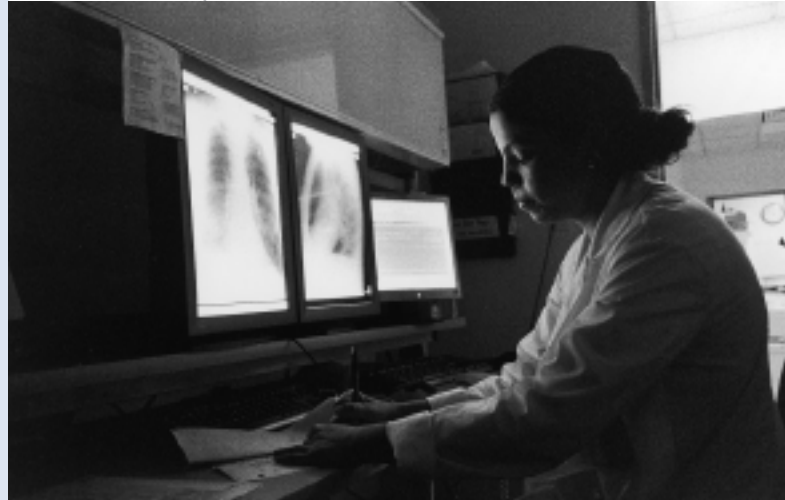
An unexpected gift

"House staff and trainees are probably more conservative than faculty," says Fisher. "They'll tell you all the time that they'd love to see change, but when it comes to making major changes, 'Well, maybe you can do it next year, when I'm gone.'"

Perhaps, but Farshad Abir, M.D., a fifth-year administrative chief resident in surgery who completed the first two years of his residency before the new rules took effect, has no doubt that the ACGME-mandated changes are all for the better. "Just like anything in life, when you start something new you're going to have kinks that need to be ironed out," Abir says. "But I think definitely we're moving in the right direction—100 percent.

"The way it used to be was awful," says Abir, who regularly logged 120-hour weeks as a junior resident. The chance to straddle both systems has given him "perfect training," he says, because having learned to budget his time under the old rules, he views the new workweek as an unexpected gift of 40 extra hours.

At the end of a day, with the entire night still ahead of her, Viera checks on a patient's X-rays.



when they scrupulously watch out for their teammates. He and his colleagues have taken pains to see that the handoff process is not only thorough, but sufficiently reassuring for dedicated residents to go off duty with a clear conscience.

"It only works if you know that the team behind you is going to do everything possible to take care of the patient and take care of you, and if they know that you will do the same thing," Rastegar says. "That you cannot write on a piece of paper."

Surgery chair Udelsman would understand. Recalling his own resident days, he says, "I saw my kids at 11 at night when I got home. My wife would wake them up so I'd actually see them once in a while!" Udelsman believes that the traditional residency, whatever its strengths, created "abusive" physicians, and Herbert agrees: "You can't treat physicians like work animals and expect that they'll come out of it with correct attitudes," he says. "I think in the end we'll have more humane surgeons."

Although Herbert's YNHH desk sits squarely at the center of the fray in implementing the new ACGME regulations, he exudes confidence when asked about the future. "It's a radical change for those of us who are members of the old guard, and we can't believe that we can play on this field, but in fact we *will* play on it," Herbert says. "Patient care will be as good, and education will be as good as well." **YM**

Peter Farley is a freelance writer based in Boston.



Are “bioethicists” really any wiser?

A physician ponders the term and wonders who is qualified to make medical decisions.

Last fall readers of this magazine were invited to present “thorny professional situations” to a panel of “bioethics experts,” who would discuss the dilemmas raised in an article in *Yale Medicine* (“Two Alternatives, Each a Little Wrong,” Spring 2004). In that article, it was noted that the bioethics committee at Yale-New Haven Hospital includes “ethicists” in addition to doctors, nurses, lawyers, social workers, clergy and members of the community. The initial inquiry, the discussion and the description of the committee prompted me to ask, what exactly is a “bioethicist” anyway?

I have served on an ethics committee at the Columbia-Presbyterian Medical Center for more than 20 years, as chair of two institutional review boards for 18 and as director of the psychiatric consultation service in a general hospital for 35. I have been involved in attempts to resolve scores of ethical dilemmas. Does this qualify me as a bioethicist? Apparently it does, if I choose to anoint myself as one. And therein lies the problem.

In many situations the designation “bioethicist” grants individuals authority that they did not have the day before they assumed that role. In my opinion, studying bioethics as an academic discipline does not provide any special wisdom in the resolution of a clinical ethical dilemma, and it is wisdom that is most needed. Before I begin to

sound like an academic Neanderthal, I want to make clear that I do believe such study is useful in identifying the basic principles that may underlie these clinical decisions. However, while the ability to identify paternalism, beneficence or autonomy as manifested in a particular decision may provide some clarity, it does not provide the analyst with any greater sagacity in making it.

As a psychiatrist, I am also particularly troubled to observe that emotional conflicts, which are often at the root of such problems, can be ignored in a quest for an overriding ethical principle. Even when emotional conflicts are acknowledged, they are often framed using a legal/business model requiring negotiation, mediation or arbitration. The American Society for Bioethics and Humanities includes among its core competencies for a clinical ethicist the skills needed to identify the conflict that underlies a need for consultation and the ability to recognize and attend to various relational barriers in communication. These skills are not easily acquired in a classroom or a brief clinical assignment.

In the examples presented in the *Yale Medicine* article, the bioethicists disagreed on an appropriate course of action or policy. This is not surprising, since such decisions are ultimately subjective and more likely to reflect personal beliefs than knowledge. For example, in the bioethics textbook *Taking Sides: Clashing Views on Controversial Issues in Drugs and Society*, opposing points of view are expressed on 21 out of 21 issues. At the symposium on clinical ethics at the 2004 Yale Medical School Reunion, Robert J. Levine, M.D., HS '63, professor of

medicine, co-founder of the hospital's ethics committee and a leader in this field, stated that a medical decision should never rest on the advice of a single bioethicist, although hearing a pair of ethicists discuss their reasoning can be illuminating.

Therefore, it is particularly worrisome when bioethicists, especially those without clinical experience, influence medical decisions.

A similar problem, the influence of personal opinion rather than knowledge, also exists in the establishment of governmental health and research policy. A recent article in *The New England Journal of Medicine* written by a former member of President Bush's Council on Bioethics describes her experience as a politically incorrect council member who was not reappointed, which illustrates this only too well.

Nevertheless, I do believe that the discussion of ethical issues in clinical matters and public policy is useful. Scholars of bioethics add an intellectual dimension to such deliberations that can help participants arrive at useful consensus judgments. However, we should question the basis for attributing superior wisdom to bioethicists, thereby increasing their authority in finding resolutions to “thorny professional situations.”

Donald S. Kornfeld, M.D. '54, HS '55, a psychiatrist, is an associate dean at the College of Physicians & Surgeons at Columbia University.

WE WELCOME SUBMISSIONS

Do you have an opinion to share on a vital topic in medicine, health or science? Send yours to Essay, *Yale Medicine*, P.O. Box 7612, New Haven, CT 06519-0612, or via e-mail to yymm@yale.edu.



Ira Mellman



Edward Chu

Two appointed to Cancer Center posts

Two Yale scientists named to new positions at the Yale Cancer Center.

IRA MELLMAN, PH.D. '78, chair and Sterling Professor of Cell Biology and professor of immunobiology, has been named scientific director. **EDWARD CHU, M.D.**, professor of medicine (medical oncology) and pharmacology, has been named chief of medical oncology.

As scientific director Mellman will have a central role in the recruitment of cancer scientists and will collaborate closely with Chu and Jose Costa, M.D., the center's deputy director. Mellman's research combines cell biology and immunology to understand fundamental mechanisms of antigen processing and presentation by cells. His leadership skills and familiarity with the Yale research community make him an ideal choice for the new position, said Richard L. Edelson, M.D. '70, director of the Yale Cancer Center, who announced the appointments.

"His seminal contributions to our understanding of how dendritic antigen-presenting cells trigger immune reactions have profound implications for the field of tumor immunotherapy, a major area of interest in the Cancer Center," Edelson said.

Chu plans to build on Yale's strengths in several areas as he recruits new faculty and builds up

translational clinical research as well as the cancer clinical program. "My challenge," said Chu, "is to be able to recruit a large number of new clinical faculty. Their main task, along with the current faculty, is to expand our clinical programs and really work with the scientists here on campus to translate the great discoveries from the laboratories into the clinic to treat cancer patients."

"Dr. Chu brings a special blend of clinical skills, major accomplishments as an innovative cancer researcher, familiarity with our school and hospital, and demonstrated leadership talents to the Center," said Edelson.



William Sledge

Psychiatry professor honored with endowed chair

WILLIAM H. SLEDGE, M.D., HS '73, FW '75, professor of psychiatry and master of Calhoun College, has been appointed the first George D. and Esther S. Gross Professor of Psychiatry.

Sledge is the medical director of the Yale-New Haven Psychiatric Hospital and assistant chief of psychiatry at Yale-New Haven Hospital. He is the editor or co-editor of the *Encyclopedia of Psychotherapy*, *Clinical Challenges in Psychiatry* and *Core Readings in Psychiatry: An Annotated Guide to the Literature* (second edition).

Among his professional interests are research into schizophrenia, aviation psychiatry, community and public-sector psychiatry, the doctor-patient relationship, the education of psychiatrists and medical students and the efficacy of mental health services.

Sledge came to the Department of Psychiatry as a resident in 1972, but upon completion of his residency he served in the Air Force, only to return to Yale as a member of the faculty in 1977. From 1987 to 1994 he was at the Connecticut Mental Health Center, as director of the outpatient division, clinical director and acting center director. Among his numerous honors is a listing since 2000 in "Best Doctors in America."

The chair was established through the support of the Elizabeth K. Dollard Charitable Trust and the Esther S. Gross Trust. The Gross Trust was established by George D. Gross, M.D. '36, and Esther S. Gross, M.D. Elizabeth K. Dollard, J.D. '39, had a lifelong interest in the interactions of psychiatry, law and medicine.



Mary Warner

Warner named director of Physician Associate Program

MARY L. WARNER, M.M.SC., PA-C, interim director since last November, has been named assistant dean and director of the Physician Associate Program. Warner came to Yale in 2000 to oversee curriculum for the program's first-year courses and was the program's assistant director for didactic curriculum from 2001 until 2003. She is a 1991 graduate of the Emory University School of Medicine's Physician Assistant Program and has served in several roles at Quinnipiac University and at Bridgeport Hospital, where she is a clinician in emergency medicine. She was appointed to the Connecticut State Board of Medical Examiners in 1999 and is a member of the Research Institute of the Association of Physician Assistant Programs.



Nina Kadan-Lottick



Margaret Pisani



Terri Fried



Diane Gallo-VanEss



Akira Kugaya



Bruce McClennan



Clarence Sasaki



Hui Zhang

Sharon K. Inouye, M.D., M.P.H. '89, professor of medicine and director of the Yale K12 Mentored Clinical Research Scholar Award Program, announced four award recipients for 2004-2005. The recipients are **Karen B. Dorsey, M.D.**, postdoctoral fellow in medicine (clinical scholars program); **Nina Kadan-Lottick, M.D.**, associate research scientist in pediatrics (hematology/oncology); **Peter T. Morgan, PH.D., M.D.**, assistant professor of psychiatry; and **Margaret A. Pisani, M.D., M.P.H.** '01, assistant professor of medicine (pulmonary and critical care). The K12 Program, funded by the National Institutes of Health National Center for Research Resources, provides a stipend and a research and tuition allowance to physician-investigators pursuing careers in patient-oriented research.

Terri R. Fried, M.D., associate professor of medicine (geriatrics), received the Outstanding Scientific Achievement for Clinical Investigation Award in May at the annual meeting of the American Geriatrics Society in Las Vegas. Fried studies the preferences for care of older persons who are acutely and terminally ill.

Diane M. Gallo-VanEss, M.D., clinical instructor of pediatrics at Yale and a senior staff member at Bridgeport Hospital, was elected to the board of trustees of the Fairfield County Medical Association (FCMA) at its 212th semi-annual meeting. Gallo-VanEss has been a member of FCMA, a professional membership organization devoted to a healthier Fairfield County, since 1986.

Ami J. Klin, PH.D., the Harris Associate Professor of Child Psychology and Psychiatry, and **Fred R. Volkmar, M.D.**, the Irving B. Harris Professor of Child Psychiatry, Psychology and Pediatrics, are principal investigators for a \$2.6 million grant that will establish a new laboratory at the Yale Child Study Center for infants at risk for autism. The grant was made by James and Marilyn Simons of The Simons Foundation, a private family foundation based in New York City. In this new project, babies at increased risk for autism will be examined monthly from birth through their first two years of life. The grant, said Volkmar, "will enable us to study infants with autism at a time when there is the greatest potential for change of behavior and brain development. We hope this will lead to more effective interventions."

The Department of Psychiatry announced this year's winners of the Seymour L. Lustman Research Award, which recognizes individuals who have achieved distinction in research and scholarship during their residencies. The first- and second-place winners, **Akira Kugaya, M.D., PH.D.**, resident in psychiatry, and **Peter T. Morgan, PH.D., M.D.**, assistant professor of psychiatry, presented their papers at departmental grand rounds in June.

Nita J. Maihle, PH.D., professor of obstetrics and gynecology, was elected in June to a one-year term as the chair-elect of the Women in Cancer Research Council of the American Association for Cancer Research. Maihle, a cancer biologist, will

lead the council in promoting and increasing the professional development and achievements of women in the field of cancer research.

Bruce L. McClennan, M.D., professor of diagnostic radiology, has been named deputy editor of *RSNA News* (Radiological Society of North America) and vice-chair of the *RSNA News* Editorial Board. McClennan has been a member of the RSNA since 1975 and is currently chair of the public relations committee for the RSNA Research and Education Foundation.

Curtis L. Patton, PH.D., professor of epidemiology and public health and head of the Division of Global Health, received the Edward A. Bouchet Leadership Award at the Graduate School's May 23 Convocation. The Bouchet Leadership Award, established in 2002, honors Edward Bouchet, the first African-American graduate of Yale College. The son of a Yale porter, Bouchet graduated sixth in his class in 1874, and in 1876, when he earned his PH.D. in physics, he became the first African-American in the United States to earn a doctorate. The Bouchet Leadership Award is a national award given to leaders in academia who have played a critical role in diversifying higher education, who are outstanding in their own fields of study and who serve as role models to students of all ages.

Sara C. Rockwell, PH.D., professor of therapeutic radiology and pharmacology, was honored in May as the second Virginia Logan Lecturer at the Department of Radiation Oncology and Kimmel Cancer Center at Jefferson Medical College/Thomas Jefferson University. The award recognizes her contributions to the field of tumor biology. She presented two lectures, "Micro-environmental Heterogeneity in Solid Tumors: Problems and Targets for Therapy" and "Adverse Microenvironments in Solid Tumors: Their Role in Tumor Resistance, Tumor Evolution and Tumor Progression."

Clarence T. Sasaki, M.D. '66, HS '73, the Charles W. Ohse Professor of Surgery and director of the Yale Head and Neck Unit, received the Broyles-Maloney Award in April from the American Broncho-Esophagological Association at its annual meeting in Phoenix. He was honored for his accomplishments in broncho-esophagology and laryngology.

Hui Zhang, PH.D., associate professor of genetics, received the Department of Defense Prostate Cancer Research Program Idea Development Award in June for a study of a mouse model of prostate cancer progression. Zhang and his colleagues created a genetic mouse model that will allow them to study pathways of tumor progression and the relationship between dietary and genetic contribution factors.

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Claire M. Bessinger, *Yale Medicine*, P.O. Box 7612, New Haven, CT 06519-0612, or via e-mail to claire.bessinger@yale.edu

The Class of '04



Finding a way to do the right thing

Physicians must go the extra mile for patients, surgeon and writer Atul Gawande tells the Class of 2004.

As a medical student on an internal medicine rotation, Atul Gawande, M.D., M.P.H., wasn't particularly worried about the elderly woman with a low-grade fever who was being watched for signs of pneumonia. She was one of the last patients he'd cover as a fourth-year student at Harvard, and his mind was on the surgery residency he'd soon begin. After rounding in the morning, he decided not to check in again with the patient after lunch, recalled Gawande, a surgeon and writer for *The New Yorker*, speaking at the School of Medicine Commencement in May.

Luckily, the woman's chief resident was more vigilant. By the time Gawande stopped in to see her, the patient was gone—gone to the ICU in the throes of a rapidly progressing fulminant pneumonia.

The lesson, Gawande told the 109 graduates gathered on Harkness Lawn, is that being a physician requires "a particular kind of strength. ... Doing the right thing is often painful, and yet you find the way to do it anyway," said Gawande, whose essay collection, *Complications*, was nominated for a 2002 National Book Award. Gawande said that physicians must go the extra mile for patients, even if doing so is a hassle, even if it's humiliating, even though one might make a bad decision and unintentionally do harm. He urged new graduates to do the right



JOHN CURTIS

thing "because you said you would; because it's what you chose to do."

The graduates listening to Gawande's address had processed into the tent led by piper Glenn H. Pryor playing "The Athol Highlanders." Former opera singer (and 2004 graduate) Nduka M. Amankulor opened the ceremonies by singing "The Star Spangled Banner" in his bass-baritone.

The Class of 2004 honored Barry J. Wu, M.D., HS '92, associate clinical professor of medicine and "the nicest doctor in New Haven," with the Francis Gilman Blake Award for outstanding teacher. They gave the Betsy Winters House Staff Award to Ashwin Balagopal, M.D., chief resident in medicine, for his "Zen-like brilliance." The class donated \$1,000 to the School of Medicine's Society of Distinguished Teachers to "underscore symbolically our commitment to superlative teach-



TERRY DAGRADI

OPPOSITE Kavita Mariwalla was the banner bearer during the procession to Commencement on Old Campus.

TOP Zachary Goldberg, Allyson Bloom, Rupali Gandhi and Elizabeth Arleo before the procession to Old Campus.

ABOVE Physician and writer Atul Gawande told the graduates that to be a physician requires "a particular kind of strength."



TERRY DAGRADI (2)



JOHN CURTIS

TOP Darlene Gabeau was joined at Commencement by her husband, Jean Lacet, and two of her children, Srina Lacet, 3, and Asha Lacet, 4 months.

MIDDLE Jessica Newman attended Commencement with her daughter, Miko, 3.

ABOVE The Class of 2004 donned toy stethoscopes as a symbol of medicine.

ing at the School of Medicine,” said class co-president Michael Shapiro.

Joseph E. Craft, M.D., HS '77, professor of medicine (rheumatology), and Auguste H. Fortin VI, M.D., M.P.H., assistant professor of medicine, won the Bohmfalk Prizes for teaching. James M. Perlotto, M.D., associate clinical professor of medicine, won the Leonard Tow Humanism in Medicine Awards. The Leah M. Lowenstein Award went to Eve R. Colson, M.D. '89, assistant professor of pediatrics, and to Rajlakshmi Krishnamurthy, M.D., assistant professor of medicine.

Outgoing Interim Dean Dennis D. Spencer, M.D., HS '77, encouraged the new graduates to adopt a multidisciplinary approach to medicine that incorporates the continuum from basic research to patient care. Although historically scientists have spoken of medicine in militaristic terms—“conquering disease”—Spencer suggested that the new generation “will adopt metaphors other than war: metaphors of growth, and exploration and evolution.”

—Cathy Shufro

“Healthy people are the foundation on which we build,” Gates speaker says

Helene D. Gayle, M.D., M.P.H., didn't start out wanting a career in medicine or public health. She simply went to college to learn how to change the world.

When she realized that a career in health was an avenue to social change, she knew she had made the right choice. Formerly director of the National Center for HIV, STD and TB Prevention at the Centers for Disease Control and Prevention in Atlanta, Gayle is now director of the HIV, TB and Reproductive Health Program for the Bill & Melinda Gates Foundation. “The challenge we all face in our role as public health professionals is finding a way to use the tools we have to reduce the inequities at home and around the world,” she told graduates during her Commencement address at the School of Public Health on May 24.

Events of the last few years have brought an extraordinary pace of change and challenges to our world and our nation, Gayle said, and have highlighted public health in unexpected ways. The terrorist attacks on September 11, 2001, the anthrax threat and the SARS outbreak have underscored our connections to the world community and taught us that we're not as independent or as isolated as we once believed. “We can no longer afford to pretend that actions taken in one part of the world have no impact in other parts of the world, or that inaction does not have its own dire consequences,” Gayle told the 123 men and women receiving either a master's or a doctoral degree in public health.

While key health indicators such as life expectancy and infant mortality have long been important measures of societal development, Gayle said that health is now considered a fundamental component of economic and societal development, human rights and social justice. “Healthy people are the foundation on which we build economies, education systems and, ultimately, a strong and stable civil society,” she said.

Noting that individuals can change society, Gayle also spoke of obstacles ahead. “We spend more on health than any other nation, but rank 37th in overall health system effectiveness,” she told the crowd, adding that the disparities in health among different segments of society are “not-so-gentle reminders that we still have unfinished business in our own social and health agenda.”

Stephen Vindigni gave the student address, in which he spoke of the diversity of the Class of 2004 and of the graduates’ shared desire to improve public health. Citing the variety of internships undertaken by his fellow students around the world, he said, “What an amazing contribution this class has made, while simultaneously gaining valuable experience and giving back to the communities in which we worked.” Vindigni encouraged his classmates to use what they learned at Yale to generate interventions in public health that would benefit both individuals and communities. “Trust your power to influence,” he urged the graduates. “All of us are capable of initiating change.”

—Jill Max



JOHN CURTIS (3)



TOP Sharmi Majahan gets a hug from Bonnie Pau (back to camera) at the Commencement for Epidemiology and Public Health.

ABOVE LEFT Linda Niccolai, an assistant professor of epidemiology, received the Award for Excellence in Teaching.



ABOVE RIGHT Commencement speaker Helene Gayle, director of the HIV, TB and Reproductive Health Program at the Bill & Melinda Gates Foundation, told graduates that “we still have unfinished business in our own social and health agenda.”

At Student Research Day, encouraging a new cadre of physician-scientists

Among the 68 students presenting posters at Student Research Day in May were three who spent the past year doing research under seemingly ideal conditions. They each received a \$20,000 stipend and a travel budget, worked under the tutelage of expert mentors and pursued research that excited them.

“I am basically learning how to do research,” said Sharon K. Gill, who studied patients with coronary artery disease a year after their hospitalizations in a project designed to improve clinical decision making. “If I want to look into a question I am passionate about, I think I have the tools to do it.”

She was one of seven students at Yale during the last academic year supported by the Doris Duke Clinical Research Fellowship Program for Medical Students. The Doris Duke Charitable Foundation (DDCF) started the national program in the fall of

2001, and Yale has been one of 10 participating universities since last year. The yearlong program starts in July with three classroom courses—“Principles of Clinical Reasoning,” “Introduction to Biostatistics” and “Practical and Ethical Issues in Clinical Investigation”—before students embark on their own research projects. According to John N. Forrest Jr., M.D. ’67, HS ’71, director of student research, there must be a clinical element to the project and involvement with a patient. “Someone in the research group touches the patient,” he said. “It can’t be a mouse model of diabetes.”

Students describe their research goals in presentations at the beginning of the program and discuss their results at the end. They also attend three dinners with faculty who describe both personal and professional aspects of life as a physician-scientist. Encouraging medical students to pursue careers as physician-scientists is the primary goal of the fellowship. Students from any medical school may apply to study at any of the 10 participating schools. During the past two years two students

at Yale have gone elsewhere for research and three students have come to Yale.

Presenting at Student Research Day this year was Paul M. Weinberger, from the Medical College of Georgia, who worked with Amanda Psyrrri, M.D., FW ’02, assistant professor of medicine (medical oncology).

“We are both interested in new molecular therapeutics for cancer and why some people with cancer die and others don’t,” Weinberger said. “You look at stage 4 patients, and there are some who 20 years later have no cancer and they are still alive. Some stage 1 patients are dead a year later. We have no idea why.”

Brian V. Nahed spent his year using a novel approach to identify the genetic basis of intracranial aneurysms. “This is a perfect opportunity to contribute to the field I wish to pursue—academic neurosurgery,” said Nahed.

Echoing the importance of training a new generation of physician-scientists was the keynote speaker at Student Research Day, Story C. Landis, Ph.D., director of the National Institute of Neurological Disorders and Stroke. “We will only be able to take advantage of the opportunities that exist if there are physicians, physician-scientists and scientists who are able to move the field forward,” she said. “We don’t know what we need to know. Who would have guessed that much of our understanding of the biochemistry of cell death came out of studies of *C. elegans*? Who would have guessed that research funding for coronavirus for 15 years ... turned out to be absolutely critical when the SARS epidemic started in China?”

—John Curtis



Rachel Willner described her research at Student Research Day in May.

TERRY DAGRADI

Integrative medicine: student group bridges a gap in medical education

Medical students have a lot to learn, and not all of it is in today's textbooks. One glaring omission in the curriculum, according to second-year student Rachel Friedman and third-year student Joey Cousin, is exposure to alternative therapies such as acupuncture, herbal remedies, massage and homeopathy. As co-organizers of the Yale Integrative Medicine Student Association (YIMSA), that's something the two are working to change.

Originally naming the group the Yale Alternative Medicine Student Association, the handful of students who founded it two years ago soon replaced "alternative" with "integrative" to reflect their intentions more accurately. "We're not exploring alternatives to our profession," said Friedman. "What we're interested in is having one medicine that is open-minded and that looks at anything that can possibly help patients."

Although integrative medicine still has quack status in the minds of some physicians, the tide is turning. With research programs in major medical schools across the country investigating treatment efficacy, often with funding from the National Center for Complementary and Alternative Medicine at the National Institutes of Health, the field is beginning to gain validity. But part of the problem, Friedman and Cousin say, is that the definition of these therapies is still nebulous. "Basically, it's anything that isn't currently taught in medical school," said Friedman, which means that acupuncture is lumped together with crystals, psychic healers and the latest vitamin fad.

Still, patients are turning to such treatments with increasing frequency. "Outside of whether these therapies work or not," said Friedman, "our first goal is to educate students on what's out there—what kinds of practitioners we're going to encounter who are treat-

ing our patients, and what we need to know about those treatments."

To that end, YIMSA organizes a monthly lecture series at which different practitioners present not just the backgrounds of their modalities, but also what a doctor needs to know about them. The idea, said Margaret A. Drickamer, M.D., associate professor of medicine (geriatrics) and the group's faculty advisor, is "not to destroy alternative medicine or to promote it, but simply to look at it. ... They're learning to look at nontraditional medicine, and to see that there are both value and problems in that."

The series was well-attended last year, Cousin said, with 20 to 30 students coming to each talk. This year Cousin and Friedman plan to publicize the talks more widely to encourage broader participation by students across health disciplines. Other events have been more interactive. Friedman, who is licensed as a massage practitioner in California, organized a six-week medical massage course to run concurrently with first-year gross anatomy, hoping that massaging each other will strengthen students' memorization of muscle groups. The semester finished with a full day dedicated to a topic universally known to medical students: stress. Students were invited to experience massage, Reiki, reflexology and other therapies during a drop-in health fair. After dinner, YIMSA hosted an expert panel, the "Science of Stress," in which doctors and integrative medicine practitioners offered a healer's perspective on the biology and psychology of stress.

Ultimately, YIMSA's goal is to change the curriculum to incorporate training in integrative therapies. Progress on this front has been slow, but Friedman is trying to build a faculty advisory committee to steer the process. "My sense is that there are many individuals among the faculty who support change, but there hasn't been any umbrella" to unite them, she said.

—Alla Katsnelson



JOHN CURTIS (2)



Clinical practice suites open in Harkness

Students have a new place to practice patient interviews and physical exams with the opening of seven clinical suites in the basement of Harkness Dormitory. The suites, which opened early this year, have exam tables and computers, and will be equipped with video cameras so students can review their training sessions, which often involve standardized patients.

TOP First-year student Karen Shoebottom interviews standardized patient Barbara Webb.

ABOVE First-year students Barbara Wexelman and Roger Goldberg interview standardized patient Don Wagner as clinical instructor Paul Kirwin observes.

Reunion 2004

With a new dean, a new venue and new programs, alumni catch up at reunion.

Photographs by John Curtis and Terry Dagradi



Dean Robert Alpern, right, pictured with Frank Coughlin, past president of the Association of Yale Alumni in Medicine.

Even as all the traditional trappings of reunion—the Friday evening clambake, the Saturday morning symposium and the dean’s welcoming reception—remained in place, change was in the air this year. At the traditional Friday afternoon welcome in the Starr Atrium of the Anlyan Center, the medical school’s new dean made his first appearance before alumni.

“This is my fourth day as dean here,” said Robert J. Alpern, M.D., who arrived from his post as dean of the University of Texas Southwestern Medical Center on June 1. Alpern lauded the alumni for their support of the school and said that he views serving as dean as “an incredible opportunity.”

For those willing to come to New Haven a day early, a reinvigorated Yale Surgical Society offered a Thursday afternoon roundtable, “The Surgeon as Writer,” by three of its veterans. And this year’s reunion included not one, but two scientific symposia, starting with a Friday afternoon panel on cardiovascular disease. The traditional Saturday morning panel discussed ethical issues facing physicians.

At the annual Saturday morning meeting of the Association of Yale Alumni in Medicine (AYAM), two appointments were made to the executive committee. Richard D. Kayne, M.D. ’76, HS ’79, was appointed to his first two-year term. Irving G. Raphael, M.D. ’71, was elected to a second two-year term. In addition, Ercem S. Atillasoy, M.D. ’91, and Frank L. Gruskay, M.D. ’54, HS ’56, were named representatives to the Association of Yale Alumni.

Arthur C. Crovatto, M.D. ’54, HS ’61, and Joseph F.J. Curi, M.D. ’64, each received the Distinguished Alumni

Service Award. Of Crovatto, a classmate wrote, "It is reported that when you cut yourself shaving, you bleed Yale blue. We thank you for your energy and your dedication to the Yale School of Medicine." To Curi, said Donald E. Moore, M.D. '81, M.P.H. '81, president of the AYAM, "You have been a tireless worker and loyal alumnus."

Over lunch, talk about obesity

On Friday, at the New Haven Lawn Club, the topic at the School of Public Health's Alumni Day was obesity. During a panel discussion, a keynote speech by Kelly D. Brownell, Ph.D., professor and chair of psychology and director of the Yale Center for Eating and Weight Disorders, and a luncheon talk by J. Michael McGinnis, M.D., Yale faculty and alumni discussed the implications of the national epidemic of obesity and its related health problems.

Elaine P. Anderson, M.P.H. '76, director of alumni and community

affairs, joked that organizing a conference on obesity presented a new problem. "This year," she said, "the challenge was lunch. We had some food fights and we had some disagreements. The entrees will meet the requirements of Atkins, the South Beach diet and Carboholics Anonymous."

"I was planning to stay for lunch until I heard what it was going to be," Brownell quipped. "If it meets all those criteria it's going to be awful."

In a more serious vein, Brownell said that the nation's obesity crisis has many roots. "Interwoven are complex social issues, political beliefs, large-scale economic forces and, of course, science," he said. "What we are finding with the approach our government is taking, as well as the food industry's, is that science is becoming almost irrelevant. That approach is driven by money and it leads to a focus on personal responsibility instead of the global environmental



ABOVE Dean Robert Alpern visited with members of the Class of 1949 at the opening reception in the Anlyan Center.

BELOW LEFT Arthur Crovatto (top photo with his wife, Janet) and Joseph Curi (bottom photo), each received the Distinguished Alumni Service Award at this year's reunion.

BELOW RIGHT Donald Moore, president of the AYAM, welcomed alumni to the reunion at the reception at the Anlyan Center.





TOP In his keynote speech at the reunion of public health alumni, Kelly Brownell, director of the Yale Center for Eating and Weight Disorders, described the rise in obesity rates and its causes in the United States.

MIDDLE Loretta DiPietro and Marlene Schwartz were on the panel that discussed obesity and its implications.

ABOVE Alumni spent time catching up between talks at the New Haven Lawn Club.

causes that are creating this problem in the first place.”

Following Brownell’s keynote talk, a panel discussed various aspects of the obesity crisis. Participants included Loretta DiPietro, M.P.H. ’85, PH.D. ’88, associate professor of epidemiology (environmental health); Susan T. Mayne, PH.D., associate professor of epidemiology and public health; Marlene B. Schwartz, PH.D. ’96, co-director of the Yale Center for Eating and Weight Disorders; and Derek Yach, M.P.H., representative of the director-general of the World Health Organization.

Luncheon speaker McGinnis of the Robert Wood Johnson Foundation (RWJF) said that the current focus on counting carbs may help mitigate obesity, but it diverts attention from the key issues. “There’s no point arguing whether it’s fat or carbs that matter,” he said. “It’s both.”

McGinnis laid part of the blame for America’s sugar- and starch-laden diet at his own doorstep. In addition to being the principal architect of the Healthy People process that elevated nutrition on the national agenda, he was a key contributor to the Dietary Guidelines for Americans. The Guidelines lay out central nutritional concepts that still pertain, but when the United States Department of Agriculture (USDA) developed the accompanying food pyramid many people looking at recommendations for six to 11 daily servings of bread, cereal, rice and pasta failed to distinguish between simple and complex carbohydrates.

“We in public health were so happy to have buy-in from the USDA, with its sizable food-industry constituency, that the potential for misunderstand-

ing when it came to carbohydrates didn’t receive the emphasis it deserved. We meant clearly to focus on high-fiber carbs, and the fact is I didn’t pay enough attention to how the graphic might be misrepresented or to the appropriateness of the number of servings,” McGinnis said. But he added: “The good news is we have the opportunity now to get it right.”

Getting it right is important, given that Americans consume 150 pounds of sugar a year (compared to 7.5 pounds 200 years ago), McGinnis said, adding that diet and activity patterns are now responsible for more than 500,000 premature deaths each year in the United States, ranking at the top of the list of preventable causes of death. Because of the stakes involved, the RWJF has made childhood obesity its top priority. “The vision,” he said, “is not for everyone to be slim. Instead, we want society’s signals to promote a healthy diet and healthy living.”

At lunch the Distinguished Alumni Service Award was presented to James M. Malloy, M.P.H. ’67, president of Malloy Associates, a health care management consulting firm in Mississippi. James Rawlings, M.P.H. ’80, and Patti Harvey Rose, M.P.H. ’85, ED.D., were inducted into the Alumni Public Service Honor Roll.

Finding the genes that cause disease

From the two photographs, it seemed obvious who would live longer. One showed a jogger, looking fit at 5’10” and 150 pounds. The other showed a seated man with a double chin, 5’8” and 270 pounds—a cigar smoker.

Ironically, the jogger fared far worse than did his counterpart, reported

FROM LEFT James Malloy received the Distinguished Alumni Service Award at the public health reunion. Patti Harvey Rose and James Rawlings were inducted into the Alumni Public Service Honor Roll. Michael McGinnis, a key contributor to the Dietary Guidelines for Americans, gave the day's luncheon speech.

Richard P. Lifton, M.D., PH.D., chair and Sterling Professor of Genetics, speaking at the symposium titled “Cardiovascular Disease: From Bedside to Bench and Back Again.” The first man, running guru James F. Fixx, died of a heart attack at 52. The other, Winston Churchill, lived to be 90. The probable cause for the difference—genes—is increasingly the subject of research at Yale into the leading cause of death in the United States, said Lifton.

Lifton's research has led him to “scour the globe” for families with extreme phenotypes, such as severe hypertension, which develops as early as adolescence. Lifton and his team identify the genetic mutations affecting the families and show, on the molecular level, how the mutations cause disease. Understanding these mechanisms could suggest ways to manipulate gene products and pathways to fight diseases in the general population.

Other speakers included Jeffrey R. Bender, M.D., HS '83, the Robert I. Levy Professor of Preventive Cardiology, who discussed the effects of hormone replacement therapy on vascular inflammation; William C. Sessa, PH.D., professor of pharmacology, who described his research on improving peripheral circulation; and Stuart D. Katz, M.D., associate professor of medicine, who discussed his hypothesis that lower serum iron levels reduce the risk of endothelial disease.

The ethics of modern medicine

At the Saturday morning symposium four panelists described ethical issues facing physicians and society. Thomas P. Duffy, M.D., explored “how it is that we live our daily lives as physicians.”

Rupali Gandhi, J.D. '00, M.D. '04, discussed rules that protect children in clinical trials. Patricia T. Powell, M.D. '87, described the Japanese practice of physicians informing families, rather than individuals, of bad news. Philip R. Reilly, M.D. '81, J.D., discussed the impact of the genomic revolution.

For Duffy, the image of the physician has taken a beating. *The New York Times*, he said, was having a field day with articles about alcoholic practitioners, Botox queens of Park Avenue and “boutique” doctors catering to the elite. On top of depictions of physicians as something less than selfless healers, the demands of practice compete with those of family, and physicians find themselves involuntary partners with insurance companies that want a say in medical decisions. “Our profession is a house divided, almost a house conquered. It is time to come together to reflect on our moral dilemmas,” Duffy said.

Gandhi reviewed the issues concerning children as research subjects. In 1789, she noted, Edward Jenner made the questionable decision to test the worth of cowpox as a smallpox vaccination by inoculating his son. “Children,” Gandhi said, “lack the maturity and the information base to make a truly informed decision. The regulations [governing clinical trials] provide children with additional protections because they are a vulnerable group. Nevertheless, although regulations limit the participation of children in research trials, problems—such as ambiguous and inconsistent terminology—persist.”

During the four years she lived in Japan, Powell was at first appalled by



FROM TOP Tia Powell, Philip Reilly and Rupali Gandhi were among panelists at the medical school reunion who discussed ethical issues facing physicians. Powell described doctor-patient relations in Japan; Reilly pondered the question of genetic disorders and the physician's obligation to inform family members who might be at risk; and Gandhi described the regulations that protect children who are research subjects.



At a panel sponsored by the Yale Surgical Society, authors and surgeons (top to bottom) Sherwin Nuland, Bernie Siegel and Richard Selzer described how they moved from operating to writing.

physicians' reluctance to share bad news with a patient. "I could not imagine any principled reason for not revealing to patients their diagnoses," she said. Yet in Japan physicians are more likely to relay the information to a family member and, with the patient's family, invent a fiction about the illness and find a way to continue treatment. However, a shift is under way and disclosure has become acceptable if the patient is psychologically stable and capable of making a decision regarding treatment; there are good relations between the doctor, patient and family; and the patient has a strong support network.

Family relations are also of concern to Reilly, CEO and chair of the board of Interleukin Genetics. If a patient has a genetic disorder, does the physician have an obligation to inform family members who might also be vulnerable? And how can a physician inform others without violating patient confidentiality? Pharmacogenetics, he added, "will change everything about patient care."

Reilly also worries about genetic testing of fetuses. A survey of pregnant American women conducted in the mid-1990s found that many considered gene variants that predispose to obesity as serious as genetic mutations that cause cystic fibrosis. "I worry about a culture that is more interested in perfection," Reilly said.

The surgeon as writer

Richard A. Selzer, M.D., HS '61, gave up surgery, but he cannot give up writing. "Once you have become an artist and that third eye of the artist is open, it can never be closed," he said.

At the ninth annual spring reunion of the Yale Surgical Society, Selzer and fellow writers and surgeons Sherwin B. Nuland, M.D. '55, HS '61, and Bernie S. Siegel, M.D., HS '61, discussed the paths that led them away from surgery, even while drawing heavily on their experiences as physicians.

For Siegel, the act of writing was self-preservation as he struggled emotionally with death and dying. "The training we don't have is: How do you deal with loss?" he explained. He coped by keeping a journal. Impressions grew in complexity and Siegel found himself writing books. He divided his calendar between medicine and writing until he noticed that he had colored all his days in surgery black—he had come to prefer writing.

Nuland's entry into literature was less deliberate. A literary agent asked him to write a book called *How We Die*. Nuland declined until it dawned on him that the book would be an opportunity "to write about my entire career, indeed my entire life."

How We Die was not what the agent envisioned. It was also a surprise to the author, who uncovered, "an entire philosophy about death and dying that I didn't know I had."

Like Selzer, who teaches creative writing to Yale medical and nursing students, Nuland believes medicine provides rich material for literature. "Please do write," Nuland told his colleagues in the audience, before adding, to laughter, "but whatever you write, don't send it to me."

1944**60th reunion**

Our 60th reunion was like a family holiday gathering. All of us are in our 80s, and 18 of our original 42 classmates are alive. Eight were at this reunion, plus several wives, and 14 have sent letters and news to our class reunion news journal. This journal is one reason why we have stayed a family for so many years. Our class was half the size of current classes and every five years we have circulated a journal with news of everyone, largely from letters to each other. In earlier years it would be 25 pages; five years ago it was 11 pages. Several of us are still in practice. **Bob Frelick** is active on the cancer committees of four hospitals, as well as in administration, and has received several awards. He and Jane keep busy with a widely distributed family of children and grandchildren.

Larry Crowley has been dean of the Stanford School of Medicine. **Edith Jurka** is listed in *Who's Who in America* and *Who's Who in Medicine and Healthcare*. **Nick Spinelli** has been active with the Association of Yale Alumni in Medicine.

For years, 100 percent of us donated to the School of Medicine. This year it was 72 percent and totaled \$74,272. **Carol Goldenthal**, **Larry Crowley** and **Nick Spinelli** worked on the fund-raising, and we are supplying scholarships for three current medical students.

At this year's reunion we enjoyed touring the new Anlyan building. It is amazing that it has laboratory facilities for 700 researchers, huge places for class anatomy dissections and 457,000 square feet of space. We sat together at a table for 12 at the Saturday evening dinner for 50+ reunion classes, and it provided the happy time that a family dinner does.

Edith Jurka

1949**55th reunion**

Our 55th reunion was great fun as well as educational. Yale Medical School continues to offer its students and faculty exciting new opportunities in education, research and service. The guided tour of research and teaching labs in the new Anlyan Center for Medical Research and Education showed us not only the huge investment in bricks and mortar Yale is making, but also some of the innovative approaches to student teaching introduced in this new facility. In this regard, we were pleased to see that the truly innovative Yale System of Medical Education is thriving. At the annual meeting of the Association of Yale Alumni in Medicine we heard presentations by two students (**Sharon Gill** and **Jessica Yager**) who had taken time off to carry out research/service projects, one in Africa, and were astounded that roughly half the class now takes such an additional year off in order to pursue a particular interest. In our time, only about 10 percent did.

One of our classmates, **Frank Dana Law**, died earlier this year, so our number now stands at 31. Eight attended the reunion, most with their wives: **Bill Anlyan**, **Bud Baldwin** (still hard at work for the AMA), **Bill Bevis** and **Dorothy**, **Dan Elliott** and **Betty**, **Paul Goldstein** and **Betty**, **Jack Miller** and **Anne**, **Julian Pichel** and **Cecile**, and **Larry Shulman** and **Reni**. Few of our classmates are still working full time, but **Hal Holman** does, at Stanford. A few still work part time, but most are actively retired. **Gordon Jensen** has just finished writing another book, his first novel. **Carl Russell** is busy with his oil painting and watercolors. He attends painting workshops in places like Chattanooga, Sedona and Taos, where he fancies a golf course nearby. It is at 9,000 feet and facilitates long drives! **Nora Gordon Baird** continues her translations of ancient Greek classics. **Nora** skipped the

reunion in order to attend the high school graduation of one of her five grandchildren.

The luncheon and wonderful clambake at Harkness provided opportunities to chat with old friends from other classes as well as our own. Breakfast in the Beaumont room held a special significance for **Jack** and **Anne Miller**, who held their wedding reception there 50 years ago. Dinner at the Graduate Club had to await the running of the Belmont. The disappointment of the enthusiastic supporters of **Smarty Jones** when he lost in the last few seconds was quickly erased by the animated conversations that accompanied a wonderful meal.

Jack Miller

1954**50th reunion**

The Class of 1954 celebrated the 50th anniversary of our graduation. An outstanding reunion celebration was planned and supervised by our local arrangements committee: **Frank Gruskay** (chair), **Tony Piccirillo** and **Lowell Olson**. A reunion record was set, as 33 classmates were present. Adding to the success was the 50th Reunion Album, edited by **Bob Hatch** and **Harry Miller**; **Kitty Halloran**, **Dick Pullen** and **Don Davis** contributed. **Eva Henriksen's** diary of her four years at YSM formed the framework for the chronology of the event.

The exhibition cases in the Ogilvie Lobby are filled with books written by **Freeman**, **Hustead**, **Kornfeld**, **Lamb**, **Miller** and **Nora**, members of the Class of '54, donated as a permanent collection. Also shown was a montage of memorabilia from the dedication ceremony naming the laboratory at the University of California, San Diego, the **Nicholas A. Halasz**, M.D., Student Laboratory.

On Thursday, early arrivals attended a "Pizza and Beer"



party, where the rebonding began. Friday we attended general reunion events, followed by the clambake. **Sam Hunter** played the grand piano in Harkness Hall for us and all the alumni—over the sound system. **Sam** was terrific. On Saturday we took advantage of the CME program, the AYAM annual meeting and the traditional sherry luncheon at Harkness Hall.

On Saturday evening we were honored at the “Friends of the 50th” dinner at the Graduate Club. After dinner we observed a moment of silence for those no longer with us. Special mention was made of those who died since our last reunion—**Nick Halasz, Paul Neufeld and Lowell Olson.**

Bob Hatch and Harry Miller were thanked for the superb reunion album. They rated a standing ovation.

Of 61 graduates, 33 attended the reunion. This (73 percent of surviving classmates) sets a record for attendance at a 50th reunion. Most members of the class and their spouses have retired from practice and are traveling for pleasure, visiting children/grandchildren and occupying themselves with volunteer work and hobbies. These include **George** and **Mary Bostwick, Richard** and **Cleone Bouchard, John** and **Cynthia Cole, Don** and **Jeanne Davis, Jack** and **Elaine Gariepy, Kitty Halloran, Bob** and **Mary Hatch, Walker** and **Sylvia Heap, Sam** and **Lynn Hunter, Eva Henriksen, Bob** and **Joy Hustead, Lowell** and **Shirley Kristensen, Richard** and **Doris Lamb, Harry** and **Kari Miller, Jim** and **Audrey Nora, Dick** and **Barbara Pullen, Jacques Quen,** and **Jack** and **Jo Ann Vosskuhler.**

George and **Myra Bowers** enjoyed the reunion so much they promised to return. **Alan Covey**, who came with wife **Sylvia**, remains in part-time practice with their son on Long Island. **Art** and **Janet Crovatto** have happily returned to York, Pa., and continue to summer on Martha’s Vineyard. **Mike** and

Jeanne DeNicola attended the Saturday luncheon but missed the banquet. **Fred Fiederlein** attended with his son. **Fred** has retired from his neurology practice, where he specialized in the diagnosis and treatment of headaches. **Dick Foster** returned to our fold—he graduated in 1955 but is affiliated with our class. He retired from an ob/gyn practice in upstate New York.

Walter Freeman and **Do** were energetically involved in a discussion of medical politics.

Orlando and **Denise Gabriele** returned for a pleasant weekend. The department of radiology at the University of West Virginia has been named for him. He is said to be fabulous. **Denise** was a former resident.

Frank and **Bette Gruskay** commute between New Haven and Watch Hill, R.I. Kudos to them for arranging our reunion. **Don Kornfeld** continues to report to the College of Physicians and Surgeons at Columbia, where he was once acting dean and rumored to be outstanding. **Herb Lubs** and **Dr. Betty Lou Lubs** have tied the knot—congratulations and good luck. **Tony** and **Jeanne Piccirillo** are living at the Masonic Home in Wallingford. They attended the luncheon but did not return for dinner. **Len** and **Gail Silverman** have found Ponce de Leon’s fountain. **Len** looks younger than he did in 1954. **Barbara Olson** and daughters **Kristi** and **Kari** represented **Lowell**, who had worked hard as a member of the reunion arrangements committee, and died just before the reunion. **Erika Hurwitz** attended in her husband’s place. She is doing well.

Two classmates cancelled because of emergency medical problems. **Bob Keith** had an operation and **Bob Joy** spent the weekend in the intensive care unit of his hospital. Both are recovering well. **Marty Vita** had

family obligations that precluded attendance. **Lee Hilburg** cancelled. **Ralph Campbell’s** granddaughter was being married during the weekend. **Eli Schimmel** sent his regards to all—but he could not attend. **Mano Shirodkar** intended to come, but was advised by his physician not to travel. He sent a letter, a tape and a review of his work in virology for our class records.

We’ll meet again in 2009—maybe sooner if there is demand.

Finally, we must thank **Harry Miller** for his leadership in establishing the medical school’s newest endowed class scholarship fund. The effort began five years ago and the participation of 75 percent of the class has made it a success.

Arthur C. Crovatto

1959

45th reunion

Two score and five years after graduation the Class of ’59 gathered to celebrate the advances in medicine, such as artificial joints, improved diets and the cardiovascular benefits of shuffleboard, that made our attendance possible. Friday night at **Dave** and **Joan Reed’s** mega-home there was a silver sea of gray heads with a few shining domes bobbing up in their midst, all gathered around the lobster pot. A debate raged among our chronologically gifted group on the pros and cons of retirement. The advocates, led by **Herb Kaufmann**, held that even if you win the rat race, you are still a rat, while the cons discussed “phased retirement” and elder mentoring. **Ace Barnes** pointed out that being antiquated is an asset in some third-world countries. **Mimi Wolf** and **Bob Amick’s** wife **Carol** continued discussing artificial joints, both anticipating hip replacement soon (**Mimi** by **Kris Keggi** the following week).

Saturday night **Nick Passarelli** arranged for us to enjoy the imaginative productions of world-class chefs as well as the air conditioning at the New



Haven Lawn Club. (Remember the heat wave of '94?) It was really cool—and tasty. **Bob Fisher** announced that contributions of the Class of '59 were outstanding during this past reunion year. Our class contributed \$93,623 in gifts and pledges to the School, and our class scholarship fund now has a market value of \$364,594. **Bob** is now a High Poobah at the Alumni Giving office.

Nick reported that we had broken the record at 72 percent attendance and he brought us up to date, not unkindly, on some of the nonattendees. Then the band struck up a tango and we danced away a beautiful evening.

All of us were pleased that two special ladies, Ellie Skinner (**Dave**) and Bunny Prokop (**Jim**) attended. **Bill Heydorn** did not attend because of the recent death of Joan. First-time attendees included **Mark Bitensky**, **Linc Potter** and **Kent Morest**.

Others present were **Bob Amick**, **Frank Beer**, **Jack Bowers**, **Ed Clayton**, **Sid Cohen**, **Bud Dawson**, **Ron De Conti**, **Gerry Fenichel**, **Bob Gonyea**, **Gerry Gordon**, **Rod Hartmann**, **Len Inker**, **John Jasaitis**, **Ed Kaminkas**, **Kris Keggi**, **Mike Lee**, **Ray Mark**, **John Marsh**, **Brian McGrath**, **Pete Molloy**, **Ron Morris**, **Jack Poglinco**, **Joe Saccio**, **Mark Schwartz**, **Dick Senfield**, **Sandy Solomon** and **Jim Stagnone**.

See you in '09!

Asa Barnes

1964

40th reunion

Our 40th gala at New Haven's Polo Grille had spirit and reasonable number as 15 classmates and nine spouses returned to Yale.

Bob and **Becky Mitchell** traveled from northern California, where he still practices cardiovascular surgery. **Lew** (dean at Northwestern) and **Jill Landsberg** flew in from Chicago en route to Nice, France. **Skip** and **Joyce Stilp** from Wisconsin appeared to be

more than enjoying retirement. Other Wisconsinites included **Bill** and **Mary Alice** (M.D. '66) **Houghton**. Their daughter, **Shelagh**, was Class of '98. **Stan** and **Maxine Rosenberg** came down from Boston and provided free antacids. **Steve** and **Gillian Waltman** from St. Louis punctuated the evening with subtle one-liners and critical ecopolitical wisdom. **Tom** and **Claire Cardella** added a nice Washington, D.C., touch. **Remo** and **Christiane Fabbri**, psychiatrist extraordinaire and lay minister, were the only locals.

Class treasurer **Bob** and **Wendy Lyons** had flowchart and charge card machine in hand. **Mary Digangi** and **Diane Shrier**, while not discussing mental health issues, debated the virtues of comfortable fashions and long-stemmed footwear.

Tony Bravo looked the picture of health and wealth and will someday be the fourth great tenor. **Bob Briggs** had brief lapses of memory and reaffirmed that fantasies have no boundaries.

Tom Lentz, presently associate dean of admissions, concluded that we were most fortunate to have applied to Yale Medical School in 1960 and not later.

Joseph F.J. Curi

1969

35th reunion

The oysters, corn fritters, huge shrimp and liquid refreshment compensated a bit for the chill of Friday night as we greeted **Arnie** and **Nancy Mazur** and **Jody Robinson**. We then moved into the warmth of the old Harkness dining room and joined the 1969 table filled with **Ellen** and **Len Milstone**, the **Lionel Nelsons**, **Sandy Genser**, **Steve** and **Lyn Krant**, **John** and **Patty Kelly**, **Rob** and **Joanne Marier**, **Larry** and **Sally Yeatman**, and **Jonelle Carey Rowe**.

The Saturday morning ethics seminar was well-received. We were joined at lunch by **Joel** and **Janet Kaufman**, **Lee Jampol**, and **David Schulak** and his fiancée. We moved on to the historic Beaumont Room for a special

memorial discussion of **David Barry**, whose achievements we celebrated in 1999. We watched some very touching and illuminating portions of **David's** memorial service from Chapel Hill, kindly provided by **Gracia Barry**.

We then discussed how we might memorialize **David**, as well as **John Meehan** and **Eric Otobo**, who also left us far too early. A small group agreed to work on an appropriate memorial process for departed class members.

The evening at the Quinpiack Club brought **Chuck** and **Sandra Angell**, **Tom Ciesielski**, the **Robert Gordons**, **Stephen Webb** and **Ralph Falkenstein**. The class photograph had to be delayed as we watched **Smarty Jones** lose his attempt at the Triple Crown. **Rob Marier** and the development office provided memories of lost youth with 1965 entrance photographs and a 1969 class photo in front of the Brady building.

We did our traditional "lampooping" of all absent classmates, which should inspire them to attend future reunions to defend their reputations.

Our gathering appears to expand reunion by reunion. Nearing or passing 60 certainly does bring on a good deal of reflection. Several classmates who hadn't returned to New Haven since 1969 found it particularly enjoyable to be back. We all found that the opportunity to remember and reflect with classmates gave us a renewed vision to carry back to our professional and personal lives. We look forward to 2009.

Leo M. Cooney Jr.

1974

30th reunion

Our reunion weekend flew by too quickly. We participated in provocative symposia and tours of the campus, but the highlights were two great dinners



with lots of shared memories and time to catch up. We saw people we had not seen in 30 years. Both nights we stayed until closing and we all felt we could have stayed longer.

Early birds were treated to a symposium on obesity presented by the Department of Epidemiology and Public Health. Kelly Brownell, professor and chair of the Department of Psychology and director of the Yale Center for Eating and Weight Disorders, told us that obesity results as much from societal pressures and national policies as from personal failures.

Friday night my wife, Cheryl, son David (age 20) and daughter Julia (age 11) joined me at the New England clambake, where we found **Dahlia Kirkpatrick**, **Tony Demorizi** and son Eliseo (junior in college), **Ralph Binder** and wife Barbara, and **Rob Kolodner**. **Ralph** is practicing pulmonary medicine in New Rochelle, N.Y. He has continued his world travels, including backpacking trips to the Amazon and Alaska. **Rob** is the acting chief information officer for the Veterans Health Administration. At our last reunion **Rob** had told me that he was working on a project that was going to “change the way we all practice medicine.” He elaborated this year by showing us the VA’s electronic charting system that will revolutionize the way medicine is practiced. Both **Tony** and **Dahlia** have had hard luck with medical problems. **Tony** uses a wheelchair because of a spinal cord problem of unknown origin that is still being investigated. **Tony** commented that he was “so impressed and happy to find that the warmth of old friends is still there after so many years.” **Dahlia** has been a bone marrow transplant specialist at Sloan Kettering and Tulane Medical School. She has had problems with multiple hip replacements and has changed her practice to physical medicine for the time being. **Dahlia** spent most of her professional life in academic medicine and she misses con-

tact with students. She encourages young graduates to go into academic medicine because mentoring students is so rewarding.

Those of us who toured the new Anlyan Center were awed by the combination of beautiful architecture, huge size and modern lab facilities. The student anatomy rooms are quite different from the dissecting rooms of our time. Each station has touch-sensitive screens showing the anatomy in rich colorful detail.

At Zinc Restaurant I talked with **Irv** and Marina **Asher**. **Irv** is practicing neurology with a specialty in movement disorder, in Columbia, Mo. We shared our memories of working in the labs at Connecticut Mental Health Center. **Len** and Liz **Banco** came down from Hartford, where **Len** is professor of pediatrics at the University of Connecticut School of Medicine and vice president of strategy and regional development at Connecticut Children’s Medical Center. **Len** noted, “When not doing medicine my hobbies include collecting rare books (early American history), traveling and enjoying wine and food. The reunion at Zinc was a lot of fun; the dinner was excellent, as was the conversation. I only wish that more classmates would attend the next reunion.” In addition to practicing pulmonary medicine in Basking Ridge, N.J., **Harvey Gerhard** has written scientific articles and three novels, including the bestselling medical thriller *The Donors*. **Harvey** is married and has two children in high school.

Our conversation at Zinc was filled with warmth, laughter and surprisingly close feelings. While we had not seen each other for 30 years, we had a history of four intense years together and, as **Ralph** noted, a very strong bond because of our shared experiences in medicine. While

we live in different places and practice different specialties, we had many things in common. We reminisced and shared our life’s experiences, good and bad. We talked about career choices, politics (right, left and middle were represented), managed care, family, malpractice. Most of us have been victimized by frivolous lawsuits. We agreed that the best solution to the malpractice crisis is a no-fault system for patients combined with an educationally focused program for doctors. When someone asked, “Would you want your child to be a doctor?” our group was evenly split.

Several classmates who were not able to attend wrote me:

Carol Teitz is professor of orthopaedics at the University of Washington in Seattle. She could not attend the reunion because she was going to Asia with three traveling fellows from the American Orthopaedic Society for Sports Medicine. **Carol** wrote, “I remarried in 2000 to Craig Keebler, who is a bariatric medicine physician (not surgical). My twins are almost 21. One is at Stanford and one is at U. Miami. Craig has a 25-year-old married daughter (and we have one grandchild), another daughter who is 22 and here at UW and a son, 19, who is spending a year studying in Israel before starting university. It’s pretty noisy when everyone is home!”

Jerry Orlin sends regards from the Hasharon Hospital Blood Bank in Petah Tiqwa, Israel. **Dave Collier** has recently returned from an adventure serving as chief of nuclear medicine at the Kuwait University Medical School where, prior to the Iraq War, he lectured on nuclear terrorism. **Dave Ritvo** is practicing psychoanalysis in the Bay Area. **Ross Tonkens** almost made it to the reunion but had to travel to Helsinki for business. He is the director of medical and scientific services and global scientific head of the cardiovascular therapeutics division at Quintiles. **Paul David** lives outside Boston with his wife and three children



(ages 21, 17, 13). **Paul** worked for 15 years at Beth Israel Hospital on the psychiatry consultation service and in the ER and ran the medical student clerkship. He is now in full-time private practice. **Ron Neumann** sends his best wishes to everyone from Maryland. He is head of the nuclear medicine department at the NIH, where he does research on DNA damage and repair following radionuclide treatment of cancers. He notes that he still lunches with his wife after 25 years. She is the head of the surgical pathology group in the pathology branch of the National Cancer Institute. **Amy Starr** sends her best wishes from Los Angeles, where she is a pediatrician. Her daughter is a sophomore at Yale, in the same college as my son.

The reunion was a great time. Mark your calendars now and plan to come to the 35th!

Doug Beriv

1979

25th reunion

A very small group of the Class of '79 gathered for the clambake on the Harkness lawn on Friday night, including **Lloyd Friedman**, vice president of medical affairs (pulmonary diseases), Milford Hospital (Conn.), with his wife, Kai Yang, and kids (one of whom was braving an abscessed tooth!); **Jeff Dornbusch**, PICU Presbyterian Hospital, Albuquerque; **Mike Young**, assistant professor (allergy and immunology), Harvard Medical School; **Cindy Sherman**, gastroenterologist, Minneapolis; and me. **Ed Shultz**, associate professor (biomedical informatics), Vanderbilt University Medical Center, Nashville, and his wife, Patty, joined us briefly, though they had to leave before the Saturday festivities, because Ed's band had a gig in Washington, D.C. They are apparently much sought after at medical gather-

ings to get the dancing going—maybe next reunion?

Our dinner on Saturday was in the library of the Graduate Club, where the group from the night before was expanded to include a respectable dozen or so of our classmates, including **Kerry Cooper**, nephrology, Scottsdale, Ariz.; **Bonnie Cunningham**, associate professor/attending physician (hematology), Albert Einstein College of Medicine, Jacobi Medical Center, New York; **Dave Golan**, biological chemistry, Harvard Medical School; **Jonathan Holt**, consultation, liaison, (psychiatry), University at Buffalo-Department of Psychiatry, SUNY-Buffalo, N.Y., and his wife, Karen; **Liz Moore**, radiology, University of California-Davis Medical Center, Sacramento; **Eddie Reed**, director of the cancer center at West Virginia University (oncology-internal medicine) and his wife, Meenakshi; my husband, Alan Plattus, and me, as well as **Jeff, Mike, Cindy and Lloyd** from the night before. **Shirley McCarthy**, professor of radiology at Yale, sent her regrets, having been called away on a family emergency. **Lynn Rudich**, pediatrics, Woodbridge, Conn., and her husband, Alan Kleinman, made a surprise appearance during dessert and coffee.

We lingered over cocktails and then had a class picture taken before moving on to dinner. We all clustered around a board with our first-year "mug shots"—and agreed that none of us had changed a bit! Conversation was lively, catching up on our lives, children and the past, recent or upcoming college searches for the next generation. It was a very relaxed and enjoyable evening, and we hope to garner a bigger crowd next time.

Nancy Berliner

1984

20th reunion

Our class dinner was held at **Peter Glazer's** (therapeutic radiology at Yale) and my (molecular biophysics and biochemistry, Yale) house in

Guilford. The weather was cold and rainy for June, so we brought the tables inside and lit a fire in the fireplace. We were joined by **David** (ENT, New Haven) and Karen **Astrachan**; **Lenny** (founder of biotech company, Alexion, in Cheshire, Conn.) and Linda **Bell** and two of their children; **Jan Blustein** (health policy, NYU) and Leslie Greengard; **Joe Chambers** (cardiology) and **Barbara Coda** (anesthesia), who are living in Oregon; **Rich** (AstraZeneca in Delaware) and Sara **Leff**; and **Paul Rothman** and Frances Meyer and their three children. **Paul** is at Columbia University but is moving to the University of Iowa this summer to be chair of medicine. **John Krystal** (psychiatry, Yale) and Bonnie Becker and their twins attended, and **Mark Stein** (urology in New York) and **Andy Sternlicht** (antibiotic biotech in Boston) were there. **Ken Rosenblum** has a new undertaking: machines that dispense prescriptions in doctors' offices (INSTYMEDS). Look for them.

On Friday night at the clambake we were joined by **Dave Shrier**, who is in diagnostic imaging at Rochester, and **Josh Schor**, who is the medical director of a Jewish nursing home in New Jersey. **Michael Caplan**, who is in the physiology department at Yale, and **Marnin Merrick**, who is a radiation oncologist in New York City, also joined us. I was very happy that our son, Sam, kept himself occupied playing football in front of Harkness with **David** and Karen **Astrachan's** two very congenial boys.

Several of our classmates sent their regrets: **Aron** and Peggy **Wahrman** had a baby in May, Hope Francesca, and so could not come; **ANA** and **Dan Kolansky** had a family matter to attend to; **Bruce Haffty** (therapeutic radiology, Yale) was giving the radiation oncology boards; and **Kim Gutner** was tak-



ing her children to Europe and so could not attend.

All of us greatly missed our friend and classmate, **Sabra Jones**, who died in a rock climbing accident since our last reunion.

Susan Baserga

1989

15th reunion

The reunion was very disappointing—of a class of more than 100 people, many of whom live in the tri-state area, only three showed up. Besides me, there was **Anita Licata** (formerly **Anita Goodrich**), who came down from Vermont, and **Dora Wang**, who came all the way from New Mexico. It was nice to see **Anita** and **Dora** again (they were at the 10th reunion as well).

Anita is married to Tom Licata and is a dermatologist at the University of Vermont. They have two children, Thomas and Isabel.

Dora came with her husband, Chris Calott, who is an architect in New Mexico, and their new baby. **Dora** is a psychiatrist at the University of New Mexico and is writing a book.

As for me, I am a neurologist at the College of Physicians and Surgeons, Columbia University, where I recently received tenure. I spend about 80 percent of my time in research and 20 percent seeing patients with movement disorders, and have built a research program on the epidemiology, genetics and pathophysiology of tremor disorders. In my spare time, I play the bagpipes with the Kearny Pipe band (we wear the MacBeth kilt), and have recently begun showing some of my artwork (pastsels) and had my first solo show in Manhattan in October. I am



married (Vinita Seghal, M.D. '90) and have two children, Devin and Ravi, ages 8 and 6, and we live in Westchester. I would love to hear from old friends. My e-mail is EDL2@columbia.edu.

Elan Louis

1994

10th reunion

It is hard to imagine that 10 years have already passed since we left (OK, since most of us left) en masse from New Haven. To celebrate the occasion, a strong contingent from the Class of 1994 gathered in New Haven to reminisce. **Constantino Pena**, positioning himself at the top stair in the Starr Atrium of the newly built Anlyan Center (can you believe the new anatomy labs are ventilated so that first-years don't constantly smell of formaldehyde?), offered a big hearty welcoming wave to all classmates as they entered the opening reception. **Tino**, an interventional radiologist in Florida, traveled solo to New Haven. His two daughters stayed home with wife Barbara (M.D. '95), an ER doc, who is expecting their third this fall. **Tino** has been in touch with **Jae Lim**, who is a neurosurgeon in Spokane, Wash.

Other classmates attending the Friday evening clambake included **Victoria Holloway**, assistant vice president of R&D, L'Oreal Institute; **Marsha Roberts**, a California-based radiologist; and **Marie Eason**. **Marsha** and **Marie**, unfortunately, could not stay for Saturday, as they had more social calls to make in the D.C. area. Also traveling from California was **Kirk Essenmacher**, director of marketing strategy for Genentech's oncology portfolio, his wife, Kirsten, and their 11-month-old daughter Stella. **Kirk** reports news from **Joetta (Davis) Maier** and **Alexa (Boer) Kimball**, neither of whom could make the trip east, and from **Dov Goldstein**, who is back in Philadelphia as the CFO of Vicuron Pharmaceuticals. **Kirk**, who still makes his famous

daiquiris, is not sure of the proper method for putting kumquats in the beverage.

Kevin (Bishoff) Carlson and **Nancy Christmas**, each with a baby in tow, carpooled up from D.C. **Kevin** is an internist-geriatrician in Maryland and has three kids all under the age of 5. Still as energetic as ever, she left many of us thinking "I don't know how she does it." **Nancy** is a retinal surgeon in Alexandria, Va. My daughters, after playing with **Nancy's** son Abbott, started lobbying for a new baby brother.

Len Landesberg arrived Saturday in time for the sherry luncheon where he, **Tino** and **Kirk** finally concluded that, after 10 years, they still looked the same (and very different from the other luncheoners who mostly hailed from classes in the 1960s).

The Saturday evening class dinner was held at my house in Guilford, Conn. Interestingly, we had more children in attendance than adults. **Debbie Schusheim**, her husband, Adam, and their two children drove up from Westport, Conn., where **Debbie** practices endocrinology. **Belinda Chan** arrived with her two boys, who very quickly bonded with my son, Noah. Kudos to **Belinda**, who recently went into a solo internal medicine practice and hung her shingle in Branford, Conn. **Kirk Essenmacher**, **Nancy Christmas** and their families completed the dinner crowd.

Many other classmates sent me e-mail offering their regrets for not being able to attend. **Melissa Berhow** just started a new anesthesiology position in Palo Alto. **Scott Dessain**, a proud dad to two lovely daughters, is an assistant professor of hematology at Thomas Jefferson Medical College and conducts research to develop fully human

monoclonal antibodies. **Beverly Naiman** and **Brian Lee** live with their two boys in Virginia, where **Bev** is a pediatric ER physician and **Brian** is a critical-care physician who is double-boarded in ER as well. **Bandy Lee** is back in New Haven as an assistant clinical professor of psychiatry at Yale. **Greg Licholai** does venture capital investing and speaks regularly with **Stephen Jackman**. **Dave Aghassi** is practicing dermatology in Boston.

I look forward to seeing everyone back in New Haven for our 15th year celebration in June 2009!

Bonnie E. Gould Rothberg

1999

5th reunion

After five years away from New Haven, the Class of 1999 gathered once again on the Yale campus for our first reunion. While there are a few things that have changed, it was nice to see some old standbys (Bar, Louis' Lunch) and some friendly faces from the past (Eric Schonewald is still there!).

Our class gathered on Friday evening, amidst an endless spread of fantastic seafood and the sounds of Dixieland music in the background. Our group included **Ken Baum** and his wife, Julie. **Ken** is practicing law in New Haven and Julie is a fifth-year medical student at Yale, planning a career in dermatology. They plan on *finally* leaving New Haven in one year, when Julie begins her residency.

Deborah Steinbaum also joined us. **Deb** is practicing general pediatrics at Mount Sinai Hospital in New York City. **Alison Days** came with her husband, Sergio. **Alison** is practicing academic pediatrics in El Paso, Texas. Our group also included **Sherri Sandifer**, **Debby Lin**, **Obi Ugwonal** and **Joy Weinberg**. **Sherri** is practicing general pediatrics in Houston. **Debby** is a second-year immunology fellow at Brigham and Women's Hospital in Boston. **Obi** is finishing an orthopaedics residency at

Columbia-Presbyterian Hospital in New York, and will be moving to Boston next year for a hand/shoulder fellowship at Brigham and Women's Hospital. **Joy** is finishing an internal medicine residency at North Shore Medical Center and plans on doing a fellowship in nephrology and hypertension at Lenox Hill Hospital in New York City.

On Saturday evening, we gathered at the Graduate Club, the site of our last evening outing as a class back in 1999. We had a great turnout, with close to 20 class members present (and had our own "kiddie" room set aside by the Alumni Association, to keep us separate from the rowdy Class of 1954). We were joined by **Lifei Guo**, who is in the midst of a residency in plastic surgery in Boston. **Deanna Chin** and her husband, John (married in September 2003), also attended. **Deanna** is finishing her fourth year of a radiology residency at Weill-Cornell Medical Center and will be doing an MRI fellowship at NYU next year. Also present were **Kathryn Cunningham**, **Ara Feinstein**, **Andrew Resnick**, **Aaron Milstone**, **Zach Leitze**, **Johnathan Henderson**, and **Grey Maher** and her husband, Aaron. **Kathryn** is practicing internal medicine at Mass General. **Ara** is in a general surgery residency at Mass General and is spending his research years getting an M.P.H. from the University of Miami. **Andy**, who is finishing a general surgery residency at UPenn, is spending his research years getting an M.B.A. from Wharton. **Aaron** finished his pediatric residency at Children's Hospital of Philadelphia (CHOP), and is currently working in a private practice for one year, before moving on to Baltimore to do a fellowship in infectious disease at Johns Hopkins. His wife, Amy, who got her medical

degree at Yale in 2000, is now a chief resident at CHOP, and is expecting their first baby. **Zach** is at Yale-New Haven Hospital doing orthopaedics. He is planning to move to Texas next year to do a fellowship in hand/shoulder surgery. **Johnathan** is in private practice at Dorchester House Community Health Center in Boston. His wife, Keba, is finishing her ob/gyn residency in Boston this year, after which they will be moving to Atlanta. **Johnathan** and Keba are expecting their first baby as well. **Grey** is currently doing a chief residency year in urology at the VA hospital in West Haven, and then plans on doing a female pelvic reconstructive surgery fellowship in California next year. After that, she plans on returning to New Haven and joining a private practice group. Lastly, I am in the middle of a fellowship in pediatric hematology-oncology at Boston Children's Hospital/Dana-Farber Cancer Institute, and recently married as well.

We had a fantastic time reminiscing about all of our classmates, and look forward to doing it again in another five years.

Elly Falzarano Barry

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What makes a tyrant tick? Ask a political psychologist

How one medical school graduate's "career in the shadows" began with an unexpected job offer.

In 1965, the CIA presented an unusual job opportunity to the young psychiatrist, then completing his residency at the National Institute of Mental Health, that was enticing enough for him to turn down a faculty position at Harvard.

Asked to develop a pilot program for what he described as "assessing at a distance the personality and political behavior of foreign leaders," **Jerrold M. Post**, M.D. '60, decided this diversion justified delaying a trip into academia. Little did he suspect in 1965 that some of the world's most important leaders

would soon be stretched out on his analyst's couch—figuratively speaking—and that his CIA side trip would last until 1986.

As founding director of the Center for the Analysis of Personality and Political Behavior (CAPPB) at the CIA, Post led an interdisciplinary behavioral science unit composed of clinical and research psychiatrists, social psychologists, political sociologists, anthropologists and political scientists. Their job was to develop political personality profiles of foreign leaders.

"We looked at foreign leaders in their cultural and political context and gauged to what degree they were playing out personal conflicts on an international stage," says Post, who today is frequently quoted on television and in newspapers and magazines.

During what he calls his 21-year "career in the shadows," Post probed the pathologies and personalities of some of the world's most dangerous minds. He continued to develop political personality profiles after joining the faculty at George Washington University in Washington, where he is professor of psychiatry, political psychology and international affairs and director of the political psychology program. Among the contemporary leaders he has profiled are Slobodan Milosevic, North Korea's Kim Jong-Il, Osama bin Laden and, most famously, Saddam Hussein. His analysis of the Iraqi leader was presented in testimony in December 1990 to the House Armed Services and Foreign Affairs committees. Post's intimate knowledge of the Iraqi leader was called upon again by national media in March 2003, when war with Iraq began, and again last December, when the Iraqi leader was captured.

"No worse beginning is imaginable," Post says of the dictator's formative years. "His father and 12-year-old brother died during his mother's pregnancy. She tried to kill herself and then tried to abort Saddam. She wouldn't even look at him when he was born in a mud hut in Tikrit."

According to Post, Saddam was passed off to an uncle, who took care of him, then returned him to his mother after she'd remarried. His stepfather abused him physically and psychologically. But when he was eight, wanting an education that his parents refused, he went back to his uncle, who filled his head with dreams of glory. "As he accumulated power," Post says, "Saddam created these marvelous palaces, and yet they all had enormous bunkers down below, like the defiant paranoid self beneath his grandiose façade. When he was captured in Tikrit, he wasn't just back in the mud hut. He was in a hole underneath the mud hut, as low as anyone could go, representing Saddam's shattered self."



SCOTT SUCHMAN

During 21 years at the CIA, psychiatrist Jerrold Post developed personal and political profiles of world leaders, including Saddam Hussein, Menachem Begin and Anwar Sadat, as well as al-Qaeda leader Osama bin Laden.

Among Post's proudest CIA achievements were the Camp David profiles his unit prepared of Menachem Begin and Anwar Sadat for President Carter in 1978. Using these assessments, the president was able to ready himself for that groundbreaking summit. In his book, *Keeping Faith* (1982), Carter acknowledged that these analyses influenced his negotiating strategy and paid rich dividends.

"After Camp David, there was scarcely a major summit without our being asked to prepare profiles and assessments of the foreign leaders," Post says. "Part of my pride was in crafting an entirely new field of intelligence at the CIA." Post was awarded the Intelligence Medal of Merit in 1979.

Since leaving the CIA in 1986, Post has established himself as an expert on "the mind of the terrorist," which is, in fact, the title of the book he's currently writing. In addition to consulting for the departments of defense and homeland security, Post was an expert witness at the 1997 trial of an Abu Nidal operative and the July 2001 trial of an al-Qaeda member for the bombing of the U.S. embassy in Tanzania.

He is the author of several widely cited books, including *When Illness Strikes the Leader* (Yale University Press, 1993) and *Leaders and Their Followers in a Dangerous World* (Cornell University Press, 2004). Post is often quoted on matters related to Saddam Hussein, Osama bin Laden and the psychology of suicide terrorism.

"I have always seen my role, in government and outside it, as communicating complicated concepts in a way that is useful for intelligence professionals, policy officials and the general public," says Post. "I'm not always reassuring, but I am trying to facilitate understanding."

—Alan Bisbort

Looking to mechanics to explain what cells do and how they develop

Mavericks start out young, it seems. Once, after performing an advanced earth science experiment with other ninth-graders, **Donald E. Ingber**, M.D. '84, PH.D. '84, arrived at a different result. "I wrote down 12," he says, "even though they all wrote down 88." The instructors informed the class that there were indeed two correct answers, but that among the few students who had discovered the less obvious solution, only one—Ingber—hadn't scratched it out in favor of the more popular result.

"That was incredible feedback from a teacher," Ingber says, "for people to do what they believe in and what they think is right."

Ingber has found this message useful in the years since as he forged an often-controversial career. While most cell biologists use molecular techniques to tease out the genes at work in health and disease, Ingber, now the Judah Folkman Professor of Vascular Biology at Harvard Medical School and Children's Hospital in Boston, has championed the more radical notion that minute mechanical forces acting on cells—pushing and pulling, compression and tension—are crucial to their normal growth and function, and that disturbances in these forces can lead to disease.

"I'm a person who has always had a strong sense of how things work by looking at them," Ingber says. "I'm very mechanically minded." Ingber's mechanical bent led to an early fascination with the work of another

rugged individualist, R. Buckminster Fuller, in particular the concept of "tensegrity," the complementary interplay of compression and tension that underlies the elegance and strength of Fuller's geodesic domes.

While a Yale undergraduate, Ingber encountered in an art class the sculptures of Kenneth Snelson, in which pipes and wires, intricately arranged according to principles of tensegrity, create airy yet rigid forms that rise improbably into space. For Ingber, who was doing tissue culture experiments on metastasis with Alan C. Sartorelli, PH.D., in the Department of Pharmacology at the time, Snelson's pipes and wires called to mind the actin filaments and microtubules that make up the cytoskeleton—the internal scaffolding of the cell.

Seeing Snelson's work had the force of a revelation, Ingber says. "I spent multiple two-week vacations in every library at Yale—the art library, the chemistry library, the physics library," he says. "I bought every book in Atticus Bookstore related to tensile membranes or patterns in nature."

Ingber gradually became convinced that mechanical forces, largely ignored since the rise of molecular biology, must play crucial roles in the development and behavior of cells. However, when he suggested to a postdoctoral fellow that cells might change their shape because of changes in tensegrity, he received a less than encouraging response. "He told me, 'Don't ever say that again!'" Ingber recalls.

But Ingber isn't one to give up easily. As a graduate student in Yale's M.D./PH.D. Program, he sought out a more hospitable environment for his



KRISTIN GULLAGE

Donald Ingber applied Buckminster Fuller's concept of tensegrity—the interplay of compression and tension underlying structures—to the study of cell biology.

ideas, which he found in the laboratory of James D. Jamieson, M.D., Ph.D., professor of cell biology and director of the program. With Jamieson's blessing, Ingber devoted a chapter of his thesis to tensegrity, and he is particularly grateful that one of his thesis advisors, the pioneering cell biologist and Nobel laureate George E. Palade, M.D., entertained his unconventional views with an open mind. "Instead of laughing, he gave me Buckminster Fuller's book *Synergetics*, which he had received as a gift when he won the Nobel," Ingber says.

When it came time for his residency, Ingber made the decision to stop his medical training to do research in the laboratory of M. Judah Folkman, M.D., at Children's Hospital in Boston. No stranger to controversy, Folkman has fought his own long and lonely battle to prove his theory that blocking angiogenesis—the body's recruitment of new blood vessels—is the key to treating cancer and a host of other diseases.

Shortly after Ingber joined the Folkman lab, a fungus contaminated a tissue culture experiment he was working on. Before pitching his dishes into the trash, Ingber decided to see whether the fungus had any noteworthy effects on the endothelial cells that were being used in the studies. It was a wise decision: the cells had retracted away from the fungus, and Ingber surmised that the fungus was secreting some substance that inhibited their growth. To Folkman's delight, Ingber had happened upon a substance that led to the development of TNP-470, one of the most promising angiogenesis inhibitors ever discovered. TNP-

470 showed potent antitumor activity, but it was shelved when Phase II trials revealed serious neurotoxicity. However, a young scientist now working in Folkman's lab has recently modified the compound, and Ingber's chance discovery may yet find its way into the clinic.

In a lab at Children's Hospital where Ingber continues his study of tensegrity, the walls are lined with framed micrographs of such stunning beauty that they could hang in the upscale galleries of nearby Back Bay. In one, cells cultured on a surface designed to constrain various forces on the cytoskeleton have assumed a number of brilliant shapes, including multihued squares and lozenges reminiscent of Paul Klee.

Ingber believes he has finally homed in on the interface between physical forces and cell physiology. Many regulatory and signaling molecules cluster on the cell membrane around proteins called integrins, which anchor the cytoskeleton of cells to the extracellular matrix. In recent work, using miniscule magnetic beads that lock onto integrins like a molecular wrench, Ingber has shown that twisting integrins in different ways causes distinctive shape changes in the cytoskeleton, which in turn cause predictable patterns of gene expression. He also can switch cells between growth, death and differentiation by varying the degree to which cells physically distort when bound to a matrix through integrins.

To investigate these processes more deeply, Ingber has developed a femto-second laser technique along with Harvard physicist Eric Mazur, Ph.D.,

that will allow him to perform highly selective nanosurgery on cells. Ingber says that the ability to obliterate some structures while retaining cells' overall function will open completely new avenues to test his theories.

Ingber is confident that the rigor of his experimental work will eventually overcome the skepticism he has long faced, and that his ideas will slowly but surely enter the mainstream of cell biology. "A couple of big *Science* and *Nature* papers convinced a hell of a lot of people," he says. "In science, even if it's a wild idea, if other people start using it and find it valuable—if it works—it builds momentum."

—Peter Farley

“When we cast all medical accidents ... in terms of negligence, doctors are loathe to come forward.”

Straddling law and medicine, and looking for an answer to the malpractice crisis

When health policy guru **Troyen A. Brennan**, M.P.H. '84, J.D. '84, M.D. '84, began his studies at the School of Medicine in 1978, fresh from a Rhodes Scholarship at Oxford, he “wandered around,” he says, liberally sampling the range of courses Yale had to offer, particularly in public health and law. Brennan already had a strong interest in policy research, and he found the classes at the Law School to be so stimulating that he donned a second hat during his second year of medical school and became a law student as well.

But while Brennan still believes that his immersion in the world of law has been invaluable in his career as a policy-maker, he never doubted that he would spend his working life as a physician. “I always knew I’d practice medicine, not practice law,” he says. “I’ve never taken a bar exam.”

Lawyering is too solitary for Brennan, who prefers the social and intellectual give-and-take of medicine. “The practice of law is pretty isolating, whereas medicine’s just the opposite—it’s always dealing with people,” says Brennan, now professor of medicine at Harvard Medical School and professor of law and public health at the Harvard School of Public Health. “It’s much more interpersonally satisfying.”

So it’s no surprise that Brennan chose a very public way of doctoring. He has been front-and-center in national debates on health care policy for two decades; his research group now focuses on the interwoven issues of improving

patient safety and addressing the crisis in medical malpractice.

“Until very recently, the major way in which our health care system dealt with deterring medical injuries and improving safety was through medical malpractice. That was the social mechanism,” Brennan says. “We think those should be torn apart, and that patient safety should be addressed through an entirely different mechanism.”

Brennan argues that both doctors and patients would be far better off with an administrative compensation scheme or mandatory arbitration of claims of medical injury. He envisions a system similar to Workers’ Compensation, where an administrative-law judge would render verdicts after advice from experts and with the help of specifically defined criteria on how avoidable a given patient’s injuries were under present standards of care. Any damages would be awarded according to strict guidelines.

As it stands, state common law governing medical injury claims is a patchwork of wildly varying standards and precedents. A few states—Nevada, Oregon, Pennsylvania, Texas and Illinois, for example—are malpractice hotspots where skyrocketing insurance premiums are leading to a shortage of specialists. The American Medical Association has said that as many as 20 other states are also in “malpractice crisis.” And Brennan says that 50 to 60 percent of insurance premiums now pay attorneys’ fees rather than compensating patients who have been injured in avoidable medical accidents.

Brennan also endorses a greater embrace of “enterprise liability,” where hospitals, rather than individual doc-

tors, are held liable when accidents occur. “In plane crashes, it’s not like everybody goes and sues the pilot,” he says. “They sue the airline, because it’s a big enterprise. The pilot’s part of it, but he’s got to be informed by the systems and processes that are going to make that flight safe. A doctor in a hospital is part of a much larger system, and that system’s got to function well to prevent these types of injuries in the future.”

Brennan says that the simple substitution of “avoidable” for “negligent” under his scheme would represent a major cultural shift away from the simmering cauldron of the malpractice courtroom. When we cast all medical accidents, even some that may have been unavoidable, in terms of negligence, he says, doctors are loathe to come forward when they have made an error.

“If doctors could say, ‘This was an avoidable injury, and we should go ahead and report this,’ Brennan says, “they don’t have to feel as though they’re involved in some sort of moral Passion Play.”

—P.F.

Familiar Faces

Do you have a colleague who is making a difference in medicine or public health or has followed an unusual path since leaving Yale? We’d like to hear about alumni of the School of Medicine, School of Public Health, Physician Associate Program and the medical school’s doctoral, fellowship and residency programs. Drop us a line at yym@yale.edu or write to Faces, Yale Medicine, P.O. Box 7612, New Haven, CT 06519-0612.



Joseph Robinson Jr.



Jack Barchas



Robert Luke



Eliot Sorel



Marc Glickstein



Andrew Griffith



Gina Solomon

1940s

Morris A. Wessel, M.D. '43, clinical professor of pediatrics at Yale, is spending two days a week as a developmental pediatrician at the Clifford W. Beers Child Guidance Clinic in New Haven. Throughout his career Wessel has focused on pediatric bereavement, prenatal counseling for parents, neonatal death and guidance for adolescents. In June 2003 his article on helping children and families cope with the loss of a loved one was published in *Pediatrics in Review*.

1950s

Joseph D. Robinson Jr., M.D. '59, professor emeritus of pharmacology at the Syracuse campus of the State University of New York, retired to Charlottesville, Va., after four decades of biomedical research (membrane transport) and teaching (neuropharmacology). For the past two decades he has been indulging his enthusiasm for the history and philosophy of science, and his most recent book, *Mechanisms of Synaptic Transmission: Bridging the Gaps (1890-1990)*, just received the biennial award for Outstanding Book in the History of the Neurosciences from the International Society for the History of the Neurosciences.

1960s

Jack D. Barchas, M.D. '61, the Barklie McKee Henry Professor and chair of psychiatry at the Weill Medical College of Cornell University and psychiatrist-in-chief at the Weill-Cornell Medical Center of the New York-Presbyterian Hospital, received the American Psychiatric

Association (APA) Award for Research in May at its annual meeting in New York. This honor, the oldest and most prestigious of the APA's research awards, was shared with J. Christian Gillin, M.D., who received the award posthumously. Barchas' Award for Research lecture was titled "Adventures in Psychiatric Research: From Neurobiology to Public Policy."

Gerald R. Fink, Ph.D. '65, American Cancer Society Professor of Genetics at the Massachusetts Institute of Technology (MIT) and former director and founding member of the Whitehead Institute, has joined the scientific advisory board of Dyadic International, a biotechnology company that bases its products and solutions on its protein expression technology.

Robert G. Luke, M.D., FW '65, director of internal medicine at the University of Cincinnati Medical Center, was elected to the board of regents of the American College of Physicians (ACP) during its annual meeting in New Orleans in April. Luke, a member of the ACP since 1970, will serve as regent for a three-year term.

1970s

Eliot Sorel, M.D., FW '75, watched his son, Marc, graduate from Yale this year. Sorel recently chaired the scientific committee of the First African Congress on Social Psychiatry in Johannesburg, South Africa, on "Brain, Behavior and Molecules in Social Contexts."

1980s

Eugene J. Barrett, M.D., Ph.D., FW '80, professor of pediatrics and medicine at the University of Virginia School of Medicine in Charlottesville and president of the American Diabetes Association, spoke about the increasing hope for treatment and prevention of type 2 diabetes at the Trinity Mother Frances Health System Diabetes Seminar in March in Tyler, Texas.

Marc F. Glickstein, M.D. '80, HS '83, a radiologist at Hartford Hospital and Jefferson X-Ray Group and president of the Radiological Society of Connecticut, was inducted as a fellow of the American College of Radiology at its annual meeting in Washington, D.C., in May.

1990s

Andrew J. Griffith, M.D. '92, Ph.D. '92, who resides in Rockville, Md., with his wife and three daughters, received a 2002 Presidential Early Career Award for Scientists and Engineers, the highest government honor for scientists and engineers beginning independent careers. The award was presented in May 2004. Griffith is part of the intramural research program of the National Institute on Deafness and Other Communication Disorders at the National Institutes of Health. His research group studies the clinical manifestations and the molecular basis of hereditary deafness.

Gina M. Solomon, M.D. '91, M.P.H., assistant clinical professor of medicine at the University of California, San Francisco, and a senior scientist in the Health and Environment Program of

the National Resources Defense Council, received the Clean Air Award for her research on a direct relationship between diesel exhaust and respiratory disease. The award was presented in April at the American Lung Association's annual luncheon in San Francisco.

Nirit Weiss, M.D. '98, and **Stephen B. Solomon**, M.D. '93, were married on May 16 at the Harvard Club in New York. Weiss is the chief resident in neurosurgery at Johns Hopkins Hospital and Solomon is an assistant professor of radiology and urology at the Johns Hopkins University School of Medicine in Baltimore, where the two met.

2000s

Barbara Ellen Latunik, M.M.Sc. '03, was married on June 7 to Theodore Walter Esders Jr. at St. Josaphat's Ukrainian Catholic Church in Irondequoit, N.Y. Latunik works at Park Ridge Hospital, Rochester, N.Y., as a physician assistant. Her husband is a special education teacher.

Anita Reddy, Ph.D. '02, FW '02, and **Steven Harrison Williams**, M.D. '99, were married on May 30 at Pier Sixty in Manhattan. Reddy is a staff scientist at Alexion Pharmaceuticals and Williams is a resident in plastic and reconstructive surgery at Yale-New Haven Hospital.

SEND ALUMNI NEWS TO
Claire M. Bessinger, *Yale Medicine*,
P.O. Box 7612, New Haven, CT
06519-0612, or via e-mail
to claire.bessinger@yale.edu

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James R. Brayshaw, M.D., HS '57, a retired internist from Deltaville, Va., died on May 15 at the age of 75. During his career, Brayshaw was president of Alexandria Hospital; medical director of Goodwin House East and West, a continuing care retirement community; and resident physician at Episcopal High School.

Jonathan M. Clive, PH.D. '73, a biostatistician from Farmington, Conn., died on February 27 at the age of 58. In the 1970s Clive was on the faculty at Duke University. He later served as director of biostatistical research at the University of Connecticut Health Center, where he helped medical and dental researchers design studies and interpret data.

Edmund S. Crelin Jr., PH.D. '51, professor emeritus of surgery (anatomy) at Yale, who was instrumental in creating the neonatal and ultrasound units at Yale-New Haven Hospital, died on June 21 in Branford, Conn., at the age of 81. Crelin also pioneered the Physician Associate Program at the school and was chair of the Human Growth and Development Study Unit. After his retirement in 1991, he received an honorary appointment to the Yale Society of Distinguished Teachers.

Donald J. Ferguson, M.D. '42, of Minneapolis, died on January 9 at the age of 87. Ferguson was an Army captain in the European Theater of Operations during World War II. A professor of surgery at the University of Chicago until 1987 and former chief of surgery at the Minneapolis Veteran's Hospital, he researched and wrote papers on surgery and breast cancer.

Ann Gomez, M.P.H. '67, of Largo, Fla., died on May 22 in Naperville, Ill. Born in Brooklyn, N.Y., Gomez was a retired administrator at Bridgeport Hospital in Connecticut. She was also executive director of Presbyterian Village North, a continuing care retirement community in Dallas.

James N. Harten, M.D. '46, of Wareham, Mass., died on May 4 at the age of 81. Harten had a family practice for 54 years and was a diplomate of the American Board of Family Practice. During World War II and the Korean Conflict, he served as an officer and general surgeon in the U.S. Army and as a major in the U.S. Air Force.

Robert D. King, M.D. '51, HS '53, of Indianapolis, died on April 25 at the age of 79. King served as a surgeon for the Reserve Corps of the U.S. Public Health Service in Seattle. He was a professor of surgery and a cardiothoracic surgeon at the Indiana University Medical Center until he retired in 1995.

William McBride, M.D. '73, medical director of Merck & Co., died on April 17 of kidney cancer at home in Radnor, Pa. He was 56. McBride was a gastroenterologist at Downstate Medical Center in Brooklyn, N.Y., until 1983, when he started a private practice in Atlanta. He was also a professor at the medical schools at Morehouse College and Emory University.

Lowell E. Olson, M.D. '54, of North Haven, Conn., died on March 23 at the age of 75. Early in his career Olson joined the faculty at Yale as an instructor in obstetrics and gynecology. He

stayed for 41 years and at his death was an associate clinical professor. From 1965 until his retirement in 1998, he was also in private practice.

Frederick L. Richardson, M.D., of North Baltimore, Md., died on March 5 in an automobile accident in Maryland at the age of 77. Richardson was a lecturer in neurology on the Yale faculty from 1993 until 2003. As a medical student he was stricken with polio but recovered after one year. He devoted his life to helping sick children in countries all over the world.

William B. Seaman, M.D., HS '47, of Tequesta, Fla., died at home on June 7 at the age of 88. Seaman was a major and flight surgeon in the U.S. Army Air Corps during World War II. He was professor of radiology at Washington University School of Medicine in St. Louis, and later became chair and director of radiology at the College of Physicians and Surgeons at Columbia University.

John M. Sherwin, M.D., HS '65, of Manchester, N.H., died of cancer on February 11 at the age of 74. Sherwin joined the staff at Elliot Hospital in Manchester in 1965 and founded New Hampshire Orthopaedic Surgery, P.A. He performed the first total hip replacement surgery at Elliot Hospital and holds a U.S. patent for the Sherwin Knee Retractor.

A. Thomas Snoko, M.D. '64, of Glendale, Ariz., died on February 28 at the age of 65. Snoko served in the Commissioned Corps of the U.S. Public Health Service (PHS) from 1965 to 1989. He was the general medical officer at the PHS Indian Hospital and was later

promoted to service unit director. He also worked as a staff physician in family practice at the Phoenix Indian Medical Center.

Nicholas M. Stahl, M.D. '43, of Charlestown, R.I., died on April 13 at the Westerly Nursing Home. He was 87. Stahl had a private practice in pediatric surgery in Syracuse, N.Y., and was an instructor at Syracuse University Medical School. He served as a lieutenant in the Army Medical Corps during World War II and attained the rank of major in 1947.

Howard W. Telson, M.D. '80, died of cancer on April 5 at the age of 49. Telson was a clinical associate professor of psychiatry and a faculty member for 20 years at New York University School of Medicine. He developed innovative programs at Bellevue Hospital to improve the mental health systems and New York's outpatient commitment program that was expanded by Kendra's Law, which allows courts to order some people with brain disorders to adhere to treatment while they live in the community.

Herbert P. Ungricht, M.D. '51, of Salt Lake City, died on March 14 at the age of 86. Ungricht was a pilot with the rank of lieutenant colonel in the U.S. Army Air Corps during World War II. He practiced ophthalmology in Salt Lake City until he was 82.

SEND OBITUARY NOTICES TO
Claire M. Bessinger, *Yale Medicine*,
P.O. Box 7612, New Haven, CT
06519-0612, or via e-mail
to claire.bessinger@yale.edu



JOHN CURTIS

Wednesday night at the clinic

As schools around the country rethink medical education and look for ways to enhance clinical experiences for students, the Wednesday Evening Clinic can look back on almost three decades of a unique experiment [“Learning for the Long Run,” Spring 2001]. Since the mid-1970s about 15 students each year have enjoyed a rare opportunity in medical school—the chance to see the same patient over and over again—and learned how to manage long-term clinical care. Working under the supervision of attending physicians, medical students interview patients, conduct physical exams, make diagnoses and recommend treatment.

For G. Morris Dillard, M.D., PH.D., who founded the clinic, the clinic’s value is not in the information that students acquire, but the ability to think clinically.

“It is the logical reasoning with the material you have at hand that is the most important thing the clinic can accomplish,” he said.

The clinic serves as an example of how to expose students to long-term clinical experiences at a time when the medical school is exploring ways to teach universal, as opposed to discipline-specific, skills. “There is an interest in a longitudinal experience,” said Herbert S. Chase Jr., M.D., deputy dean for education. “To that extent, the Wednesday Evening Clinic was really a pioneer.”

Kathleen P. White, M.D., the clinic’s director, said the clinic has seen a few changes in recent years. Spanish-speaking first- and second-year students are on hand to interpret for patients. Undergraduates interested in medicine provide clerical support. Four more attending physicians have joined the roster of volunteers, and the clinic has recruited community doctors. Clinic files are now computerized so preceptors can review student notes on their cases online.

And this year, said White, two students found long-term preceptorships outside the clinic, in reproductive gynecology and vascular surgery. “They got longitudinal experience in their interests,” White said.

—John Curtis



JANUARY 1954
Alumni Bulletin

Wanted: Books for General Reading

“A small bookplate indicating ownership of the Yale Medical Library and bearing the tag from Marital’s [sic] Epigrams, ‘Those books they praise, but these they read’ is used in a collection of books that have nothing to do with medicine—not only volumes classified as ‘light reading’ but also books in other fields of endeavor which represent good general reading. This collection was started when a member of the Library Committee suggested the possibility of having a non-medical section in the Library. It was indicated that such volumes were to be added by gift only.

“Dr. Samuel C. Harvey made the initial donation of some thirty-odd volumes, and donations have been added subsequently. These books have circulated many times throughout the year. They are not catalogued in any way and are located in the Historical Library near the main door.

“The Library would be most grateful to receive from members of the Alumni Association and other interested persons any good books published since World War II to add to this collection.”



WINTER 1979
Yale Medicine

A Special Program to Help Juvenile Diabetics

“... Last year, Connecticut became the second state (after Florida) to establish a program for children with diabetes, when the State Legislature authorized an appropriation of \$130,000 to the State Department of Health to establish and administer two regional centers to provide counseling and health services to the estimated 1,500 to 2,500 diabetic children in Connecticut and their families. The centers are at the Yale School of Medicine, under the direction of Dr. Myron Genel and Dr. William V. Tamborlane Jr., and at the University of Connecticut School of Medicine, under the direction of Dr. David Rowe and Dr. Susan Ratzan.

“The program was developed in the Yale Section of Pediatric Endocrinology by Dr. Genel, who is program director of the Children’s Clinical Research center at Yale. Modeled in part on the Florida program, it consists of a team at each center of three physicians, a nurse specialist, social worker, dietician, lab technician, and administrative coordinator. Their objective is to educate the young diabetics and their families, with the ultimate goal of helping the patients to care for themselves.”

Chinese University leaders listen as Lawrence Rizzolo, associate professor of surgery (anatomy), gives a tour of new teaching facilities in the Anlyan Center. Below, the chop designed for the China-Yale Advanced University Leadership Program.



TERRY DAGRADI



CHINESE UNIVERSITY LEADERS VISIT YALE

Leaders of 12 of China's most prestigious universities spent two weeks at Yale in August, including one day at the medical school. The purpose of their visit, the first of its kind sponsored by China's Ministry of Education outside the country, was to study Yale's structure, organization and administrative practices.

At the medical school Dean Robert J. Alpern, M.D., and others described medical education at Yale and in the United States. (In China students go straight from secondary school to medical school.) The visitors also toured research laboratories and teaching laboratories and classrooms for histology and anatomy.

Yale began a series of educational exchanges with Chinese universities in 1996, and earlier this year Yale concluded an agreement with Fudan University in Shanghai to promote exchanges among scholars in history, East Asian languages and literature, genetics, biology, law, medicine and management.

"Will this visit cause changes to be made?" asked Tian Xu, P.H.D. '90, professor and vice chair of genetics at Yale and special advisor to President Richard C. Levin on science and higher education in China. "Definitely. It's a question of how much and how fast."

yale medicine P.O. BOX 7612, NEW HAVEN CT 06519-0612
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