

yale medicine

A close-up photograph of a young child's face, focusing on the eyes and hair. The child has bright blue eyes and reddish-brown hair. The image is the background for the entire page.

summer 2004

Robert Alpern is
named 16th dean

4

Homage to the
crown prints

16

Looking at life
from a wheelchair

26

Mapping the social mind

The mysteries of autism, an often-intractable disorder of aloneness, are starting to give way to discoveries by Yale scientists.

18



SUMMER 2004

CONTENTS

ON THE COVER AND THESE PAGES

Three-year-old Hailey Lyle (cover) was diagnosed with autism at 15 months. Because her older brother, Brendan (this page), had been diagnosed with the disorder a year earlier, Hailey's parents were on the lookout for symptoms. "At a year, we thought we were out of the woods with her," says her mother, Pamela Lyle, "but very shortly after that she started to lose language and spiral down socially." Lyle and her husband, Christopher, began to intervene with guidance from the Yale Child Study Center. "We went in with full force and tried to spend as much time as possible with her," says Pamela Lyle. "It's slow going, but she's definitely improved."

Photographs by Daphne Geismar

2	Letters
4	Chronicle
8	Rounds
10	Findings
12	Books & Ideas
16	Capsule

18 Mapping the social mind

The mysteries of autism, an often-intractable disorder of aloneness, are starting to give way to discoveries by Yale scientists. Their hope is that early intervention will help autistic children develop social ability and a better sense of their place in the world.

By Peter Farley

26 Life on wheels

Filmmaker and physician Gretchen Berland gave cameras to three disabled people and asked them to shoot their everyday lives.

Rolling, the documentary that resulted, shows us what the world looks like from the seat of a wheelchair.

By Cathy Shufro

34	Faculty
36	Students
40	Alumni
46	In Memoriam
48	Follow-Up
48	Archives

On the Web

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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.

Ethical decisions are not always unanimous

As a former Yale house officer trained at Yale nearly 50 years ago, I want to congratulate the bioethics program described in the Spring 2004 edition of *Yale Medicine* ["Two Alternatives, Each a Little Wrong"].

In the case concerning the schizophrenic young man whose mother secretly medicated him, I agree with the attending physician. Although society does not surreptitiously medicate chronic street schizophrenics, in this case a dedicated caregiver (his mother) was available and, on balance, the medication given without the patient's permission probably contributed to his improvement. Unlike the bioethicist, I would have been willing to cooperate with the mother's wishes in this treatment of a very major medical disease.

I agree with the bioethicists in the other three cases.

Many thanks for this interesting discussion.

*Donald P. Feeney, M.D., HS '57
Rockford, Ill.*

I agree with Dr. Zonana that the physician should not have colluded with the mother who secretly placed medication in the psychotic son's food, even though the result was marked improvement in the son's condition. It is also worth asking whether there might have been an advance directive in this case, in which the son, at a time when he was competent, expressed a preference for treatment. Is it possible that he had spoken in the past about the benefits of medication? Might he have even suggested that his mother hide his medicine in his food if he again became psychotic? While these are unlikely possibilities, they highlight the importance of considering the wishes an incompetent patient may have expressed when he was not psychotic. If the son had expressed a preference for medication, the ethical balance between honesty and patient autonomy on the one hand and clinical out-

come on the other would have tilted toward treatment. In the legal realm, some jurisdictions are now recognizing health care proxies for psychiatric treatment.

*Burns Woodward, M.D. '71
Waban, Mass.*

Max Taffel, a surgeon, not a neurosurgeon

I was sad to read of the death of Max Taffel [*In memoriam*, Spring 2004].

You reported that Dr. Taffel was a neurosurgeon. I believe you will find that he was a general surgeon.

Max Taffel was the most memorable of the excellent teachers I was fortunate enough to be exposed to at Yale Medical School from 1955 to 1959. He rarely missed medical grand rounds (despite the fact he was a surgeon) and he usually had something to say that was worth listening to and that demonstrated the great depth and breadth of his knowledge.

During World War II, he might well have been, as you reported, "the only neurosurgeon on ... Saipan," as a general surgeon. In my 31-year career as a military general surgeon, I did some neurosurgical cases myself (emergency head surgery for trauma) when the situation demanded it. But I think you will find that, at least when I knew him and scrubbed with him (while acting as a substitute surgical intern at Grace-New Haven Hospital), Dr. Max Taffel was a general surgeon.

*Martin L. Fackler, M.D. '59
Gainesville, Fla.*

Dr. Fackler is correct. Max Taffel was a general surgeon who had received training in thoracic and neurological surgery.



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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Seeing with new eyes

There was a moment, probably sometime in the mid-1980s, when my awareness of the politics of disability eclipsed my awareness of what it means to be disabled. The latter was never that developed, since I grew up without disability and had no close friends or relations who were disabled. But although my knowledge was second- or third-hand, I wasn't indifferent. Like many others, I had been raised to appreciate the hardships and rights of disabled people, whom we knew then as "handicapped." (The H-word had not yet been retired as politically incorrect.)

At a certain point though, I now realize, I must have lost a measure of empathy. This could have been the result of my own self-absorption or a reaction to the stridency of a particularly militant point of view I encountered somewhere; I don't recall. All I know is that somewhere between my first job and third child, a thought nested in my consciousness that said, "Sure that's hard, but life is tough all over."

Gretchen Berland's film *Rolling* changed all this.

Rolling, the subject of Cathy Shufro's article ("Life on Wheels," page 26), is powerful in the simplicity of its basic premise: Berland equipped three disabled people in Los Angeles with digital video cameras and asked them to record the events of their daily lives. The intimate, 70-minute film that resulted shows what it is like to depend on a wheelchair, and does so in a way that an objective, third-person documentary likely could not have. For me, the realization that life just *isn't* as hard for most of us came when one of the three protagonists, Vicki Elman, was obliged to roll herself off the sidewalk and into city traffic in order to get around a carelessly placed newspaper box. The obstacle would have been insignificant to another pedestrian, but Elman's solution put her life at risk. My new attitude was reinforced later in the film when Elman, who has multiple sclerosis, was stranded outside her home, alone as the sun went down, hours after a van driver, citing company rules, had refused to wheel her inside.

Rolling changed how I feel, but this was not the director's first goal. Berland, an assistant professor of medicine at Yale who began the project as a Robert Wood Johnson Clinical Scholar at UCLA, says her initial purpose in making the film was to explore a rather unconventional research tool—the documentary film—and to produce new knowledge about disability in the process. "You can use the visual medium to explore aspects of a patient's experience

that we might not otherwise be able to capture using any other kind of data collection tool," says Berland, who was a producer for *NOVA* and *NewsHour* before studying medicine. Her colleague Harlan Krumholz, M.D., calls the film a much-needed complement to huge analytical studies of clinical data that reveal patterns on a large scale but contribute little to doctors' understanding of "the tapestry of what makes up [patients'] lives."

If you get the chance to see *Rolling*, jump on it. Two short clips may be viewed on our website, yalemedicine.yale.edu, and the film is being screened at festivals. In an era when politics have become increasingly polarized and we risk categorizing people as either "us" or "them," *Rolling* reminds us in a straightforward and honest way of the common ground we all share as human beings. "There but for the grace ..."

Michael Fitzsosa

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SECOND OPINION BY SIDNEY HARRIS



"IT'S JUST A MILD HYPERINSULINISM DUE TO ISLET CELL HYPERPLASIA WITH A TOUCH OF HEPATIC INSUFFICIENCY AND GLYCOGEN DEPLETION. IN OTHER WORDS, WATCH YOUR DIET."



MICHAEL MARSLAND

With President Richard Levin at his side, Robert Alpern, left, the 16th dean of the medical school, greeted faculty in the Historical Library in April. Alpern, who served as dean of the University of Texas Southwestern Medical School, started at Yale on June 1.

A down-to-earth leader who gets things done

Texas dean Robert Alpern, a distinguished nephrologist, takes the reins at Yale.

When Donald W. Seldin, M.D. '43D, HS '46, was recruiting a chief nephrologist to the University of Texas (UT) Southwestern Medical Center in 1987, one of the names on his list was Robert J. Alpern, M.D., a junior faculty member at the University of California, San Francisco (UCSF) and a rising star in the field of kidney research. "He had just barely finished his own training," recalled Seldin, a Yale alumnus who served as Southwestern's chair of medicine for 38 years and helped build the Dallas school into an academic powerhouse. "In surveying the country, I thought he was one of two people who had what I was looking for, despite his young age."

A dozen years later, Alpern was named dean of UT Southwestern's medical school, and in late April of this year he was introduced to Yale faculty members as the School of Medicine's 16th dean. He began work a month later, on June 1.

Alpern's reputation as an affable colleague and a leader who gets things done preceded him. "Bob is an extraordinary catch for us," Yale President Richard C. Levin told the faculty gathering on April 30, "He is a person who not only has a record of accomplishment [as a dean and section chief], but also one who has all the human qualities that make an outstanding leader. He is a highly accomplished scientist, a fabulous

teacher ... and a person who inspires confidence and has the support of virtually everyone with whom he works."

A native of Brooklyn, N.Y., who grew up on Long Island, Alpern attended Northwestern University and the University of Chicago's medical school before training in internal medicine at Columbia and nephrology at UCSF. At UCSF he was a solidly well-rounded academician, excelling as a teacher and clinician and launching a research career focused on the underlying mechanisms of acid-base balance in the kidney. He traces his interest in medicine to an early love of science and a desire to help others and fondly recalls the month he spent at Yale as a visiting fourth-year medical student in 1975.

It was in the lab that he met his wife and research collaborator, Patricia A. Preisig, PH.D. They began working together when he was a postdoctoral fellow and she was a graduate student in the lab of Floyd C. Rector Jr., M.D., at UCSF; since then they have focused their studies on better understanding the role of the kidney's proximal tubule in acid-base regulation. Their work has shown how two molecules, the Na/H antiporter known as NHE3 and the citrate transporter NaDC-1, mediate the kidney's ability to excrete acid and defend against a metabolic acidosis.

Preisig will be moving her lab to New Haven as a faculty member in the Department of Internal Medicine in 2005; for the coming academic year, she will remain in Dallas, where their daughter, Rachele, will be a high school senior. Their son, Kyle, is starting ninth grade.

Gerhard H. Giebisch, M.D., remembers meeting Alpern in the early 1980s

when Alpern interviewed at Yale to spend time in the Giebisch lab. They have remained friends and colleagues ever since. According to Giebisch, Alpern has become a world leader in the field of acid-base regulation in the kidney. “His work has really been fundamental and pushed the field forward,” said Giebisch, Sterling Professor of Cellular and Molecular Physiology, citing Alpern’s development of sophisticated fluorescence techniques for measuring acid inside living kidney cells, which previously had not been possible. Alpern also worked out key details that explain how nephrons compensate to handle an increased acid load, as might occur during kidney failure.

Search committee members said they were impressed by Alpern when he visited New Haven in February and March. “He listened effectively, he was thoughtful and he was down-to-earth,” said committee member David L. Coleman, M.D., HS ’80, the interim chair of medicine. (According to Seldin, Alpern was successful in Dallas because he cared a great deal about quality and is “thoughtful, composed and balanced.”) In checking Alpern’s references, “one of the striking things about him was that there wasn’t a single call that wasn’t positive,” another search committee member said. “The consensus was that he is absolutely fabulous. He comes across as youthful, energetic and very, very bright.” And despite his easygoing personality, he apparently has the ability to make tough decisions. “The story we heard more than once is that you go into his office to make a request, he says no—and you feel good about it. That’s a rare talent.”

Alpern said he is coming to Yale with major goals that he began formulating during the interview and negotiation process. “I sensed that at every level, from President Levin and Provost [Susan] Hockfield all the way down, everyone wants to make Yale School of Medicine better.” He said he asked Levin for significant resources to do just that and that “we were in total

agreement on the vision for the school” regarding programs, space and faculty. “Without going into details,” he said, “the university was generous in its support.” Levin confirmed this when he introduced Alpern in April, noting that the economics of medical schools “are not what they were 20 years ago.”

“Medical margins are tight, recoveries on grants are not fully compensatory, and we recognize that until the school develops the kind of philanthropic base that it must develop over the coming years,” Levin said, “the university is going to have to step in and provide the resources that will stop it from treading water.”

Alpern said his vision for the school is “to have outstanding programs in education, research and clinical care. These programs should be as good as they can be, among the best in the world. Yale already has many outstanding programs in these three arenas that are likely among the best, but no medical school is perfect in all aspects. We will identify our priorities for program improvement and then move forward.”

As Alpern prepared to move to New Haven, UT Southwestern named an acting dean to see it through its coming search process for a new leader. For this post, UT chose a Yale alumnus, pharmacologist Alfred G. Gilman, M.D., Ph.D., a winner of the 1994 Nobel Prize in physiology or medicine for the discovery of G-proteins.

Levin praised neurosurgery Chair Dennis D. Spencer, M.D., HS ’77, who served as interim dean for the past year, for “an absolutely spectacular job” shepherding the school and building bridges among its diverse constituencies. “He brought this faculty together in a way it hadn’t been for some time and worked very hard to collaborate, not only within the medical school but also with the university and hospital, in ways that were welcomed by all of us.”

—*Michael Fitzsousa*

For doctors, scientists, workshop series is an initiative in translation

Catalin S. Buhimschi, M.D., is just starting out on his research career studying high-risk pregnancies in the obstetrics, gynecology and reproductive sciences department. Cardiologist Albert J. Sinusas, M.D., an associate professor in the departments of medicine and diagnostic radiology, investigates diseases that typically occur at the other end of life. He looks for ways to image and model the beating heart, especially after an infarction, to improve diagnosis and treatment. Under normal circumstances, their paths might never cross, but they discovered they had much to talk about when they finally met.

The meeting of the two investigators was just one of the unlikely, and potentially productive, encounters among faculty who attended the Dean’s Workshop on May 7 in the Anlyan Center Auditorium. The meeting was the first in a series of events designed to bring together basic scientists, clinical researchers and clinicians from across the School of Medicine to explore ways to move basic science advances more swiftly to patient care. The workshops are part of a larger initiative launched last academic year by Interim Dean Dennis D. Spencer, M.D., HS ’77, who told the overflow audience, “This is an attempt to further focus our efforts on why we are here: patients and patients’ health.”

As part of that initiative, Spencer also announced a commitment by the School of Medicine of up to \$1 million in funding for pilot projects that bring basic and clinical scientists from different departments together. The two-year grants will provide up to \$150,000 with the aim of generating data that will attract additional outside funding. Said Spencer, “I visualize a research continuum where human investigators and basic researchers will focus together on a single problem.”

The translational research program comes partly in response to the Roadmap initiative announced by the National Institutes of Health (NIH) last September. NIH Director Elias A. Zerhouni, M.D., had identified major opportunities and gaps in biomedical research that no single institute at NIH could tackle alone, but that the agency as a whole could address to make the biggest impact. The Roadmap also established new funding for research across institutes.

The first Dean's Workshop focused on Yale's magnetic resonance imaging core research facility and some of its applications for structural and functional studies. Three faculty members from the Magnetic Resonance Research Center, James S. Duncan, Ph.D., R. Todd Constable, Ph.D., and Douglas L. Rothman, Ph.D., spoke about their efforts to develop new contrast mechanisms and algorithms to improve both imaging methods and understanding of the results. Much of that work results from helping basic and clinical investigators carry out their research. "We all work in a collaborative matrix," Duncan said.

Three clinical researchers—Sinusas, neuroscientist Marcia K. Johnson, Ph.D., and diabetes investigator Gerald I. Shulman, M.D., Ph.D., gave overviews of their studies using imaging technologies. Sinusas said findings from his 15-year effort with Duncan to model and analyze the changing shape and structure of the beating heart may help predict heart wall damage and patient prognosis following an infarct.

After the workshop, Buhimschi, an instructor in obstetrics and gynecology, spoke with Sinusas about his efforts to model the changing uterus. "I was aware of Yale's interest in new imaging techniques, but I wasn't aware of Dr. Sinusas' work," he explained later. "I hope to identify ways to pursue our idea, maybe even together with him. Ultimately, I will apply for a grant."

—Marc Wortman

An author and physician helps residents become better doctors through writing

Physicians who listen to their patients' stories—who listen as writers would—strengthen their relationships with those patients, according to physician and author Abraham Verghese, M.D., M.F.A. And doctors who forge these connections to their patients are likely to take better emotional care of themselves as well, said Verghese, speaking recently at medical grand rounds.

"To be aware of stories is to be empathetic. ... What we're talking about is imagining the patient's life," said Verghese, director of the Center for Medical Humanities and Ethics at the University of Texas Health Science Center at San Antonio. Verghese wrote *My Own Country: A Doctor's Story*, a memoir of caring for AIDS patients in Tennessee in the early days of the epidemic, which *Time* magazine called one of the five best books of 1994.

Verghese's talk, "What the Pen Teaches the Stethoscope," was linked to a writer's workshop for residents

that he'd run last fall. The workshop was part of efforts by the Department of Internal Medicine to strengthen the doctor-patient relationship, said Asghar Rastegar, M.D., the department's associate chair for medical education and academic affairs.

"Our goal is to provide a counterweight to the increasing use of medical technology, which requires less direct contact between physician and patient," said Rastegar, who developed the writing program in partnership with former Chair Ralph I. Horwitz, M.D. (Surgeon and medical writer Atul Gawande, M.D., M.P.H., this year's Commencement speaker, spent time with the residents in May.)

Fourteen medical residents, chosen on the basis of writing samples, spent two and a half days with Verghese critiquing one another's work. In teaching the residents, Verghese used techniques he'd learned at the Iowa Writers' Workshop at the University of Iowa in 1990-91. The residents compiled their stories about patients, both fictional and real, in a booklet called *Capsules*. They read from their work when Verghese returned in January as part of the program financed by a fund in memory of Fredrick L. Sachs, M.D.

Workshop participant Amy M. Nuernberg, M.D. '00, chief resident in medicine, said she experienced a catharsis while writing about a college student in her care who had died in a matter of weeks. "It made

EPH RECEIVES GRANT FOR MAPPING LYME DISEASE RISK

Durland Fish, Ph.D., professor of epidemiology, has received a \$2.9 million, four-year grant from the Centers for Disease Control and Prevention to map the risk of Lyme disease infection in the eastern United States. Fish and his colleagues will focus on the prevalence and genetics of Lyme disease bacteria carried by ticks in the largest field study of tick-borne diseases conducted in the United States. Satellite imagery and geographic information systems will be applied to the project.

—John Curtis



me realize how strongly it had affected me,” said Nuernberg. “She wasn’t just another patient. ... It helped me sort out on paper all these conflicted emotions.”

In his talk, Verghese described what he’d recommended to the residents: that they try to delineate in their patients’ predicaments elements of drama—danger, desire and a crucial insight, or epiphany. For patients, a simple doctor’s visit can contain all these elements, said Verghese: “When they come to see you, your patient is engaged in a story. ... There is danger lurking. There is danger and a great desire to walk away with a clean bill of health and a blessing to go on.” Good news or bad, the diagnosis can be a kind of epiphany.

Verghese acknowledged that it’s easy to reduce patients to labels: a ROMI becomes a MIRO who may nonetheless need a CABG (that is to say: a “rule out myocardial infarction” becomes a “myocardial infarction ruled out,” possibly needing a “coronary artery bypass graft”). When doctors use “the voice of medicine,” said Verghese, “they begin to lose sight of the person, and people become almost disease labels. ... Even though it’s the language of medicine you record in the chart, let the voice of the patient stay alive in your imagination.”

By writing, and thus bringing to the surface the feelings that patients’ stories engender, physicians stay in touch with their own humanity. “It’s very difficult to walk through a

life in medicine and see the carnage you and I see and not to experience intense emotions,” said Verghese. But the “macho culture” of medicine encourages doctors to suppress their pain. “We’re in a very secret and lonely business.”

Gastroenterologist Michael C. Bennick, M.D., concurred with Verghese, saying that writing about a painful experience provides “an opportunity to listen all over again. You needn’t shut out that pain; once the blinding light passes, it’s often illuminating,” said Bennick, an assistant clinical professor and the associate chief of medicine, who attended the residents’ reading.

Verghese argued that doctors who repress their feelings not only distance themselves from their patients but also “begin to do that to themselves.” Verghese noted that doctors often guard against pain in dysfunctional ways. “I think of it [medicine] as a romantic pursuit, but I have seen its seamy underbelly,” said Verghese, whose 1998 memoir, *The Tennis Partner: A Doctor’s Story of Friendship and Loss*, tells the story of a medical resident, a close friend, struggling with a powerful addiction to drugs.

Verghese said that reading fiction could help doctors reconnect with deep feelings. As can writing.

“I would encourage everybody to keep a journal. It keeps you healthy,” said Verghese.

—Cathy Shufro

et cetera ...

NEW INSTITUTE TO EXPLORE CORTEX

The Kavli Foundation of Oxnard, Calif., has endowed the Kavli Institute for Neuro-science at Yale University to pursue multidisciplinary studies of the cerebral cortex. Pasko Rakic, M.D., PH.D., the Dorys McConnell Duberg Professor of Neuroscience and professor and chair of neurobiology, will direct the new institute.

“The cerebral cortex is universally recognized as the instrument of human intelligence,” Rakic said. “The goal of the institute is to understand how arrangement of the nerve cells and their synaptic circuits in the cortex embody knowledge of the outside world. We will study how molecular changes in these circuits imprint learning of something new and retain what we already know. We will also explore how our genome constructs the microarchitecture of the cerebral cortex, which is able to carry out high cognitive functions such as language and thought.”

—John Curtis

HOSPITAL IMAGING GOES DIGITAL

Film and paper will become things of the past as the Department of Diagnostic Radiology begins implementing a digital archive of radiological images. The new Picture Archiving and Communication System is a filmless information system for acquiring, sorting, transporting, storing and displaying medical images.

“Imagine how much easier it will be to log on and view images and reports rather than shuffle through all that X-ray film and paper,” said James A. Brink, M.D., interim chair of diagnostic radiology. According to Steve Bencivengo, director of diagnostic imaging at Yale-New Haven Hospital, the move to a digital system allows physicians to access images and radiology reports through a secure hospital network. This new system also creates a permanent, non-degradable archive. Implementation of the new system began last fall and should be complete by December of this year. The system will archive all diagnostic images.

—J.C.

Searching for a second skin

By introducing a blood supply, Yale team overcomes some of the shortcomings of artificial skin.

Before the arrival of artificial skin in the 1970s, medical options for severe dermatological damage (widespread burns, blistering diseases, trauma wounds, extensive surgical excisions) ranged somewhere between scarce and nonexistent. Bandages and ointments were applied, followed by hopes and prayers that the patient's skin, the only self-repairing organ in the body, would heal itself. The lifesaving options provided by artificial skin—human skin equivalents composed of everything from engineered porcine skin to skin from human cadavers—changed the face of dermatology.

Now, a Yale research team led by Jeffrey S. Schechner, M.D. '91, assistant professor of dermatology, is on the verge of changing the face of artificial skin.

"[Artificial skins] were originally marketed as skin replacements, but in reality they functioned as bio-

logical dressings," said Schechner. "They improve wound healing by some measurable amounts but they are not skin replacements."

Schechner's team, whose findings were published in *The FASEB Journal*, suspected that the reason these skin equivalents failed was that they did not develop perfusion—there were no blood vessels to allow blood flow after transplantation. The challenge, then, was to encourage vascularization in this artificial skin; that is, to replicate the mechanism of living skin tissue.

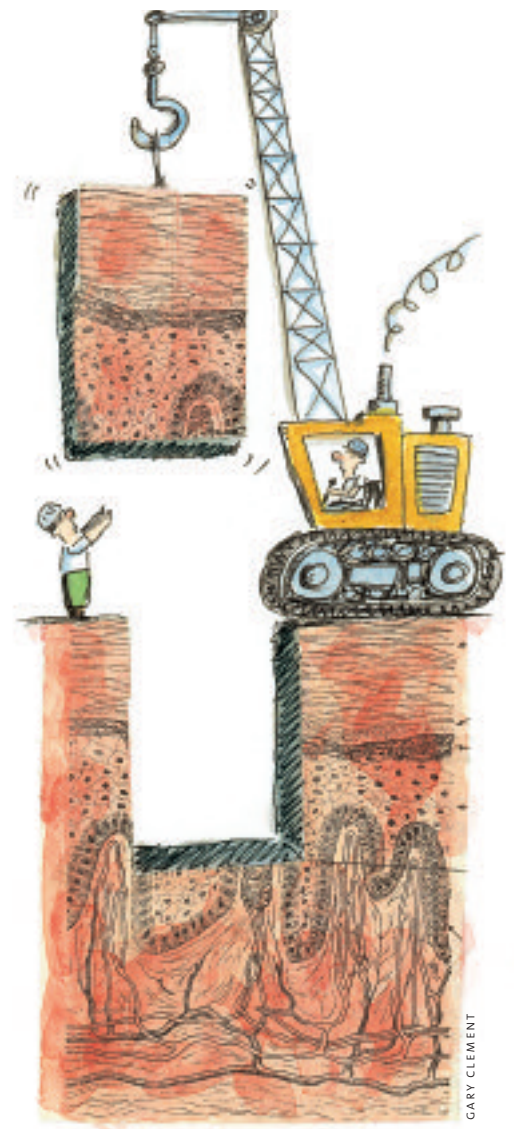
"Without a network of blood vessels, there is inadequate delivery of oxygen and nutrients in the critical posttransplantation period," said Schechner.

The team's experimental scaffold was acellular dermis (human cadaver skin), in which the cells are dead but a supportive matrix remains. This matrix was seeded with cells taken from the veins of umbilical cords which were modified to overexpress the gene *Bcl-2*, a modification that has previously enhanced blood vessel formation. (The *Bcl-2* gene produces a protein that protects cells from enzymes that trigger cell death.) The matrix was then transplanted onto mice in Schechner's lab.

It took more than two years of experimentation before Schechner had his eureka moment. "Within two weeks grafts that contained the *Bcl-2* endothelial cells consistently developed blood vessels. ... and were perfused with mouse blood," he said.

Further, these grafts held, and matured, over an eight-week period.

Schechner is quick to emphasize that theirs is "still an experimental



GARY CLEMENT

model, not a clinical model." Nonetheless, the potential benefit, if it does lead to a clinical product, will dramatically alter the role of artificial skin.

"This has been a huge area of research and clinical efforts for many in the field," said Schechner, who is also chief of dermatology at the VA Connecticut HealthCare System in West Haven. "We all want the best way to dress [burn victims and surgical patients] and decrease the mortality and morbidity associated with these conditions."

—Alan Bisbort

Increased risk of non-Hodgkin's lymphoma linked to hair dye

WARNING: The prolonged use of hair dye, especially permanent black, brown and red, may be hazardous to your health. That's the conclusion reached by Yale researchers in a study published on January 15 in the *American Journal of Epidemiology*. The scientists found that long-term users of hair-coloring products have an increased risk of developing non-Hodgkin's lymphoma, a cancer that attacks the lymphatic system, part of the body's immune system. "We found that people who used permanent dark hair dye for more than 25 years and started before 1980 will have more than twice the risk compared to people who never used hair-dye products," said Tongzhang Zheng, sc.D., associate professor of epidemiology and environmental health. Zheng said the study was prompted by an unexplained jump in the number of non-Hodgkin's lymphoma cases in the last 40 years. In the

early 1970s, there were about 10 cases out of every 100,000 people in the United States. By 1990, that number had increased to 19 cases. Today it's still increasing in the United States and around the world.

The health risks of hair dye have been explored for years, but Zheng says previous studies have been contradictory and inconclusive. He and his research team conducted a six-year, case-controlled study of 601 Connecticut women between the ages of 21 and 84 diagnosed with varying subtypes of non-Hodgkin's lymphoma. The women were asked about the type of hair coloring they used, the length of time they used the products and their age when they stopped. The study included a control group of 717 healthy women matched by race, age and other factors with the case group.

Researchers found the highest risk among users of darker permanent dyes, rather than among those who used semipermanent or temporary dyes. Zheng says that's because darker dyes may contain higher levels of chemicals, and permanent dyes use an oxidizing process that creates new, potentially harmful chemicals.

The good news is that researchers didn't find any increased risk of non-Hodgkin's lymphoma among women who started using hair-coloring products after 1980. This could be because the contents of hair-dye formulas may have changed and become safer, or it could simply mean that not enough time has passed to evaluate the effects on this group. Zheng said further studies would have to be conducted to determine whether post-1980 hair dyes are indeed safer.

Noting that hair color is directly related to image—"how people are perceived and how they perceive themselves," Zheng said that the study results need to be duplicated in different populations. Meantime, users of hair dyes should consider the trade-offs and alternatives, such as semipermanent dyes.

—Jennifer Kaylin

et cetera ...

SOME VETS BETTER AFTER 9/11

After the terror attacks of September 11, 2001, veterans with pre-existing post-traumatic stress disorder (PTSD) showed fewer symptoms—including nightmares, reactions to loud noises and numbness of feelings—than veterans admitted to clinics and hospitals in the previous six months and in previous years, according to a Yale study.

"Anecdotal reports from VA clinics suggest that some veterans, far from being overwhelmed by the horrific destruction, experienced feelings of familiarity, mastery and competence as survivors who had been exposed to horror in the past, but who had experience in coping with the resultant painful memories," said Robert A. Rosenheck, M.D., HS '77, professor of psychiatry and epidemiology and public health. His study was published last year in *Psychiatric Services*.

Although they were far from cured, these patients "seem to have benefited from the increased sense of community, patriotism and national pride across the country," Rosenheck said.

—John Curtis

CUTTING DOWN HELPS SMOKERS QUIT

Cutting down on the number of cigarettes smoked can help older smokers kick the habit, according to a Yale study.

"Most experts will say there is only one way to quit smoking and that is to stop smoking altogether," said Tracy A. Falba, PH.D., associate research scientist in the Department of Epidemiology and Public Health and lead author of the study, which was published in *Addiction*, the journal of the Society for the Study of Addiction. "Cutting down the number of cigarettes smoked, however, seems to promote quitting. Cutting down first may be an option for people trying to quit."

The study used data from a national study of Americans between the ages of 51 and 61, but the concept could apply to smokers of any age, Falba said.

—J.C.





JOSEPH HART

The hormonal component

A new study finds a link between stress, high levels of estrogen and certain mood disorders.

The ancients blamed women's susceptibility to mental illness on low body temperature, which made them prone to "cold" diseases caused by black bile. More recent theories blamed the pressures of balancing a career and family life. A new study suggests that the vulnerability may hinge on hormones.

High levels of estrogen amplify the effects of stress on the prefrontal cortex, an area of the brain associated with mental disorders such as depression and post-traumatic stress disorder, the Yale study found. This could explain why such illnesses occur twice as often in women as in men and why the discrepancy is most marked between puberty and menopause.

For a study published in the May issue of *Molecular Psychiatry*, neurobiology graduate student Becca Shansky and associate professor of neurobiology Amy Arnsten, Ph.D., exposed rats to different levels of stress and then tested them on a working memory task that depends on the prefrontal cortex. Female rats were more sensitive than males to moderate levels of stress, but only when the females were in the high-estrogen phase of their estrus cycle. The same sensitivity was seen in females that had their ovaries removed and were then implanted with time-release estrogen capsules. It was not observed in females that received a placebo instead of estrogen.

Now Shansky is trying to sort out the mechanism underlying the effect. Previous research in Arnsten's lab offers a few hints. Stress releases excess dopamine and norepinephrine in the prefrontal cortex, which activate receptors that cause stress-related impairment, says Shansky. "It's also known that estrogen regulates the expression of these receptors. Now we're trying to see which one or ones are involved in mediating this activity."

Research by another group at the University of Pittsburgh Medical Center has added to the picture. Genetic studies of people with depression turned up an alteration in *CREBI*, a gene that encodes the regulatory protein *CREB*.

"We really perked up when we heard that, because the very intracellular pathways that impair the prefrontal cortex turn on this gene product," Arnsten said, adding that in young women with circulating estrogen, "the activity of the intracellular pathway might be sufficient to cause significant prefrontal cortical dysfunction, leading to depression." Shansky has experiments under way to determine whether female rats with high estrogen are more vulnerable to activation of *CREBI* than those with low estrogen.

"It's very important that our results are not interpreted as saying that women shouldn't take stressful jobs or expose themselves to stress," says Shansky. "It's more a matter of looking at the mechanisms involved to see if we can find new ways of treating depression." It's also important to note that these brain changes occur with *uncontrollable* stress, Arnsten adds. A long history of animal and human research has shown that a sense of control over the stressor protects cognitive and physiological responses.

Though the Yale experiments involve lab animals, they may apply to people, says Arnsten. The genetic studies show changes in the same molecular pathway that we are studying in rats. It is very encouraging."

—Nancy Ross-Flanigan

Yale scientists identify an early line of defense against West Nile virus

In the five years since the West Nile virus made its first appearance in New York, it has spread to virtually all of the contiguous 48 states. There has been an alarming increase in infections and the most serious cases have resulted in death from encephalitis. The Centers for Disease Control and Prevention reported about 9,000 cases of West Nile infection last year—more than double the number reported in 2002—and more than 200 deaths. Among those looking for ways to prevent and treat West Nile is Erol Fikrig, M.D., professor of medicine (rheumatology), who has spent the past 11 years investigating the biology of arthropod-borne illnesses, including Lyme disease.

Most of those infected with West Nile virus experience only mild illness, and some have no symptoms at all. Only about 30 percent of patients, many of them elderly or with compromised immune systems, succumb to the most serious form of the illness characterized by encephalitis. In a paper published last September in *The Journal of Immunology*, Fikrig and his colleagues offered a new explanation for why most patients are able to successfully fight off the virus shortly after infection.

In 2001, Fikrig's group successfully immunized mice against West Nile by injecting the mice with genetically engineered fragments of the protein shell that encapsulates the virus; exposure to the harmless fragments caused the mice to develop antibodies against the virus. But it took three to four days for the vaccinated mice to deploy these antibodies, and clinical experience has shown that time is of the essence in treating West Nile.

Fikrig thought that in mildly ill patients West Nile's relentless pace might have been stalled by some early immune response that clears the virus and gives these individuals time to

marshal an antibody defense. He concluded that understanding these very early immune reactions is crucial to preventing severe illness and death. Talking one day with Joseph E. Craft, M.D., HS '77, professor of medicine and immunobiology and chief of the Section of Rheumatology, Fikrig learned of an immune cell with all the right characteristics.

Craft, who specializes in autoimmune illnesses such as lupus, has extensively studied gamma delta T cells, which are believed to serve as a bridge between innate immunity, the body's first line of defense, and later immune reactions. "We thought that gamma delta T cells might play a role in this early time window," Craft said.

Along with postdoctoral researcher Tian Wang, PH.D., Fikrig tested the hypothesis. Wang injected West Nile into a strain of mice that lack gamma delta T cells and found that these mutant mice were markedly more susceptible to infection than normal animals, and quicker to develop encephalitis and die once infected. When Wang injected activated gamma delta T cells into the mutants, they fought off the disease.

But Fikrig isn't yet sure just how gamma delta T cells mount an early defense against West Nile. With the help of Eileen P. Scully, an M.D./PH.D. student in Craft's lab, Fikrig showed that the cells multiply dramatically and are activated quickly after infection. Scully also demonstrated a link between early and late immune reactions; gamma delta T cells produce interferon gamma, a potent molecule that attacks viruses and stimulates the immune system to produce antibodies.

Next Fikrig plans to see whether gamma delta T cells work in the same way in humans. If the results hold up, pharmaceutical companies might be able to make antiviral drugs that fight West Nile by boosting gamma delta T cell activity or interferon gamma production.

—Trisha Gura

et cetera ...

A SIGNAL THAT THE END IS NEAR

A chemotherapeutic agent used against cancer for more than 30 years has a secondary effect of inducing "death signals" that kill neighboring cells, according to Yale scientists.

The agent, cisplatin, disrupts transcription and replication in tumor cells. It helped cyclist Lance Armstrong recover from testicular cancer and also works against lung, neck, cervical and ovarian cancers. In a study published in the *Proceedings of the National Academy of Sciences* in April, senior author Peter M. Glazer, M.D./PH.D. '87, HS '91, professor and chair of the department of therapeutic radiology, reported that cells affected by cisplatin can produce a death signal that also kills neighboring cells. The phenomenon occurs only when there is a high density of cells that touch each other and communicate through channels called gap junctions. It also appears to require the activation of DNA-PK, an enzyme involved in DNA damage response.

"If we can understand this mechanism," Glazer said, "it will help us to identify potential targets for manipulation."

—John Curtis

ENZYME LINKED TO EPILEPSY

Small amounts of glutamate help the brain to function normally, but high concentrations of the neurotransmitter have been linked to temporal lobe epilepsy (TLE), a common form of epilepsy that is frequently drug-resistant.

A Yale study published in *The Lancet* has found that people with TLE also have low levels of glutamine synthetase, an enzyme that transforms glutamate into the non-toxic chemical glutamine.

"We don't know why glutamine synthetase is decreased in TLE, but this is something we are exploring in our laboratory right now," said lead author Tore Eid, M.D., PH.D., an associate research scientist in the laboratory of Nihal C. de Lanerolle, D.PHIL., associate professor of neurosurgery and neurobiology. "We also want to see if we can stop the seizures and reduce the brain damage in TLE by boosting the activity of glutamine synthetase." If this turns out to be the case, Eid added, then it is possible that glutamine synthetase could be a new target for drug therapy.

—J.C.



Dyslexia's hidden contours

Sally Shaywitz scores a hit with a scientific guide to diagnosing and treating reading disorders.

By Cathy Shufro

At least one child in five has dyslexia, a congenital “wiring glitch” in the brain that makes it hard to master what neuroscientist and behavioral pediatrician Sally E. Shaywitz, M.D., calls “the most elegant and complex of human abilities—learning to read.”

Dyslexia is an inherited problem that cuts across class, race and language, says Shaywitz, professor of pediatrics. Yet “significantly less than half” of American children with dyslexia are even identified. Shaywitz finds this frustrating because researchers have developed reliable diagnostic procedures and evidence-based instruction that, in young students, may even rewire the brain. “A huge gap, almost an abyss, separates what we know and what happens to people with reading problems,” she says.

Shaywitz has helped close that gap through her own research and clinical work and by writing about the science of reading and dyslexia. Her goal, she says, is “making a complex disorder understandable and treatable.” Five years in the writing, *Overcoming Dyslexia: A New and Complete Science-Based Program for Reading Problems at Any Level* (Alfred A. Knopf) has brought Shaywitz sustained national attention since its publication in spring 2003. Soon after, *Time* ran a cover story on the topic that featured Shaywitz prominently. A year later the book, a national bestseller that *Publishers Weekly* called “ground-breaking,” was in its 10th printing; it is also available on tape and CD.

Shaywitz became interested in reading disorders during her pediatrics residency at Albert Einstein College of Medicine in the late 1960s, when she first heard mothers despair because their seemingly bright children were foundering at school. Reading ability is falsely taken as a “proxy for intelligence,” says Shaywitz, and so children with dyslexia often feel stupid or ashamed. Shaywitz has heard many dyslexic adults recount “horrible memories of being asked to read aloud in class.”

And yet, paradoxically, Shaywitz finds that among people who are smart and creative, the “crème de la crème,” a seemingly disproportionate number have dyslexia—medical school professors among them. “I can tell you, a significant proportion of them have been in my office, with the door closed, telling me, ‘I must be the only one,’” says Shaywitz.

Graeme L. Hammond, M.D., professor of surgery (cardiothoracic), who has grappled with dyslexia since childhood, says he was gratified to see that the disorder was finally getting the attention of scientists and the public when he watched Shaywitz discussing dyslexia on *The NewsHour with Jim Lehrer* in 1998. In the epilogue of her book, Hammond joins well-known dyslexics, including novelist John Irving and financier Charles Schwab, in describing the toll it took. Hammond describes how dyslexia, like many other handicaps, helps develop different, perhaps latent, pathways such as perseverance and innovation to accomplish goals.

In her book, Shaywitz describes dyslexia as a phonological weakness. That is, readers with dyslexia have trouble translating letters on a page into sounds they represent. Although people with dyslexia do learn to read more accurately over time, they do not read rapidly or automatically. “What remains for people with dyslexia is how hard they have to work, how much effort they have to put in,” Shaywitz says.

The book also corrects several misconceptions. Writing letters backwards or transposing them is common among novice writers and doesn't suggest dyslexia. And although schools identify three boys with dyslexia for every girl, researchers find no significant difference in the prevalence of reading disabilities in girls and boys. But boys get more attention—they tend to be more rambunctious—while many struggling girls go unnoticed and unidentified. The book includes checklists of signs of dyslexia and suggests which tests are effective for diagnosis. Tests for accuracy

Sally Shaywitz has, through her research and clinical work, advanced the study of dyslexia, a phonological weakness that makes it hard to translate symbols on a page into the appropriate sounds.

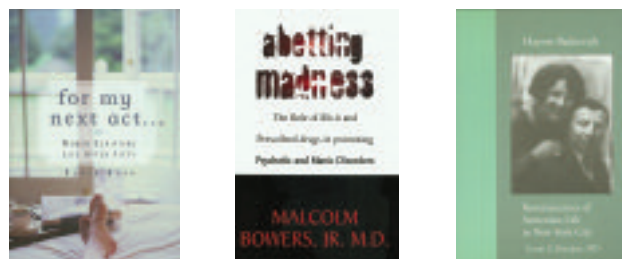


may miss dyslexia, especially in teenagers and adults; testing fluency is essential.

Shaywitz says educators have remained largely ignorant of the huge advances in understanding dyslexia. “The whole notion that there’s science or evidence hasn’t been part of the culture, so teachers haven’t been provided with the tools.” Furthermore, schools often provide only unproven, sporadic remediation for a chronic problem.

The book draws on a decade of laboratory research at Yale on differences in brain function between skillful and struggling readers. Shaywitz conducted those studies in partnership with her husband, Bennett A. Shaywitz, M.D., professor of pediatrics and neurology. (Both Shaywitzes are also on the Child Study Center faculty.) World-renowned leaders in the use of imaging to study reading, the Shaywitzes have discovered what they call “functional lesions” in the left occipitotemporal and parietotemporal regions (behind the left ear). These lesions correspond exactly with physical lesions in people who have lost the ability to read because of a stroke or brain tumor. They discovered this correspondence using functional magnetic resonance imaging, studying metabolism in the brain to show which parts of the brain readers use as they decode texts. **YM**

Bookshelf is a new column in *Yale Medicine* focusing on Yale authors and books of interest to the medical school community. Send ideas to Cathy Shufro at cathy.shufro@yale.edu.



For My Next Act: Women Scripting Life After Fifty

by Karen Baar, M.P.H. '81 (Routledge Press) Speaking partly from her own experience of a midlife divorce, Baar describes how women are examining their life experiences, taking a critical look forward and shaping plans for their futures.

Dermatology

by Jean L. Bologna, M.D. '80, HS '84, professor of dermatology, Joseph L. Jorizzo and Ronald P. Rapini (Mosby) This two-volume reference set encompasses the current knowledge in the field. Covering adult and pediatric clinical dermatology and dermatologic surgery and therapy, it provides evidence-based support for therapeutic recommendations.

Abetting Madness: The Role of Illicit and Prescribed Drugs in Promoting Psychotic and Manic Disorders

by Malcolm B. Bowers Jr., M.D., HS '65, professor emeritus of psychiatry (Xlibris Corporation) The author argues that vulnerability to major psychoses is related to genetic factors that may be set in motion by the use of prescribed stimulants and antidepressants as well as illegal drugs, including cannabis, cocaine and LSD. Bowers suggests an approach to the prevention of some psychotic disorders based on this hypothesis.

Hayots Badeevuh: Reminiscences of Armenian Life in New York City

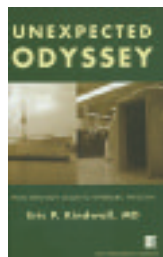
by Levon Z. Boyajian, M.D. '56, HS '60 (Tadron Press) This narrative revolves around the Boyajian family and their circle of friends in Washington Heights, N.Y., in the aftermath of the Armenian genocide of 1915. Boyajian gives us a view of his life as a child and adolescent, recounting personal dramas and tragedies and anecdotes about his community through two world wars and the Depression.

Living Outside Mental Illness: Qualitative Studies of Recovery in Schizophrenia (Qualitative Studies in Psychology Series)

by Larry Davidson, Ph.D., associate professor of psychiatry (New York University Press) Davidson offers first-person narratives illuminating people's experiences of schizophrenia and recovery. The author shows how listening to people diagnosed with schizophrenia can affect clinical practice and social policy.

Drugs 101: An Overview for Teens

by Margaret O. Hyde and John F. Setaro, M.D., HS '86, associate professor of medicine (cardiology) (Twenty-First Century Books) This book provides teenagers with an overview of drugs and drug abuse, offering straightforward information about illicit drugs. The authors discuss the emotional, physical and psychological ramifications of drug use.



Investigative Pathways: Patterns and Stages in the Careers of Experimental Scientists

by the late Frederic Lawrence Holmes, PH.D., former Avalon Professor of the History of Medicine (Yale University Press) Holmes, chair of the Section of the History of Medicine from 1979 to 2002, examines the careers of six pre-eminent scientists: Antoine-Laurent Lavoisier, Claude Bernard, Hans Krebs, Matthew Meselson, Franklin Stahl and Seymour Benzer. Holmes finds unifying themes as he explores the motivations for their research, how they asked questions and solved problems, and the breakthroughs they achieved.

Unexpected Odyssey: From Merchant Sailor to Hyperbaric Physician

by Eric P. Kindwall, M.D. '60 (Best Publishing Company) Kindwall chronicles his varied career which has included not only studies at Yale and Harvard, but also submarine school, service in the merchant marines and the CIA and a professorship in hyperbaric medicine.

Pediatric Complaints and Diagnostic Dilemmas: A Case-Based Approach

by Samir S. Shah, M.D. '98 and Stephen Ludwig, M.D. (Lippincott Williams & Wilkins) Through the exploration of 119 actual cases, the authors show how to recognize key diagnostic patterns for more accurate evaluation of pediatric illness and injury.

George Beadle, An Uncommon Farmer: The Emergence of Genetics in the 20th Century

by Paul Berg and Maxine F. Singer, PH.D. '57 (Cold Spring Harbor Laboratory Press) The authors provide a biography of the Nobel Prize-winning "giant of genetics" and president of the University of Chicago. Beadle's work from 1940 to 1960 marked the transition from classical genetics to the molecular era.

Carlos Montezuma, M.D., A Yavapai American Hero: The Life and Times of an American Indian, 1866-1923

by Leon Speroff, M.D., HS '66 (Arnica Publishing) This book documents the life of one of the first Native American physicians. A Yavapai Indian, Montezuma was taken in the 1870s from his family as a boy by Pima Indian warriors, who sold him to an itinerant photographer. He ended up in Chicago, where he took advantage of unexpected educational and social opportunities, ultimately becoming a doctor and championing his tribe's land and water rights.

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

Medical library makes the transition from print to electronic journals

These days a physician reading a medical journal is as likely to be peering at a monitor as paging through a magazine. Nonetheless, Yale medical librarian Daniel Dollar, M.L.S., says libraries are still in the "horseless-carriage days" when it comes to making the switch from paper to pixels.

For instance, librarians still distinguish between an "online journal" and a "journal." "One day we'll call them all journals," says Dollar, digital resources librarian at the Harvey Cushing/John Hay Whitney Medical Library.

Not that physicians and researchers are still riding horses. One service that links citations to full-text articles tracked nearly 190,000 electronic requests for articles at Yale in 2003. That figure represents only "the tip of the iceberg," Dollar says, because articles can also be downloaded from a journal site; through library subscription services, such as MDConsult; through the library's online catalog; or through its listing of e-journals. The library subscribes to 3,300 medical journals online and 2,300 in print. Most of those titles overlap, but some journals are available in only one form or the other.

Electronic journals add to the library's costs, for two reasons. First, the library generally pays a surcharge of 5 to 15 percent to add electronic access to a journal that the library already carries in printed form. Second, many readers who once paid for their own copies of journals now rely on electronic access and have dropped their subscriptions. In response, publishers are charging libraries more. "There's a reallocation of funds," says Dollar. "We have titles that have gone from a few hundred dollars to several thousand dollars."

Online journals have many advantages, Dollar says; they take up no shelf space and are accessible remotely. "Folks in the hospital don't have to run over here to get a full text of an article," says Dollar. And online articles sometimes include raw data not offered in print. But print articles also have their virtues: they may have better graphics, the ads they contain keep subscription costs down, and the reader's ability to page through an entire issue may lead to serendipitous discoveries.

By far the greatest advantage of print journals is that it's obvious how to archive them: simply bind and save them. It's not nearly as clear how to archive electronic journals. Who should be responsible? Libraries? Publishers? If an electronic journal ceases publication, what happens to its archives?

To grapple with these questions, Yale has joined a Stanford University-based consortium of publishers and libraries called LOCKSS ("Lots of Copies Keep Stuff Safe").

"We're in transition," says Dollar. "It's exciting, because we get to reinvent ourselves. But it's a time-consuming process, and we may stumble along the way. ... Essentially we're taking the library and putting it on a desktop."

—Cathy Shufro

In Circulation is a new column focusing on Yale's Cushing/Whitney Medical Library.

**VAMSI MOOThA****Merging data sets to fight human disease**

The sequencing of the human genome has spawned a wealth of knowledge, much of it now available online. According to Vamsi K. Mootha, M.D., a post-doctoral fellow at the Broad Institute in Cambridge, Mass., this is making possible new approaches to medical research. “The real challenge,” Mootha said in a talk sponsored by the Department of Genetics in March, “will be to integrate these data sets with each other as well as with what we know from the previous literature.”

As an example, Mootha described his participation on an international team that sought the gene mutation responsible for Leigh syndrome, a fatal metabolic disorder that is prevalent in a region of French Quebec. The team had first determined that the culprit gene was one of 30 on chromosome 2. “The critical feature of the disease suggested that there might be a mitochondrial pathology,” Mootha said. Using this clue, the team analyzed RNA data sets and a map of mitochondrial peptides to home in on their target. “Using relatively freely available data we were able to identify the candidate gene,” Mootha said.

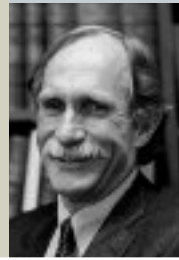
—John Curtis

**MICHELE BARRY****Biomedical research for the world’s neediest**

In 1990 a drug called eflornithine came on the market to treat African sleeping sickness. But a drug marketed to impoverished Africans would never turn a profit, so in 2000 it was adapted for another, less urgent, use—removing facial hair. Then, said Michele Barry, M.D., HS ’77, an international campaign by groups such as Médecins Sans Frontières (MSF) shamed the drug company into restoring the drug’s original mission of treating sleeping sickness.

Only 10 percent of worldwide biomedical research spending is devoted to diseases that afflict 90 percent of the world’s people, Barry told a March meeting of the Justice and the Allocation of Health Care group, a seminar series organized by the Interdisciplinary Bioethics Project. Barry, a professor of medicine and public health and director of the Office of International Health, says MSF has formed an international partnership to develop medicine for three very neglected diseases that infect millions of people around the world—Chagas disease, African sleeping sickness and leishmaniasis. The partnership, the Drugs for Neglected Diseases Initiative, hopes to have as many as seven drugs available within 12 years. Barry, president of the American Society of Tropical Medicine and Hygiene, has coordinated her society’s cooperation toward achieving this goal.

—J.C.

**PETER AGRE****Stumbling across water channels, and a Nobel Prize**

In two talks on campus in March Peter C. Agre, M.D., noted with amusement that when he was applying to medical schools, Yale turned him down. And, in an equally self-effacing vein, when he described the work that won him a share of the 2003 Nobel Prize in chemistry, he attributed it to “blind luck.”

Agre, a professor of medicine and biological chemistry at Johns Hopkins University School of Medicine, described his groundbreaking research in similar terms at the 12th annual Robert W. Berliner Memorial Lecture and at the 56th annual meeting of the Associates of the Cushing/Whitney Medical Library. “We weren’t even looking for water channels,” he said of his discovery that explained how water crosses biological membranes. Agre was studying Rh blood group antigens and became curious about a mysterious protein that kept turning up in his experiments. He detoured from his original research and identified the first of a family of water channel proteins, which he dubbed aquaporins.

“It’s sort of like driving in a remote part of Vermont and coming upon a city of 200,000 people that’s not on the map,” he said.

—J.C.



JOHN CURTIS (4)

BRIDIE ANDREWS**With acupuncture, an integrated view of the body**

Acupuncture entered the American consciousness in 1972, when a journalist on President Nixon’s trip to China fell ill with appendicitis. Soon after, an account of acupuncture’s relief of his post-operative pain and swelling was in the news.

Early in the 20th century, however, acupuncture was seen, even in China, as a folk remedy. In a talk in March sponsored by Colloquia, Workshops and Lectures in History of Medicine and Science, Bridie J. Andrews, PH.D., assistant professor of the history of science at Harvard, said it took a young Chinese doctor to make it acceptable. In the 1920s Cheng Dan’an turned to acupuncture to treat his own back injury, for which the Western medicine he admired could only prescribe opiates. Intrigued by the success of the treatment, he applied his knowledge of anatomy to acupuncture and in 1932 published a book showing new acupuncture points. In 1993 magnetic resonance imaging suggested that certain biochemical pathways are affected by acupuncture. “Biomedical research into acupuncture,” Andrews said, “is producing a much more integrated view of body function, which is something that biomedicine has been striving for for some time.”

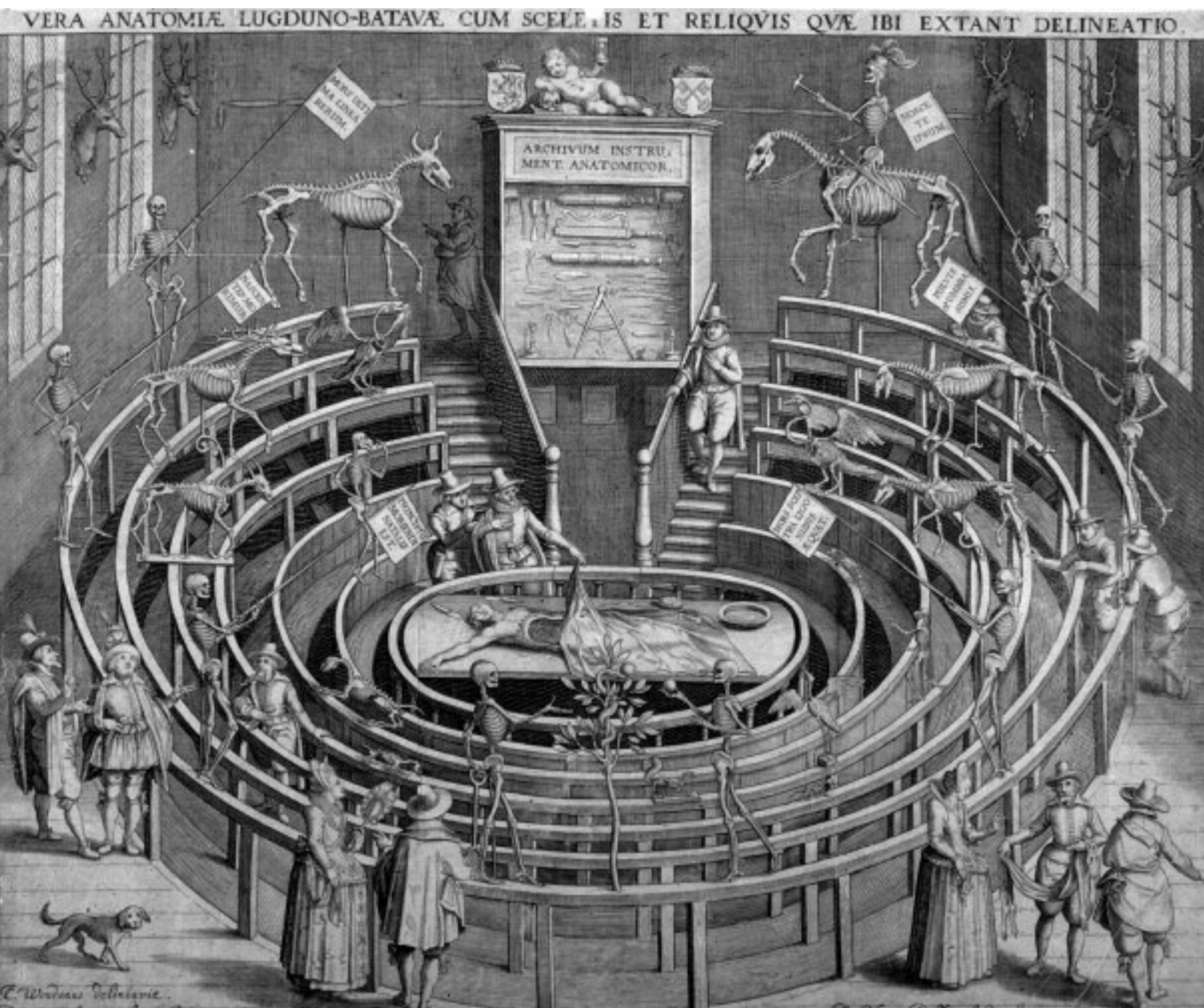
—J.C.



Homage to the crown prints

By Cathy Shufro

At 50, one of the world's best collections of medical imagery draws on humor and history.





LEFT Sigmund Freud once hung a copy of this popular lithograph, *Une Leçon du Docteur Charcot à la Salpêtrière*, in his consultation room in Vienna. Part of a collection of prints assembled by Yale psychiatrist Clements C. Fry, M.D., it shows a hypnotized woman during a lecture on hysteria.

OPPOSITE TOP Peter Arno's charcoal and watercolor cartoon depicting a psychiatrist and his patient appeared in *The New Yorker* in 1936.

OPPOSITE BOTTOM *Anatomical Theatre at Leiden* was sold as a souvenir at the University of Leiden in the Netherlands. The well-dressed men and women touring the dissection hall in this 1610 engraving by W. Swanenburg show that the upper classes of 17th-century Europe were interested in anatomy.

A woman diagnosed with hysteria is the centerpiece of a popular lithograph, a copy of which once adorned Sigmund Freud's consultation room in Vienna. The 1887 print shows the hypnotized woman before a roomful of men. Two assistants reach out to break her fall; beside her, French neurologist Jean-Martin Charcot lectures about hysteria.

Une Leçon du Docteur Charcot à la Salpêtrière is part of the collection of prints on medical topics that Yale psychiatrist Clements C. Fry, M.D., began assembling in the early 1930s. When Fry, the former director of student mental health at Yale, died in 1955, he left his 2,000 prints to the university. Now nearing its 50th anniversary, it is one of the world's largest and most prominent collections of medical prints.

Fry selected prints as records of medicine's history and public image; for their rarity; and—as often as not—because he found them funny: a 1937 *New Yorker* cartoon by Whitney Darrow Jr. shows a woman dressed as Napoleon, complete with sword, campaign hat and oversized epaulets. Her hand tucked into her jacket, she faces a balding psychiatrist across the desk, who tells

her: "It's a pity I didn't get to your case earlier, Mrs. Perkins."

An 1859 lithograph by Honoré Daumier combines satire with historical evidence that lay people tried their hands at the novel therapy of hypnotism. A man dangles a huge diamond ring above the face of a mesmerized matron. "The new entertainment at parties," the caption reads, "or, how to amuse and make a fool of yourself in public without a quarrel."

By day Fry, who joined the faculty in 1926 and pioneered mental health for students, ran the Division of Mental Hygiene at the Department of University Health. He devoted his leisure time to collecting, says Susan E. Wheeler, M.A., curator of the Clements C. Fry Collection of Medical Prints and Drawings, which is housed in the Cushing/Whitney Medical Library. "This was his avocation, his relaxation. To be a collector was very typical in that era in this environment," says Wheeler, whose book, *Five Hundred Years of Medicine in Art* (Ashgate), catalogs the collection.

Fry considered his bachelor apartment at Trumbull College a sort of medical museum, but his intent was less scholarship than pleasure. "What I try to do is to get the things I can have fun with," he wrote to a print seller in the 1930s.

Several recurring themes appear in the satirical prints that interested Fry, says Wheeler. "One is the ineffectiveness of the doctor. ... Another is the cost of medicine. What you also see in the satirical prints is people making fun of pain—laughing at the pain of illness and the pain of therapy."

Although Fry collected works by Rembrandt and Hogarth, artistic merit alone wouldn't justify a place in his collection. He wanted prints that depicted the history of medicine. For example, *Anatomical Theatre at Leiden*, shows more than a dozen well-dressed men and women wandering through the dissection hall. The rare 1610 engraving by W. Swanenburg demonstrates that educated people of the early 17th century were fascinated by anatomy.

Fry's spirit lives on in the library's continuing effort to keep the collection current.

"The collection is a living collection," says Wheeler.

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

A boxed set of 10 note cards representing five satirical prints from the Fry collection is for sale for \$10 at the medical library circulation desk. The cards can be ordered by mail for \$12 per box by telephoning the library at 203-785-5352.

Mapping the social mind



The mysteries of autism, an often-intractable disorder of aloneness, are starting to give way to discoveries by Yale scientists. Their hope is that early intervention will help autistic children develop social ability and a better sense of their place in the world.

By Peter Farley
Photographs by Daphne Geismar



Brendan Lyle, who turns 5 in August, has made progress since his diagnosis of autism at age 2. “When he was first diagnosed, he was pretty indifferent to people. He was very much in his own world, and very quiet,” according to his mother, Pamela Lyle. “Through constantly working with him, I think we’ve exposed him to the social world and he really, really does well with it now.” At left, Brendan romps with his father, Christopher, on a trampoline at home in Orange, Conn.



Humans share such solid bonds with family, friends and community that we can scarcely imagine what it might be like to be a tiger, or a spider or any of the myriad of Earth's creatures that lead solitary lives. Many mammals leave their kin forever after weaning and, aside

from sporadic encounters with mates, live out their entire lives in solitude. In what seems to us an utterly alien life cycle, the hatchlings of some species are left to their own devices at birth: emerging from the safety of the egg, they confront the wide world all alone.

Relationships are so fundamental to our nature that, since the dawn of child psychology, researchers have wondered at the immensely powerful innate attachment of infants and parents, the very first social link forged in human life. Arnold L. Gesell, M.D., PH.D., the prolific scientist and scholar who founded the Yale Child Study Center, used the relatively new medium of cinematography to analyze infant behavior beginning in the 1920s; he noted that even a newborn baby will turn its head toward the sound of its mother's voice and, when lifted from the crib, will naturally mold its tiny body to conform to hers.

As Fred R. Volkmar, M.D., the Irving B. Harris Professor of Child Psychiatry, Psychology and Pediatrics in the Child Study Center, says, "Gesell saw that, for the child, the parent's face and voice are the most important things in the world."

However, in a now-classic 1943 article, the Johns Hopkins psychiatrist Leo Kanner, M.D., described a group of children who were puzzling exceptions to this rule. These children, whom Kanner dubbed "autistic," had marked difficulties with language; engaged in repetitive, bizarre behavior; and—most poignantly—were inexplicably inclined toward aloneness. Kanner's autistic patients were largely indifferent to their parents and, as they grew, to people in general. Instead, they seemed inexorably drawn to objects.

"Every one of the children, upon entering the office, immediately went after blocks, toys or other objects, without paying the least attention to the persons present," Kanner wrote. "It would be wrong to say that they were not aware of the presence of persons. But the people, so long as they left

the child alone, figured in about the same manner as did the desk, the bookshelf or the filing cabinet."

Sixty years on, autism remains among the most mysterious and intractable of psychological disorders. Most psychological treatments depend on communication, and the insistent inwardness at the core of the condition has stymied generations of researchers and therapists.

But a newfound hopefulness is in evidence at the Child Study Center. Volkmar, an expert on the diagnosis and classification of autism, is also something of a scientific impresario: over the past several years he has assembled an autism research team as diverse and productive as any in the world. The group's efforts received recognition from the National Institutes of Health in 2002, in the form of a \$5 million grant as part of the NIH's Studies to Advance Autism Research and Treatment (STAART) initiative. Buoyed by a surge in federal funding and public awareness and inspired by new findings on the effectiveness of early intervention and the changeability of the human brain, these Yale researchers are using cutting-edge technologies—functional neuroimaging studies, eye-tracking devices and specially designed computer games—to shed new light on the riddle of autism.

"Refrigerator mothers" no more

The Yale Child Study Center is set back some distance from South Frontage Road at the northern fringe of the medical school campus, hard by the noise and bustle of Route 34. Only a small sign and an unassuming brick facade are visible from the road, so Volkmar urges visitors to watch for "the Mayan temple," his fanciful name for the colossal parking garage just across the street.

But the center is a landmark of the first order in the study of child development. Since its founding in 1911 by Gesell, the father of the field in America, the center's mission has been to bring child psychiatrists, pediatricians and psychologists together under one roof—an all-embracing approach to child development in which research is tightly intertwined with protecting children's health and welfare.

The melding of research and treatment infuses day-to-day life at the center with a distinctive vigor. It is a place where children—patients, research subjects or both—chat excitedly in waiting rooms piled with toys and backpacks, while scientists, physicians, parents and staff hustle through a multistory warren of offices, labs and clinics.

OPPOSITE AND BELOW

Hailey Lyle seems to relate best to others when engaged in rough-and-tumble play, such as this session with her father, Christopher Lyle, in the family's backyard.

One particularly circuitous corridor in the center leads to Volkmar's office, a spacious, book-lined room with a wall of windows that looks out onto a sunlit courtyard. An affable man who favors hiking boots and a slightly loosened tie, Volkmar led the group that redefined autism in the latest edition of the American Psychiatric Association's *Diagnostic and Statistical Manual*, or *DSM*, the bible of psychiatric diagnosis.

For decades, Volkmar says, autistic children and adults were routinely misdiagnosed as mentally retarded or schizophrenic. During the 1950s and 1960s, when psychoanalysis was ascendant, the pain and desperation felt by parents of autistic children were compounded by certain prominent child psychiatrists, most notably Bruno Bettelheim of the University of Chicago's Orthogenic School, who declared that the condition was caused by inadequate parenting, and in particular by cold, aloof "refrigerator mothers."

By 1980, when autism was first formally recognized in the *DSM*, it had become generally accepted that the condition is caused by some breakdown in normal neurological development, but parents' emotions can still be whipsawed between hope and despair by what Volkmar calls "the flavor of the week"—a regular stream of media coverage of purported cures or breakthroughs. In 1998, for example, it was widely reported that some autistic children experienced dramatic recoveries after receiving injections of synthetic secretin, a gut hormone. However, recent clinical trials of the therapy have been inconclusive at best.

With Volkmar's guidance, the latest edition of the *DSM* reflects the current view that autism disorders comprise a spectrum of conditions that fall along a continuum of severity. At one end of the scale is full-blown autism, with major language difficulties; repetitive, sometimes self-destructive



behavior; virtually complete social isolation; and profound intellectual disability. At the other end is Asperger's syndrome, a condition in which patients are verbally fluent and sometimes highly intelligent, but in many cases are socially disabled that, in Volkmar's words, "they couldn't walk into a McDonald's and get a cheeseburger and change." Patients whose symptoms fall somewhere in between these two extremes make up the less-well-defined diagnostic realm of PDD-NOS or "pervasive developmental disorders, not otherwise specified."

The autism spectrum disorders are four times more common in boys than girls. Although many more children are diagnosed with these disorders today than 20 years ago, Volkmar believes the rising number of cases reflects better diagnosis and a higher level of awareness of autism among physicians and the general public rather than a true increase in incidence of the disorder.

Many autistic children and adults possess uncanny abilities, but usually in one narrow—and often quite arcane—realm. Some are musical or artistic prodigies; others can recite from memory the complete train schedules from countries they have never set foot in, or describe what the weather was like in a given place for any day in recorded history. But Volkmar says that few patients have the wide range of extraordinary skills so memorably put to use by Dustin Hoffman in his otherwise accurate portrayal of the autistic Raymond Babbit in the 1988 movie *Rain Man*.

Finding each patient's place on the autism spectrum is challenging because the symptoms and developmental course of patients in all three categories vary tremendously. "If you were in a room with 100 autistic patients, first you'd be struck by how different they are from one another, but then you would quickly realize how similar they are," Volkmar says. And what's similar in patients across the spectrum is an overpowering disability in social interactions.

Do you see what I see?

The social disabilities at the heart of the autism spectrum are brought vividly to life in a videotape made at the Child Study Center's developmental disabilities clinic by Ami J. Klin, Ph.D., Harris Associate Professor of Child Psychology and Psychiatry. In one clip, an autistic toddler intently plays with a toy while Klin moves into her field of vision until his face is only inches from her eyes. Because of what Klin calls

the "gravitational pull" of objects on the autistic child's mind, the girl behaves as if she were completely blind to him. But her vision is perfect: we soon see her crawling excitedly toward a tiny orange candy on the floor that she had spied from across the room.

Given the primacy of social interactions in human life, scientists have proposed that we have evolved special brain mechanisms for perceiving faces. In experiments, normal subjects perceive faces more quickly than objects, apparently because faces are seen as wholes, whereas objects are first seen as a collection of component parts. However, it has been known since the late 1970s that autistic subjects see objects just as quickly as faces. For them, it seems, faces have no special status—they hold no more interest than chairs, spoons or airplanes.

Until recently, it was difficult to develop these findings further. In collaboration with Warren R. Jones, a graduate student and research associate in the Child Study Center, Klin has probed more deeply into this phenomenon using a technology known as eye tracking, which allows experimenters to precisely monitor where a person is looking at any given time (See sidebar, p. 25). When Klin and Jones showed emotionally charged excerpts from Mike Nichols' 1966 film *Who's Afraid of Virginia Woolf?*, for example, normal subjects tended to focus on the actors' eyes. However, autistic viewers fixed their gaze on mouths or, in many cases, on incidental objects in the periphery of the scene; while Richard Burton and Elizabeth Taylor kissed passionately in a *Virginia Woolf* clip, one autistic viewer pored over a light switch on a distant wall.

For other eye-tracking experiments, Klin and Jones have adapted the motion-capture technique used to create computer-generated characters in motion pictures (such as the Gollum character in the *Lord of the Rings* movies) to generate minimalist "point-light" animations of actors playing patty-cake or engaged in some other activity that appeals to children. As still images, point-light displays look like star maps, a random collection of white dots on a dark background. But when they move, normal subjects instantly and irresistibly recognize a human figure. Klin and Jones placed a correctly oriented point-light animation side by side with an upside-down animation on a split computer screen, and eye tracking revealed that normal children prefer to watch the correct version. However, autistic children show no preference whatsoever,

indicating that they do not recognize the human being represented by the dots.

Our social instincts are so deeply rooted that they can be triggered even in the absence of faces or suggestions of human figures. In a separate line of work from his eye-tracking studies, Klin has been using a short film devised by the psychologists Fritz Heider and Marianne Simmel during the 1940s that features a few simple geometric shapes—a big triangle, a circle, a smaller triangle—moving about the screen. Heider and Simmel discovered that, when asked to describe this film, people almost invariably impose a social interpretation on it; instead of speaking in terms of inanimate shapes passively changing positions, viewers invent stories in which, for example, a chase might be taking place between a bullying big triangle and a terrified little triangle. But according to Klin, autistic subjects do not personify the shapes in the film, and rely instead on purely physical metaphors in their descriptions.

A brain space for faces?

Given the dramatic differences in autistic patients' behavior compared to that of other individuals, one would expect that there would be conspicuous differences between autistic and nonautistic brains. But according to neuroimaging expert Robert T. Schultz, PH.D., associate professor in the Child Study Center, finding such markers has been surprisingly difficult, and only a few studies in the neurobiology of autism have stood the test of time.

Neuroscientists have known since 1997 that pictures of faces, but not pictures of simple objects, activate a small patch of the cortex by the right ear that has come to be known as the fusiform face area, or FFA. But when Schultz and his colleagues showed pictures of faces to autistic patients in a 2000 study using functional magnetic resonance imaging (fMRI), they found little activation in the FFA; instead the study revealed a high level of activity in nearby brain regions involved in recognizing objects.

Schultz's results have since been confirmed by at least six other research teams—a rare instance of consensus in an area where solid findings have been elusive—and they provide the tantalizing beginnings of a neural explanation for the object-centered worldview first described six decades ago by Kanner and so clearly revealed in Klin and Jones' eye-tracking studies. But Schultz isn't certain whether the FFA

Brendan Lyle didn't speak at all until he went to school. He first communicated through American Sign Language and has developed a vocabulary of about 100 words. Now he also has well over 100 spoken words at his command, but has difficulty enunciating them.

"About 25 percent are easily understood by the general public; I understand them all," says his mother, Pamela Lyle. "This is a child I never thought would speak, and now he's doing pretty well." Mother and son kiss through the mesh surrounding the trampoline.



deficit he found actually causes social disability by itself or reflects some wider disturbance in brain circuitry.

In an intriguing new collaboration, Schultz and Klin are using Heider and Simmel's film of geometric forms in fMRI experiments to sketch out a map of the entire "social brain," Schultz's term for an interconnected network of brain regions—including the amygdala, the medial frontal cortex, the superior temporal sulcus and the FFA—that seem to be crucial for normal human social interaction. In a recent study with normal subjects, Schultz and Klin found that perceived social interactions between the geometric forms strongly activate all the components of the brain's social network, including the FFA—a quite surprising result since the film contains no images of faces. Based on these results, Schultz and Klin believe that "face area" may be a misnomer for the FFA: this brain area may not just be sensitive to faces, but it may be a more general-purpose area for perception of and knowledge about people and social interactions, however abstract. Schultz believes it may occupy a central place in the circuitry of the social brain.

Schultz's former Yale colleague Isabel Gauthier, PH.D., now at Vanderbilt University, has also argued for a broader view of the FFA. Gauthier has shown that, in people who have special expertise, such as car enthusiasts or bird-watchers, the FFA can be activated by pictures of the objects of their affection, whether they be T-birds or warblers. Moreover, along with Michael J. Tarr, PH.D., of Brown

University, Gauthier has shown that this “expertise effect” can be produced in normal adults by intensively training them to recognize subtle differences between previously unfamiliar objects. Gauthier and Tarr used “Greebles,” doll-like objects that look almost identical to the casual observer. As one would expect, when the experiment began, pictures of Greebles did not activate the FFA, but once Gauthier and Tarr’s subjects were “Greeble experts” who could quickly and reliably tell one Greeble from another, the FFA was significantly activated whenever they saw a picture of a Greeble.

In the clinic, a social-skills primer

Gauthier and Tarr’s Greeble work elegantly demonstrates that the FFA is a changeable structure, which may have direct implications for the treatment of autism. Schultz believes that by adulthood the components of the social brain in autistic patients may be severely weakened by a lifetime of social deprivation, but inspired by Gauthier’s work, he is working with colleagues at a STAART-funded clinic housed in the Temple Medical Center in New Haven to find out whether very early intervention and social training can head off some of this cumulative neurological fallout.

“We are betting on brain plasticity,” says Katarzyna Chawarska, PH.D., an associate research scientist who heads up an ambitious screening program at the clinic. Chawarska is refining eye-tracking techniques to diagnose autism during infancy in the hope that the brains of very young autistic children might still be malleable enough to absorb what she calls “pivotal” social skills. “We treat each and every child as a child with endless potential,” she says.

As newly diagnosed children enter treatment at the STAART clinic, Associate Research Scientist Cheryl Klaiman, PH.D., will eventually teach them to use Let’s Face It!, a computer game created in collaboration with James W. Tanaka, PH.D., of the University of Victoria in Canada, that has been specially designed to hone autistic kids’ face-recognition skills. Because it is difficult to perform fMRI studies with very young children, especially autistic children, Klaiman and Schultz plan to assess whether Let’s Face It! is inducing brain changes by measuring event-related potentials, electrical signals that are detectable on the scalp with equipment similar to that used in the more familiar EEG technique. At the same time, Klin and Jones plan to use eye tracking to see whether tools such as Let’s Face It! can

change young autistic children’s performance on their face-perception and point-light display tasks.

The team hopes that developing “social expertise” through early intervention might gently steer autistic children away from isolation and coax them toward the rich social world that is their human birthright. With an optimism tempered by decades of grappling with this most stubborn of disorders, Volkmar says frankly, “We don’t know if it will work, but we’re going to give it our best shot.”

Keeping science grounded

Science proceeds deliberately, and it will be some time before the members of the group know whether they can make a real impact on autism by transforming the social brain. In the meantime, autistic children and their families remain locked in a difficult daily struggle. Lawrence D. Scahill, PH.D., an associate professor in the Child Study Center and the School of Nursing and a pioneer in pediatric psychopharmacology, has focused his energies on rigorously testing existing drug treatments for autism. Scahill and his colleagues recently published a landmark clinical study of risperidone, an antipsychotic drug, which provided the first conclusive evidence that the drug can successfully control violent tantrums in autistic children.

Scahill says that the \$5 million STAART grant is “a real shot in the arm” that buys much-needed certainty in his field, which has long been plagued by studies too small and too poorly designed to draw firm conclusions. “The government is now funding autism research at a level where we can get sample sizes that are respectable,” Scahill says. “That’s a real first. Now we can not only answer the primary scientific questions, but we may finally be able to provide real guidance to clinicians on how to treat these kids.”

Klin would agree. The greatest strength of Yale’s autism group, he says, isn’t in tools or techniques, or even in the talents of the group’s individual members. What is most important, he says, is the unusual fusion of clinical work and research at the Child Study Center, which keeps the team’s science firmly grounded in the real lives of patients and their families.

“Our very best hypotheses come from our observations of individual children,” Klin says. “We try to match science with disability, one child at a time.” **YM**

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AMI KLIN



BRIAN SCASSELLATI



AMI KLIN



ROBERT SCHULTZ

Liz Taylor, “Men of Stars” and humanoid robots: new tools to study autism

The eyes may or may not be the gateway to the soul, but they are providing Yale researchers Ami J. Klin, PH.D., Warren R. Jones and Fred R. Volkmar, M.D., with an unprecedented glimpse into the workings of the autistic mind, thanks to lightweight eye-tracking devices and motion-capture systems like those used by Hollywood directors to create computer-generated characters.

Autistic children and adults are often less threatened by technological devices than they are by people, and many are infatuated with television programs and films. In their eye-tracking work, Klin and Jones have benefited from both tendencies in naturalistic studies that mirror real-world behavior better than typical, highly controlled psychological experiments.

Eye tracking allows scientists to show a film or still image and see precisely where in the frame the subject is looking. The newest head-mounted trackers are relatively inexpensive, and subjects—even infants—can move their heads freely during experiments. Experimenters secure a lightweight rig, which looks a bit like a futuristic baseball cap, to a subject's head with a comfortable leather headband. Two metal tubes, each equipped with an infrared lamp and a high-speed infrared camera, swoop down from the headband to a spot just under the eyes.

The infrared lamps invisibly illuminate the eyes for the cameras, which make recordings at the rate of 60 frames per second and stream the information into a computer. Sophisticated image-analysis software instantly finds the centers of the pupils in each of these thousands of images. All this happens so quickly that a cursor corresponding to a subject's direction of gaze can be superimposed on the experimental image as the subject is looking at it.

This technique has revealed that the gaze of autistic subjects has a distinctive signature. Normal subjects who watched the classic Elizabeth Taylor film *Who's Afraid of Virginia Woolf?* focused mostly on the actors' eyes, and made appropriate shifts in gaze when characters made pointing gestures. Autistic subjects, however, often focused on irrelevant objects away from the center of the frame, and their eye movements were tentative and unpredictable in response to the actors' gestures.

To create the Gollum character for the *Lord of the Rings* trilogy, director Peter Jackson relied on motion-capture technology, in which an actor's body is fitted with lights and the resulting points of light are used to reconstruct the actor's movements and embody them in a new, computer-generated “skin.”

Klin and Jones also use motion capture to create point-light displays of actors' movements. The raw point-light displays look like constellations when seen as still images but they are recognizable as moving human forms, even to very young children, the instant

they begin to move. “When my son saw a still version, he said ‘Stars!’” Klin recalls. “But when he saw it move, he said, ‘Ah! It’s a man of stars!’” This exquisite sensitivity to “biological movement” is so critical for survival that it can be demonstrated even in nonhuman primates.

Using eye trackers to monitor children's shifts in gaze while they watched moving point-light displays that were either correctly oriented or upside-down, Klin and Jones discovered that normal children have a decided preference for right-side-up displays. Autistic children seem to detect no difference between the two, which Klin and Jones interpret as a deficit in perceiving biological movement in autism.

Klin and Volkmar have just received a grant from the Doris Duke Charitable Foundation for a remarkable new collaboration with Brian Scassellati, PH.D., assistant professor of computer science. Scassellati builds robots with human-like facial expressions to study children's social development, and he and Klin plan to examine whether the robots might be a less threatening way for autistic patients to develop social skills.

Klin says that in order for this newest work to be successful, children would have to perceive the robots in social terms, but he says he has few worries on that front after watching his three-year-old daughter's reaction to a prototype that seemed to ignore her: “It took her only a few seconds to start fighting with this robot, because it was snoring!”

ABOVE LEFT TO RIGHT An autistic viewer of a scene from *Who's Afraid of Virginia Woolf?* focused on a distant light switch rather than the steamy interaction of the protagonists.

A child responds to a robot trained to give and react to social cues.

Geometric shapes take on social roles in a clip from Heider and Simmel.

The fusiform face area (shaded) of the brain may play a broader role in social perception than previously thought.

BELOW A series of images from a point-light display rendering of a man in motion. Children with autism tend not to recognize the human figure in the images, whereas other children do.





Life on wheels

Filmmaker and physician Gretchen Berland gave cameras to three disabled people and asked them to shoot their everyday lives. *Rolling*, the documentary that resulted, shows us what the world looks like from the seat of a wheelchair.

By Cathy Shufro



Ernie Wallengren, one of the subjects and creators of the film *Rolling*, continued to coach his son's basketball team after the neurodegenerative disease ALS took away his ability to walk. He recorded his day-to-day experience for the film using a video camera mounted on his wheelchair.



TERRY DAGRADI

Filmmaker Gretchen Berland, an assistant professor of medicine at Yale and former producer for *NOVA*, thought that telling the story from her subjects' point of view would give viewers a deeper understanding of what it means to be disabled. "When you give the camera to someone else, it shifts the power. It's much more a process of discovery for both subject and researcher."



Vicki Elman sits in her wheelchair, stranded on the sidewalk in front of her California house. Her wheelchair motor has stalled, and the van driver has refused to roll her into her house, saying it's against the rules. She can't phone for help, because her cell phone is getting no signal. Elman, who has multiple sclerosis, uses the lightweight camera mounted on her wheelchair to film herself. She is sobbing, struggling to regain her calm. "I guess I will spend the night here," murmurs the 51-year-old woman. As the sky darkens, her face melts into a silhouette.

Ernie Wallengren can't walk anymore, and he knows things will get much worse as his disease progresses. He has ALS, a fatal neurodegenerative disease. "I am bored beyond belief. The boredom—boy, is that the mainstay of life with ALS," says the 48-year-old television writer and producer, whose credits include *The Waltons*, *Falcon Crest* and *Touched by an Angel*. He stares silently into the camera for a few seconds. He sighs. "This is going to suck." A rhythmic thumping comes from another room; one of his five children is practicing drums.

Sixteen months later, when Wallengren can no longer speak, he films himself wearing a headset that translates subtle head movements into Morse code. A computer translates the code into an artificial voice. It speaks for Wallengren in a monotone. "It's a tedious process that limits how often I can yell at my children."

At the age of 16, Galen Buckwalter was ranked third in the half mile in the state of Pennsylvania and ran "for the sheer fun of it." Then, he says, "a smooth swan dive on a nice summer day ended when I hit a rock and was left paralyzed from the neck down. I've used a wheelchair for 30 years now." As he films some friends shooting baskets, he says, "I'd take them all to the cleaner back in the day. That's one thing I can do, is talk about the glory days. Who's going to argue with me?"

These scenes come from *Rolling*, an award-winning documentary about life in a wheelchair produced by Gretchen K. Berland, M.D., an assistant professor of medicine, who came to Yale three years ago after a career in public television and a subsequent career shift into medicine. Beginning in the summer of 2001, Berland asked Los Angeles-area residents Elman, Wallengren and Buckwalter to record the view from a wheelchair. She gave each of them a small video camera, lots of tape and free reign.

"I had no idea what those three people would film," Berland recalls. She expected they'd mostly record daily activities in a wheelchair: getting dressed, opening doors, transferring from wheelchair to driver's seat—what Buckwalter jokingly calls "Gimp 101." And at first, that's what they filmed.

"Then, over time, something happened," says Berland. "They began to film more than the processes of care. They began to use the cameras to document the events that were impacting their lives." Over the course of two years, the three recorded 212 hours of tape. From that raw material, Berland and her co-director, Rhode Island film editor Michael Majoros, crafted a 72-minute documentary. The result is a film, says Berland, that "makes the invisible visible."

Last fall, *Rolling* was named best documentary at the Independent Film Project conference for works in progress, held in New York City. Oscar-winning Los Angeles filmmaker Chuck Workman, one of five jurors for the documentary competition, said the panel chose *Rolling* as the best work among 63 juried entries.

"I've never seen anything like that before, where the filmmaker didn't try to manipulate the material," says Workman. "It's very easy for a [documentary] filmmaker to manipulate and push an agenda. She was allowing the reality to speak to us. She was allowing the disabled people to speak to us."

Rolling was one of 14 new American films chosen by the Independent Film Project for screening at the European Film Market, which was held in conjunction with the Berlin Film Festival in February. A week later, at the invitation of the New York Film Society, Berland and Majoros showed and discussed the film at Lincoln Center in New York. Executives from Sony Pictures Classics have asked Berland for a copy to review, and she hopes that the film will be broadcast on television. (When a major commercial network discussed the possibility of airing the show if she would make the three subjects' lives appear less arduous, however, she declined.)

“Broadcast, for me, is just the first way to get the film out,” says Berland. She also wants the film seen by legislators, medical students, practicing physicians and people who make health care policy, so they can visualize the lives of the 1.6 million Americans who use wheelchairs. “I think that disability rights is where civil rights was 40 years ago,” she says.

Patient as filmmaker

Berland’s work did not grow out of advocacy. Granted, in disseminating her film, Berland uses her documentary in a conventional way: to educate audiences about a set of problems. However, her work originated not as investigative journalism but rather as a means of doing research.

“You can use the visual medium to explore aspects of a patient’s experience that we might not otherwise be able to capture using any other kind of data collection tool,” Berland explains. “When you give the camera to someone else, it really shifts the power. It’s much more really, truly, a process of discovery for both subject and researcher. ... I didn’t control the camera. They controlled what they chose to show us.”

What emerged are the stories of three people “trying to live with as much dignity as possible. Three people—not three people in wheelchairs—who were very different people.” (Wallengren died in May 2003 at age 50.)

The film shows the three enjoying themselves: Buckwalter singing “Charlie” with his rock band; Wallengren careering down the sidewalk in his motorized wheelchair in a race against his son; Wallengren trying not to laugh while drinking orange soda, as a boy from the all-star basketball team he coaches teases: “Do not make a guy with a neurological disorder laugh”; Elman, triumphant and elated, after she falls from bed while transferring into her wheelchair and then strategizes with two neighbors about how to lift her safely off her bedroom floor. “We did it!” exults Elman. “We didn’t even call the paramedics!”

Rolling also shows the three subjects enduring the humiliations imposed by insensitive doctors and thoughtless architects and by the irrationality and inadequacy of the health care system. Elman reveals these indignities most starkly in her self-portrait. On the night she is stranded outside her house, a neighbor does eventually rescue her. But when her electric wheelchair first breaks down, her internist tells her that she is “shit out of luck.” Elman cannot afford a spare chair, and the doctor tells her that if no “babysitter”

is found to assist her while the chair is out for repair, she must go to a nursing home for “a couple of days, at least.” In fact, she spends a month in the nursing home, a month that begins with her struggle simply to enter the building. No one hears her pounding on the front door, and she uses all her strength to heave the door open. Later that day, she films an aide refusing to take her to the bathroom; the aide tells Elman to use a bedpan or a diaper instead. After that, Elman tells us, the nursing home took away the camera.

The day she finally goes home, Elman falls and must return to the nursing home. After a month in bed with no physical therapy, she is debilitated. Berland reports that the bill for the two nursing home stays totaled \$11,700. The cost would have gone far toward the \$22,400 needed for a new chair. “How does one quantify the indignity she experienced?” asks Berland.

Scenes from *Rolling* resonated for New Haven resident Björn Ljungström, a wheelchair user for 10 years who saw the film last fall when Berland screened it at Yale’s Program for Humanities in Medicine. “The humiliation adds up more and more so you get crushed down. It gets to you,” says Ljungström, a retired engineer who moved here from Sweden six years ago to marry an American. “You can have a very good life in a wheelchair,” he says, but “you have to get the right equipment, the right assistance. All of this is more difficult and more expensive in America, compared to Sweden, where I have never paid one cent for equipment.”

He bristles at the comment by one audience member that Berland’s depiction of disabled people is uplifting because it reveals the triumph of the human spirit over adversity. “Should we be impressed by slaves who survive?” asks Ljungström.

“This really has to be shown to as many people as possible,” says Alex Diaz de Villalvilla, a first-year medical student who also attended the screening. “I was amazed at how little assistance Vicki [Elman] has and how poorly the health care system responds to people like her. She’s not a one and only.” He says the film should be shown, in particular, to health care policy-makers, so that they will see “exactly what they’re responsible for.”

Working for NOVA

Despite a background in television, Berland never expected to use filmmaking in medical research. She thought she’d

left the medium behind when she enrolled in medical school in 1992 after five years of making documentaries for public television. Since age five, she'd planned to be a doctor like her father, whom she describes as "the kind of physician you want to take care of you." He still practices in Portland, Ore., where she grew up, the older of two daughters. (Her sister works for the World Bank, specializing in the role water quality plays in international conflict.) Berland thought she'd like medicine because it combines science, advocacy and making people's lives better.

Then, as a biology major at Pomona College in California, she'd become fascinated by the challenge of making science accessible to a nonexpert audience. She worked for *NOVA*, the science series at WGBH in Boston, and later for the *MacNeil/Lehrer NewsHour* in New York. At *NOVA*, she and her colleagues would spend a year on a show lasting a single hour. "One year to one hour," she says. That hour could draw an audience of millions.

Berland worked on seven shows, including one about the race to develop the superconductor that won her team an Emmy in 1988, and a documentary on chaos theory.

After several years in television, Berland tried to imagine how she would feel at 40, looking back on her career. She recognized that she would regret not studying medicine. At age 28, she enrolled at the Oregon Health Sciences University. She felt sure she'd left her life in television behind. "I didn't want to be a TV doctor."

As it turned out, Berland did not forsake film for long. Her first reunion with the camera occurred during a psychiatry rotation. While visiting teenagers in the city's juvenile justice center, she asked the incarcerated teens where they pictured themselves in five years. "Dead," they replied. The stories they told her, of violence, exploitation and deprivation, "were never in the chart." She thought: "Here they are in a multimillion-dollar sophisticated jail, and we have no idea about who these kids are. We know nothing about their lives." She got a grant to give cameras to five teenagers outside the jail, and they made a film that was broadcast on public access TV.

When she moved to St. Louis in 1996 for a residency in medicine at Washington University, she used film again. She lent cameras to a dozen fellow residents who filmed a "video diary" of what happened on call. Covering overnight for another doctor, she says "is the experience where resi-



Vicki Elman, who has multiple sclerosis, exercises in a scene from *Rolling* that shows her when things are going well. The film also conveys the intense frustration Elman experiences when her motorized wheelchair breaks down.

dents really learn to be doctors. There's no manual that tells you what to do, and it can be very stressful." The 1998 half-hour film, *Cross-Cover*, has been distributed to 150 residency programs nationwide as a springboard for discussion.

Getting the idea for the wheelchair film was "serendipitous." It came to Berland in 1999, when she was a fellow at UCLA's Robert Wood Johnson Clinical Scholars Program, which trains young physicians to do health services research aimed at improving health care. Berland was attending a medical conference—and casting about for an idea for her research project—when she noticed a participant who used an electric scooter. Everything took longer for the woman: getting through doors, rolling up to the microphone to ask a question. "I thought, 'I wonder what her life is like.'"

Berland could simply have interviewed the woman, and others in wheelchairs, but the questions would have reflected what Berland wanted to know. "That assumes we can define the boundaries of what is important," says Berland. "The camera lends itself to discovering something new. In medicine we interrupt people every seven seconds. The camera gives the patient power."

While giving cameras to teenagers and to residents had been sidelines to her main occupation of training to be a doctor, the stakes were higher when Berland began work on

At the heart of disability, a “positive perception of self”

Galen Buckwalter, PH.D., agreed to film life from his wheelchair to show that a disabled person is neither a hero nor a victim, just an ordinary person doing his best to shape a satisfying life. At the least, Buckwalter thought, the film would “normalize” him and the other wheelchair users in the documentary. It would help viewers feel more at ease around people in wheelchairs.

Rolling managed to do much more than that, says Buckwalter. “We went further,” says the California research psychologist, who lost the use of his legs in a 1973 diving accident. “We presented an analysis of what is at the essence of disability.” That essential element, common to all people with disabilities, he says, “is the need to integrate dependence into our daily lifestyle, in a way that’s egosyntonic—consistent with a positive perception of self.”

The award-winning film, produced by Yale internist Gretchen K. Berland, M.D., shows three lives lived at odds with a culture that teaches that “we have to be lone guns.” “My reality is I’m dependent on a wheelchair,” says Buckwalter in a telephone interview last winter. “That doesn’t change everything, but it changes quite a bit. ... For me to exist—to borrow a phrase—I need a village.”

Buckwalter used the camera Berland gave him to record both pleasant and distressing moments: he banters with friends around a campfire, and he teases his wife, Deborah, for choosing schmaltzy music when they share a glass of wine. He shows himself reconnoitering the parking lot outside their Pasadena loft to avoid dog feces as he rolls out to his car.

In the scene that he found most difficult to film, he muses about the increasing pain in his shoulders, arthritic from years of lifting himself in and out of his chair. At age 47, Buckwalter faces the prospect of switching to an expensive motorized wheelchair. The change will be a blow to his self-image. “Even after I got hurt, I still considered myself a very physical man,” he says. “I viewed my injury as very static. It wasn’t going to change as I aged.” But, he now acknowledges, “being disabled, you age in dog years.”

Buckwalter joined Berland’s documentary project when she was a Robert Wood Johnson clinical scholar at UCLA, looking for wheelchair users to collaborate on her film. The two met through a fellow in Berland’s group who was getting help on his project from Buckwalter, who works at the Southern California Kaiser Permanente Medical Group developing tests for age-related cognitive changes.

Buckwalter almost died last summer when medication he took to prevent blood clots caused a catastrophic gastrointestinal bleed. As he struggled to survive, Buckwalter recalls, “I was just trying to get in touch with what was good about me. ... I think it was one of those times where if I didn’t really want to live, I could have gone. And I really did want to live.”

As he regains his strength, he reports that he is “feeling almost ecstatic at being alive and being engaged. ... Life is very bright right now, and *Rolling* is part of that brightness for me. I literally feel blessed to be part of this. Because when I watch *Rolling*, I feel like I’m part of something much bigger than me: I think it succeeds at portraying disability as a situation that does not at all impede having a richly rewarding life.”



Galen Buckwalter, who was paralyzed in a diving accident 30 years ago, says that *Rolling* demystifies and normalizes the experience of wheelchair users: “I think it succeeds at portraying disability as a situation that does not at all impede having a richly rewarding life.”

Rolling. This was part of her research as a fellow in the clinical scholars program, where expectations are high. Although Berland also worked on a quantitative study of the accuracy and sophistication of medical information on the Internet, taking on a film project marked her as nontraditional.

“I wasn’t sure what I was looking for. That’s where people get nervous, because it’s risky. You don’t have a hypothesis you’re going to test or an outcome that you’re going to measure.” She wasn’t even sure how she would use the tapes she got from Elman, Wallengren and Buckwalter, whom she found through colleagues. At first, she thought she might use film sequences to illustrate a paper about the lives of people who use wheelchairs. But in the end, she realized that the footage was so powerful that it had the capacity to become a film.

Finding that powerful footage was “a process of discovery,” says co-director Majoros, a film editor and documentary filmmaker on the faculty of the Rhode Island School of Design. Joining the project after shooting had begun, Majoros quickly saw that editing *Rolling* would differ from editing a documentary he’d filmed himself. When you shoot your own footage, he says, “it’s pretty obvious what the good stuff is and the bad stuff is.” Because *Rolling* was filmed by “neophytes,” he and Berland had to search, without preconceptions, for “the pieces that tell a story.” Among hours and

hours of seemingly dull footage, Majoros recalls, “all of a sudden there’d be a 45-second gem.”

He noticed some differences between his choices and Berland’s. In deciding what to include, he says, “I will tend to opt on the side of a good story. She will come at it much more from an academic background—to make sure we aren’t misrepresenting something.”

Berland had already worked with Majoros, on *Cross-Cover*, having met him through a colleague. She found a collaborator of a different sort—and made a Yale connection—through her work as a clinical scholar at UCLA. Attending meetings of clinical scholars from around the nation, she got to know Harlan M. Krumholz, M.D., a professor of medicine, who heads Yale’s clinical scholars program, a sister program to UCLA’s. Over time, Krumholz developed into an across-the-continent mentor for Berland. Anyone doing scholarly work needs support, but when the work is unconventional, she says, “it really helps to have someone in your corner. Harlan as well as others here [at Yale] have provided that support.”

Krumholz helped to recruit Berland to the Yale faculty, and since November 2001 she has served as a core faculty member of the clinical scholars program. She spends about a third of her time as an internist, treating patients through the School of Medicine’s primary care program and teaching medical students and residents.

“Gretchen has an enormous amount of creativity and vision around issues very relevant to the way in which our health care system works,” says Krumholz. “Her work helps us see what may be right in front of us but may not be visible to us.”

A complement to large studies

Two factors that obscure the physician’s view of the patient’s experience are pressures on doctors to be efficient and the advent of megascale studies. “Gretchen’s work is all the more important because we’re in an era when house calls are no longer made,” says Krumholz. During standard 15-minute office visits, “physicians have lost the opportunity to explore what patients’ lives are really like,” he says. Also, advances in information technology allow researchers to amass and analyze huge quantities of data and to observe patterns. But, says Krumholz, “enormous data sets are very reductionist. Standardized collection of data doesn’t allow

for nuance and for understanding the tapestry of what makes up people’s lives. ... Whether it’s research, or art or some combination, Gretchen’s work is a great complement to the studies in which we’re dealing with large numbers of people.”

Berland has begun another research project using cameras and has ideas for two others. She is working with Krumholz to study what happens when a hospitalized patient has a cardiac arrest. The camera will serve as a data collection tool for a study of how hospital staff handles “codes.” Berland also wants to learn about health care from the perspective of ordinary people by giving them cameras. She is thinking of doing that research in the defunct manufacturing hub of Waterbury, Conn. She wants to use film to study how patients re-enter the outside world after spending time in the hospital.

Krumholz said Berland’s work must face the test imposed on all qualitative research: is it generalizable? He answers yes. “The truths that you see when you watch her film ring so true, resonate so well, that you just know these aren’t isolated experiences of these individuals. These themes transcend these individuals and must speak to a broader experience.

“The challenge she faces is whether an academic medical center can adapt to understand how to credit this work, because it is so far outside the mainstream. ... The academic system is used to counting papers published.”

Berland’s view of herself as a researcher came through clearly to filmmaker Workman. Unprompted by any discussion of what constitutes research, he called *Rolling* “a scientific study ... a scientific presentation of what happens” to Elman, Wallengren and Buckwalter.

Workman admires what he called the “purity” of the film. “You don’t have Charlton Heston or Gene Hackman narrating it. It’s so much more interesting for an audience to make their own decisions about this.” And he said that audiences have seen so much nonfiction that “they have a very good detector of what isn’t real and what isn’t truthful.” Viewers can tell that Berland has not distorted the material to construct an audience-pleasing film.

“I hope the movie goes far,” says Workman. “I hope she makes more movies.”

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

Graduate school dean moves to Yale College

Psychology professor Peter Salovey replaces Richard Brodhead as dean of the undergraduate school.

A little over a year after he was appointed dean of the graduate school, **PETER SALOVEY, PH.D. '86**, has taken on a new post as dean of Yale College. He replaces Richard H. Brodhead, PH.D., who left Yale to become president of Duke University.

Salovey, the Chris Argyris Professor of Psychology, is deputy director of the Center for Interdisciplinary Research on AIDS based at the School of Public Health, where he is also a professor. His work on message framing has explored the effectiveness of health promotion campaigns designed to reduce risky behaviors that can lead to infection with HIV/AIDS and other sexually transmitted diseases. He has conducted similar work on health communications targeting cancer prevention behaviors.

In more than 200 publications he has reported on human emotion and health psychology. His research has explored the psychological consequences of the arousal of emotion, especially the ways in which mood and emotion influence autobiographical memory and social interaction. With John D. Mayer, PH.D., Salovey developed the theory of emotional intelligence, showing that people have a wide range of measurable emotional skills that profoundly affect their thinking and action.

Salovey has served on the National Science Foundation Social Psychology Advisory Panel and the National Institute of



Mental Health (NIMH) Behavioral Science Working Group, and is presently a member of the NIMH National Advisory Mental Health Council. He was a recipient of the National Science Foundation's Presidential Young Investigator Award and of the 2001 National Cancer Institute's CIS Partner in Research Award.

Salovey has been chair of the psychology department and director of undergraduate studies and graduate studies. He has won the William Clyde DeVane Medal for Distinguished Scholarship and Teaching at Yale College and the Les Hixon '63 Prize for Teaching in the Social Sciences.

Jon Butler, PH.D., chair of the Department of History, professor of religious studies and the William Robertson Coe Professor of American Studies and History, will replace Salovey as dean of the Graduate School of Arts and Sciences.



Former Cancer Center director honored with professorship

Vincent T. DeVita Jr., M.D., has been named the Amy and Joseph Perella Professor of Medicine in recognition of his contributions to cancer research and treatment.

The chair was endowed in December with a gift of \$2.5 million to strengthen the Yale Cancer Center's ability to develop translational research and new treatments. Joseph R. Perella, a member of the cancer center's advisory board, is chair of The Institutional Securities Group at Morgan Stanley. His wife, Amy Perella, is a survivor of Hodgkin's disease.

Following DeVita's tenure the chair will be renamed the Vincent T. DeVita Professor of Medicine and will support a physician at the cancer center with a strong clinical research background in the treatment of cancer.

DeVita, a former director of the National Cancer Institute, was director of the Yale Cancer Center from 1993 until last July. He now chairs the Yale Cancer Center Advisory Board and is a professor of medicine and epidemiology and public health. He serves on the editorial boards

of numerous scientific journals and is the author or co-author of more than 450 scientific articles.

Faculty members selected as fellows of AAAS

Three members of the Yale University faculty with medical school affiliations were named fellows of the American Academy of Arts and Sciences (AAAS) in May.

Donald M. Engelman, PH.D. '67, the Eugene Higgins Professor of Molecular Biophysics and Biochemistry, uses X-ray diffraction, neutron scattering, electron microscopy, optical spectroscopy and biochemical methods to determine how the primary sequences of membrane proteins determine their three-dimensional structures and how they function.

Paul A. Fleury, PH.D., dean of the Faculty of Engineering, is the Frederick William Beinecke Professor of Engineering and Applied Physics. At Yale he has been a catalyst in the emergence of engineering as a cohesive link between the physical and biomedical sciences.

Susan Hockfield, PH.D., provost of Yale University, is the William Edward Gilbert Professor of Neurobiology and former dean of the Graduate School of Arts and Sciences. She studies the development of the mammalian brain and the progression of the deadly glioma type of brain tumor. She has written more than 90 scientific publications and is the primary author of *Molecular Probes of the Nervous System: Selected Methods for Antibodies and Nucleic Acid Probes*.



Sharon Inouye



Susan Hardy



Curtis Patton



Margaret Bia



Sidney Blatt



James Comer

Sharon K. Inouye, M.D., M.P.H. '89, professor of medicine (geriatrics), associate clinical professor of nursing and co-director of the Yale Program on Aging, received the Ewald W. Busse Research Award in Biomedical Sciences at the Gerontological Society of America's 56th meeting in San Diego, Calif. Inouye was recognized for her contributions to advancing the scientific understanding of delirium and functional decline. At the same meeting, **Susan E. Hardy**, M.D., postdoctoral fellow in geriatric medicine and a PH.D. candidate in investigative medicine, was awarded the Person-in-Training Award. Hardy was honored for her paper "Predictors of Recovery of Independent ADL Function Among Newly Disabled Community-Dwelling Older Persons."

Two members of the medical school faculty have been named to a re-established Minority Advisory Council (MAC). The MAC will advise President Richard C. Levin on the appropriateness of policies related to minority groups.

The medical school faculty members are **Liza D. Cariaga-Lo**, ED.D., assistant dean of diversity at the graduate school and assistant clinical professor at the Child Study Center, and **Curtis L. Patton**, PH.D., professor of epidemiology (microbiology) and director of International Medical Studies.

Three Yale faculty members were honored in April by the National Kidney Foundation (NKF) of Connecticut with the Pioneers in Transplantation Awards: **Margaret J. Bia**, M.D., professor of medicine (nephrol-

ogy), **Marc I. Lorber**, M.D., professor of surgery (transplantation), and **Bernard Lytton**, M.B.B.S., the Donald Guthrie Professor Emeritus of Surgery.

Sidney J. Blatt, PH.D., professor of psychiatry and psychology and chief of psychology in the Department of Psychiatry, is the recipient of the 2004 award for Distinguished Scientific Contributions from the Division of Clinical Psychology of the American Psychological Association.

James P. Comer, M.D., M.P.H., HS '66, the Maurice Falk Professor of Child Psychiatry in the Child Study Center, was honored with the seventh annual John P. McGovern Behavioral Sciences Award by the Smithsonian Institution. The award, presented in January by Sen. Hillary Rodham Clinton (N.Y.), recognizes individuals in the behavioral sciences, literature and other professions who have made outstanding contributions to furthering the understanding of the family in America.

Joseph E. Craft, M.D., HS '77, professor of medicine and immunobiology, has been named director of the Investigative Medicine Program at Yale. Craft replaces Keith A. Joiner, M.D., M.P.H. '03, who left in February to become dean of the University of Arizona College of Medicine. The Investigative Medicine Program provides rigorous research training for physicians in laboratory science or patient-oriented research leading to the awarding of a PH.D. degree.

Elena L. Grigorenko, PH.D. '96, associate professor of psychology and associate professor of child studies in the Child Study Center, has won the 2004 American Psychological Association (APA) Award for Distinguished Scientific Early Career Contribution to Psychology (Developmental). This award is given once every three years to an outstanding young scientific investigator less than 10 years post-PH.D.

Michael Kashgarian, M.D. '58, HS '63, professor of pathology and molecular, cellular and developmental biology, received the Jacob Churg Award of the Renal Pathology Society in March at the meeting of the United States and Canadian Academy of Pathology in Vancouver, British Columbia. The Jacob Churg Award is presented annually to an individual who has made major contributions to the field of nephropathology.

Marvin Moser, M.D., clinical professor of medicine and editor in chief of the *Journal of Clinical Hypertension*, has received the International Society of Hypertension Award for Outstanding Contributions to Clinical Research and Treatment in the Management of Hypertension.

Susan S. Spencer, PH.D., professor of neurology, has received the Clinical Investigator Award from the American Epilepsy Society/Milken Family Foundation, to recognize her contributions to epilepsy research. She received the award in December 2003 at the annual meeting of the American Epilepsy Society in Boston.

V. Robin Weersing, PH.D., assistant professor in the Child Study Center, was one of six researchers named a William T. Grant Scholar in April by the William T. Grant Foundation. A \$300,000 five-year grant will support her research on developing and disseminating effective interventions for depression and anxiety in youth.

Barry L. Zaret, M.D., the Robert Berliner Professor of Medicine, chief of the Section of Cardiovascular Medicine and professor of diagnostic radiology, received a 2004 Ellis Island Medal of Honor in May for his outstanding contributions to American medicine. The medal was created in 1986 "to honor the many ancestral groups who through struggle, sacrifice and success helped build this great nation." Presidents, senators, congressional leaders and Nobel Prize winners are among those to receive the medals. Zaret's family is from Belorussia, an area also known as White Russia that was once part of the Russian Empire.

SEND FACULTY NEWS TO

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Subspecialties? That's our specialty

The 2004 Match shows that Yale students, like their peers, want a niche to call their own.

By Ilene Wong

"Have any of you guys been having Match nightmares?" one of my classmates asked in March, a week or so before the 2004 residency placements were announced for 25,000 U.S. medical students (including 107 here in New Haven). Many of us had indeed slept fitfully while waiting to learn where we would be spending the next phase of our training, and for good reason. Yale medical students flocked this year toward the most competitive subspecialties, and with precious few slots in these programs, the process was more than a little nerve-wracking. "It can be a real game of chance," Nancy R. Angoff, M.P.H. '81, M.D. '90, HS '93, the associate dean for student affairs, had warned us. "There are no guarantees."

The late 1990s saw a shift away from subspecialty training in favor of generalist careers. More than half the students in the Yale classes of 2000 and 2002, for example, chose residencies in internal medicine, family practice and pediatrics, and nationally the figure was higher. This year, fewer than 40 percent of Yale students entered these tracks, favoring instead such highly sought-after fields as dermatology and radiology, which also carry higher salaries. One reason seems to be debt, which will average \$109,457 for graduating students this year, according to the Association of

American Medical Colleges. Another is the desire for a controllable lifestyle with less call and shorter hours. Families have changed, and most physicians will not have a stay-at-home spouse to support a round-the-clock practice. But beyond this, Yale medical students may be predisposed to sub-specialize because that is where their curiosity leads them. My classmates are likely to want to become experts in a field and to call something their own.

For nearly every medical student, Match Day is the undeniable climax of four years, a day in which anxiety yields to profound certainty with the rip of an envelope. I approached the third Thursday in March on a more even keel than most. Like 16 of my classmates who applied for the early-match specialties (otolaryngology, neurology, neurosurgery, ophthalmology and urology), I had received an early-morning call in January informing me of my match. One moment I was being roused from sleep by a ringing phone; the next I knew for certain where I would be and what I would be doing for the next six years. Many of my friends were on rotations or in class that morning, so my celebration was protracted and intimate. I shared the news with my family and distant friends by phone in the quiet of my room.

March 18, however, was an entirely different matter. After spending the morning discussing professionalism with John S. Hughes, M.D., HS '76, and other faculty members, we filed into the Marigolds dining area at 11:40 (our itinerary for the day had helpfully noted that from 11:30 to noon, we would experience a time when the "tension mounts"). Family members, significant others and classmates tak-

Nduka Amankulor and Brian Nahed looked over the Match list with Interim Dean Dennis Spencer.



ing a fifth year joined the jittery crowd. At noon the doors to Harkness ballroom opened and my classmates rushed in to open their envelopes. There was a lot of joy and just a little bit of disappointment as people met their match. At around 12:10 the full match list was released and students huddled in groups to marvel at the collective picture, which was on the whole incredibly rosy: an unprecedented 12 students matched in dermatology; a dozen future pediatricians almost uniformly matched at their first choice; six students apiece placed in the competitive fields of orthopaedics, ophthalmology, urology and radiology.

At times it seemed like there were too many people to congratulate. Eliza Auerbach, who will be going to Columbia for pediatrics (her first choice), summed up the sentiments of many of my classmates, noting that she was "happy, but overwhelmed."

Vernee N. Belcher was ecstatic about staying at Yale for internal medicine/primary care. But even before tearing open that fateful envelope, she reflected that we all had much to be grateful for by having been at Yale Med: "No matter where we match, it's clear we will all be great doctors."

Ilene Wong is beginning her residency in urology this summer at Stanford.

2004 residency placements for Yale medical students

The Office of Student Affairs has provided the following list, which outlines the results of the National Resident Matching Program for Yale's medical graduates. Some names appear twice because the graduate is entering a one-year program before beginning a specialty residency. The transitional designation is a one-year program with three-month rotations in different specialties.

California

California Pacific Medical Center, San Francisco

Paul Kim, radiation oncology

Contra Costa Regional Medical Center, Martinez

Pramita Kuruvilla, family practice

Harbor-UCLA Medical Center, Torrance

Chirag Shah, emergency medicine

Santa Clara Valley Medical Center, San Jose

Paul Kim, transitional

St. Mary Medical Center, Long Beach

Ragui Sedeek, medicine-preliminary

Stanford University Programs

Bao Duong, emergency medicine

Katharine Fast, internal medicine

Saif Ghole, general surgery

Cambria Hembree, internal medicine

Ilene Wong, surgery-preliminary, urology

University of California, San Francisco

Michael Eisenberg, surgery-preliminary, urology

Mona Kotecha, anesthesiology

Liana Kretschmar, pediatrics

Roberto Lugo, orthopaedic surgery

James McCabe, internal medicine

Harsimran Singh, internal medicine

Connecticut

Hospital of Saint Raphael, New Haven

Paul El-Fishawy, medicine-preliminary

Cinthia Guzman, transitional

Nabil Salib, general surgery

John Soderberg, medicine-preliminary

Yale-New Haven Hospital

Nduka Amankolor, surgery-preliminary, neurosurgery

Vernee Belcher, internal medicine/primary

Michael Bloch, psychiatry-adult/child

Victoria Bruegel Sanchez, orthopaedic surgery

Severine Chavel, medicine-preliminary, dermatology

Keith Choate, medicine-preliminary, dermatology

Oscar Colegio, medicine-preliminary, dermatology

Craig Dushey, orthopaedic surgery

Rina Garcia, internal medicine/primary

Grahame Gould, surgery-preliminary, neurosurgery

Michael Greenspan, internal medicine

Cinthia Guzman, ophthalmology

Karl Haglund, medicine-

primary-preliminary

Joseph Harburger, internal medicine

Byron Kennedy, general surgery

Elaine Kung, medicine-

primary-preliminary

Elin Lisska, internal medicine

Kavita Mariwalla, dermatology

Paola Uranga, general surgery

Erica Wang, obstetrics and gynecology

District of Columbia

Georgetown University Hospital

Heather Shelsta, transitional

Walter Reed Army Medical Center

Clifton Mo, internal medicine

Washington Hospital Center

Mona Kotecha, medicine-preliminary

Illinois

University of Chicago Hospitals

Jennifer Blair, emergency medicine

Melissa Kirkwood, general surgery

Elaine Kung, dermatology

Maryland

Johns Hopkins Hospital, Baltimore

Renee Boynton-Jarrett, pediatrics

William Burns, general surgery

John Koethe, internal medicine

Elizabeth Arleo, Rupali Gandhi, Reena Rupani and Cinthia Guzman shared a moment of joy over their successful matches.



National Naval Medical Center, Bethesda

Suneil Ramchandani, internal medicine

Massachusetts

Beth Israel Deaconess Medical Center, Boston

Wei Chan Hwang, internal medicine

Benjamin Negin, internal medicine

Jared Weiss, internal medicine

Brigham and Women's Hospital, Boston

Mark Berman, internal

medicine/primary

Ugonna Duru, obstetrics and gynecology

Darlene Gabeau, radiation oncology

Karl Haglund, radiation oncology

Timothy Henrich, internal medicine

Christopher Herndon,

obstetrics and gynecology

Stephanie Holler, diagnostic radiology

Alfred Lee, internal medicine

Jacqueline William, pathology

Carney Hospital, Boston

Ryan Jean-Baptiste, medicine-preliminary

Children's Hospital of Boston

Virginia Cohen, pediatrics

Rupali Gandhi, pediatrics

Dena Springer, pediatrics

Rachel Willner, pediatrics

Massachusetts Eye and Ear Infirmary, Boston

Ben Kim, ophthalmology

Massachusetts General Hospital, Boston

Allyson Bloom, internal medicine

Amir Fathi, internal medicine

Kavita Mariwalla, medicine-preliminary

Ashraf Thabet, diagnostic radiology

Parsia Vagefi, general surgery

Erik Weiss, surgery-preliminary, urology

Mount Auburn Hospital, Cambridge

Darlene Gabeau, medicine-preliminary

Ben Kim, medicine-preliminary

Michigan

University of Michigan Hospitals, Ann Arbor

Sarah Kohnstamm, internal medicine

New Hampshire

Dartmouth-Hitchcock Medical Center, Lebanon

Jennifer Fines, pediatrics

Adam Pearson, orthopaedic surgery

Hilary Ryder, internal medicine

New Jersey

UMDNJ-New Jersey Hospital, Newark

Robyn Siperstein, dermatology

Erica Wang and her husband, Stephen Shiao, read over the letter announcing her match in ob/gyn at Yale-New Haven Hospital. Shiao is in his fifth year of the M.D./Ph.D. program.



JOHN CURTIS (2)

Bahar Firoz and Jesse James studied the list of matches to see where classmates were headed.



New Mexico

University of New Mexico Health Sciences Center, Albuquerque
Lawrence Goldstein, emergency medicine

New York

Albert Einstein College/Jacobi Medical Center, Bronx
Jessica Newman, dermatology

Albert Einstein College/Montefiore Medical Center, Bronx

Brent Little, diagnostic radiology
Jane Schneider, medicine-preliminary

Beth Israel Medical Center

Jessica Newman, medicine-preliminary

Lenox Hill Hospital

Elizabeth Arleo, medicine-preliminary

Memorial Sloan-Kettering Cancer Center

Richard Awdeh, transitional
Stephanie Holler, transitional

Mount Sinai Hospital

Bahar Firoz, medicine-preliminary
Tamiesha Frempong, medicine-preliminary
Brent Little, medicine-preliminary

New York Eye and Ear Infirmary

Ragui Sedeek, ophthalmology

New York Medical College at St. Vincent's Hospital

Ashraf Thabet, medicine-preliminary

New York Methodist Hospital, Brooklyn

Ryan Jean-Baptiste, diagnostic radiology

New York-Presbyterian Hospital-Columbia

Eliza Auerbach, pediatrics
Paola Ayora, pediatrics
Cordelia Carter, orthopaedic surgery
Caroline Jjingo, internal medicine
Daniel Prince, orthopaedic surgery

New York-Presbyterian Hospital-Cornell

Elizabeth Arleo, diagnostic radiology

New York University School of Medicine

Bahar Firoz, dermatology
Rachel Levy, internal medicine/primary
Reena Rupani, medicine-preliminary

SUNY Health Science Center, Brooklyn

Jane Schneider, dermatology

University of Rochester/Strong Memorial Hospital

Emily Lambert, medicine-preliminary-neurology, dermatology

North Carolina

Duke University, Durham
Richard Awdeh, ophthalmology
John Soderberg, dermatology

University of North Carolina Hospital, Chapel Hill

Shannelle Campbell, general surgery

Ohio

Cleveland Clinic Foundation
Edward Cho, surgery-preliminary, otolaryngology

Pennsylvania

Albert Einstein Medical Center, Philadelphia
Robyn Siperstein, transitional

Allegheny General Hospital, Pittsburgh

Eduardo Marchan, surgery-preliminary, neurosurgery

Children's Hospital of Philadelphia

Spencer Epps, pediatrics
Laura Mobisson, pediatrics

Hospital of the University of Pennsylvania, Philadelphia

Charles Baillie, internal medicine
Kathryn Davis, medicine-preliminary, neurology
Myriam Fernandes, obstetrics and gynecology
Sean Lucan, family practice
Alejandro Necochea, internal medicine
Alejandro Reti, pathology

Scheie Eye Institute/University of Pennsylvania, Philadelphia
Tamiesha Frempong, ophthalmology

Thomas Jefferson University, Philadelphia

Ada-Nkem Nwaneri, family practice

Wills Eye Hospital, Philadelphia

Heather Shelsta, ophthalmology

Rhode Island

Rhode Island Hospital/Brown University, Providence
Reena Rupani, dermatology

Texas

University of Texas Southwestern Medical School, Dallas
Jenny Yee, surgery-preliminary, urology

Washington

University of Washington Affiliated Hospitals, Seattle
Rajasekhara Ayyagari, surgery-preliminary, urology
Zachary Goldberger, internal medicine
Eric Gustafson, pediatrics
Grace Kalish, diagnostic radiology
Marco Salazar, surgery-preliminary, urology

Virginia Mason Medical Center, Seattle

Grace Kalish, transitional

BELOW LEFT No recent show has missed a mention of former Dean David Kessler, who left Yale last year. In this year's performance, Richard Silverman, Dennis Spencer and Robert Gifford sang an ode to the departed dean, "We Lost Our Dean to San Francisco." **CENTER** Stacy Uybito, who choreographed a Tahitian dance

number, is joined onstage by classmate Craig Platt. **RIGHT** Kendra Klang and Ahou Meydani danced through the show's opening number, "La Vie Yale Med." Set in Marigolds, the scene highlights various aspects of life at the medical school. Here, chorus girls show how Yale's environment allows them to break taboos.

In a darkened Harkness, video reigns king of the second-year show

An ad from the Office of Admissions in the program for this year's second-year show congratulated the Class of 2006, then playfully added, "We were the first to spot your extraordinary talent." While watching this buoyant and risqué mid-winter revue any given year, one has to wonder if singing, dancing and writing ability might not factor into the admissions process to some small degree. For an amateur show, it's pretty good entertainment—especially for insiders who get the jokes and barbs.

This year, videography topped the list of talents behind a sophomoric (by definition) production titled *Not Another 2nd-Year Show*. The title may have been a reference to the near-total absence of plot. Digital camcorders and do-it-yourself editing software have fueled an increasing number of video sketches as part of the show each February, and the trend was strong enough this time to keep the stage clear of performers for good chunks of the evening.

Among the highlights on screen was an opening video sequence taken from *The Sopranos*, with a cigar-smoking Craig Platt navigating an SUV through the gritty highways approaching downtown

New Haven. Snippets of video enabled the show's creators to parody the movie *Top Gun*, with Associate Dean Nancy R. Angoff, M.P.H. '81, M.D. '90, HS '93 (in the role of the sexy flight instructor) playing opposite Doug Lyssy's headstrong Maverick, who rode a red Ducati motorcycle onto the stage. Another movie parody cast Davendar Khera and Timmy Sullivan as arch rivals in a sendup of the Ben Stiller/Owen Wilson comedy *Zoolander* called "Zoolabber."

A series of video interviews with faculty members including Michael J. Caplan, Susan J. Baserga, Herbert S. Chase and Lawrence J. Rizzolo allowed student Simon Best to embarrass his victims with trick questions on advanced topics in science ("If the ridge line of a house is pointing due south, and on a sunny day a rooster lays an egg precisely on the center of that ridge, which way will the egg roll?"). A *Saturday Night Live*-inspired segment gave the school's registrar the chance to bowl over unruly students in the persona of "Terry Tolson, Student Affairs Office Linebacker." And one of the most original clips was produced by Todd Ebbert, whose 2-year-old daughter, Alia, excelled as a young med student in the making in a sketch titled "Kaplan for Kids." (She correctly pointed to her frontal cortex, xiphoid process and patella.)

The live-action portion of the show included a clever piece called "Heart Sounds," patterned after gallops and murmurs; a Tahitian dance number choreographed by Stacy Uybito and Joel Hernandez; amazing break dancing by Eddie Teng; and a tender and comedic pas de deux by Craig Platt and Deepak Rao. Continuing a tradition of exploring the limits of taste, a number titled "Club Moist" probed New Haven's club scene and the full range of sexually transmitted diseases one might encounter among the clientele.

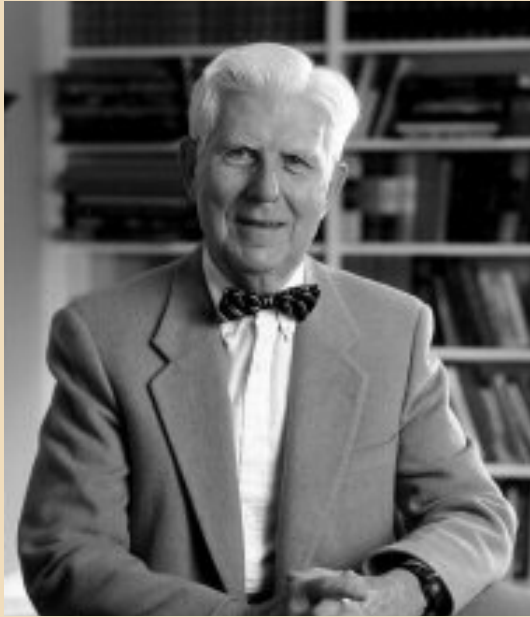
In the end, lacking a plot didn't seem to hamper the ability of *Not Another 2nd-Year Show* to charm and entertain. For the past five or six years, most of the story lines had revolved around former Dean David A. Kessler, M.D., who left Yale last June for a similar post in California. This show, too, managed a nod to Kessler in its final number, "We Lost Our Dean to San Francisco," which was sung by Angoff, Interim Dean Dennis D. Spencer, M.D., HS '77, Admissions Director Richard A. Silverman and former Deputy Dean Robert H. Gifford, M.D., HS '67.

The proceeds of the show, more than \$3,000, were donated to the Community Health Care Van in New Haven.

—Michael Fitzsousa

TERRY DAGRADI (3)





BECK INSTITUTE

Challenging Freud, starting a revolution

A residency requirement became a passion for one doctor and changed the field of psychiatry.

As a neurology resident at the Cushing VA Hospital in Framingham, Mass., Aaron T. Beck, M.D. '46, was required to do a rotation in psychiatry. But what began as an academic obligation soon became a career-altering opportunity, as Beck saw the value of using psychological tools to help some patients.

"I got stuck in psychiatry and never got out of it," Beck says today, five decades later. "In neurology there wasn't much you could do in terms of treatment in those days. What fascinated me about psychiatry was that people with neuroses could actually be treated and made better."

Beck went on to become one of the most influential figures in American psychiatry. As a young doctor in the 1960s, he challenged the theories of Sigmund Freud and triggered a revolution in psychology, founding a treatment method known as cognitive therapy. He recently received the 2004 University of Louisville Grawemeyer Award for Psychology, which includes a \$200,000 prize, for his groundbreaking contribution to the field of psychology.

"He is the latest of the great system creators in psychotherapy," says Bruce J. Rounsaville, M.D., FW '78, professor of psychiatry at the School of Medicine. "In the same tradition as Sigmund Freud and Carl Rogers, he made a major difference in the way people approach psychotherapy."

As a young psychiatrist, Aaron Beck realized that traditional psychoanalysis wasn't making his patients better. He developed an alternative therapy that revolutionized psychiatric thought.

Early in his career Beck adhered to the teachings of Freud, specifically the value of psychoanalysis. But when he began noticing that his patients weren't getting any better, he developed an alternative treatment that focused on the patient's immediate feelings and perceptions rather than unearthing repressed fears and conflicts, as is central to Freudian psychoanalysis. "Since patients are aware of their conscious thoughts, it's not as difficult [as traditional psychotherapy, which requires the exhumation of buried memories] to correct misperceptions," he says during a phone interview from his office in Philadelphia.

Cognitive therapy is based on a specific understanding of how the human mind works, Beck says. "People with certain types of neurotic disorders distort the way they view themselves. They see through a negative lens, so all experiences are twisted around to something negative. Cognitive therapy offers strategies to identify that negative distorted thinking and to help the patient correct it." Unlike adherents of Freudian psychotherapy, Beck doesn't believe one has to trace the origin of an emotional problem in order to treat it. "It's not necessary to go back to early trauma," he says. "What's important is addressing the problem that has arrived."

Cognitive therapy has been used to treat a range of patients, from depressed housewives to schizophrenics. Most recently, Beck has applied his theories to analyzing the minds of terrorists. In his 1999 book, *Prisoners of Hate: The Cognitive Basis of Anger, Hostility, and Violence* (HarperCollins), Beck concludes that the terrorist mind-set is "just as distorted as those of neu-

rotic patients.” He describes how terrorists make sweeping generalizations about their enemies. This, in turn, makes it easier to demonize them, so that the use of terror becomes equated, in the terrorist’s mind, with survival. Beck’s theories have been used by the National Center for Conciliation in Northern Ireland to help defuse tensions there.

Experts in the field of psychology at Yale agree that one of Beck’s most significant contributions is that he identified treatment components that could be tested empirically, and then he conducted the tests.

“Everyone has a therapy they think works,” says Alan E. Kazdin, PH.D., the John M. Musser Professor of Psychology and director of the Child Study Center. “But Dr. Beck took it to the next step. He developed a therapeutic model, a therapeutic technique and then he did the research.”

Beck, who developed treatment techniques for depression, wanted to test the commonly held belief that there is a correlation between depression and suicide. Through controlled studies, which have been replicated, he was able to show that it’s not depression per se, but rather feelings of hopelessness (which may or may not be associated with depression) that are predictive of suicide.

“Dr. Beck was not only able to show the efficacy of cognitive behavioral therapy for depression, but along the way, he developed tools like the Beck Depression Inventory that have become staples of clinical research,” says John H. Krystal, M.D. ’84, the Robert L. McNeil Jr. Professor of Clinical Pharmacology and deputy chair for research for the Department of Psychiatry. He added that Beck’s work, while primarily directed toward psychotherapy research, has stimulated research on the common neurological mechanisms underlying psychotherapy and pharmacotherapy. “Many psychiatrists like myself found the emergence of cognitive behavioral therapy to be a

factor that stimulated interest in the mechanisms underlying the interactions of pharmacologic and psychosocial treatments. Studying these complex interactions has become a major research focus.”

Kazdin says the treatment methods used for some aggressive and violent children at the Child Conduct Clinic, a specialty clinic affiliated with the Child Study Center, are “within the general rubric” of the techniques pioneered by Beck. “His techniques have been used primarily for adults diagnosed with depression and later, anxiety,” Kazdin says, “but there are variants of it that can be effective when used for children.”

“He’s grounded in the research tradition,” says Rounsaville. “He’s committed to seeing it through, to making sure his therapies meet the standards for efficacy.” Rounsaville, who is the director of the substance abuse treatment unit at Yale’s psychiatry department, said a new manual prepared by the unit draws on cognitive behavioral therapy techniques to help cocaine addicts. “This derives directly from Dr. Beck’s work,” he says.

Beck, 83, University Professor Emeritus of Psychiatry at the University of Pennsylvania School of Medicine and a member of the Institute of Medicine and the National Academy

of Sciences, was awarded the Rhoda and Bernard Sarnat International Prize in Mental Health last year. He still has an active research unit at Penn, studying the effectiveness of treating schizophrenic patients with a combination of medication and cognitive therapy. He has written or co-written 17 books on cognitive therapy, depression and other emotional disorders.

Beck said Yale’s philosophy of encouraging students to be curious and critical taught him to play with ideas and not just memorize facts. “It was the best possible system for my own personal development,” he says. “I learned to have an open mind and treasure learning for its own sake.”

—Jennifer Kaylin

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 ymm@yale.edu or write to Faces, Yale Medicine, P.O. Box 7612, New Haven, CT 06519-0612.



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Public health alumna watches over a growing cohort of female veterans

Irene Trowell-Harris' brothers and sisters must have thought she was joking when she pointed to a plane flying over their family's farm in rural South Carolina and declared: "One day I'm going to fly and work on an airplane."

"We all laughed," recalls Trowell-Harris, R.N., M.P.H. '73, ED.D. It did seem unlikely on that day in 1954 that their 14-year-old sister would ever set foot on an airplane. The children lived in a farmhouse that initially lacked running water in Aiken, S.C., and attended an all-black school. True, if anyone from the family was going to make it, it might be Irene, the third of 11 children. "I always had a lot of responsibility. I was the one who always stayed focused, made sure everybody did their schoolwork and housework and farm work," recalls Trowell-Harris.

Trowell-Harris did find a way to fly, as an Air National Guard nurse. And she rose steadily in the Air National Guard to reach the rank of major general—the first African-American woman to achieve that rank in the National Guard. A month after retiring from the Guard in September 2001, she accepted an appointment by President Bush as director of the Department of Veterans Affairs Center for Women Veterans. Her office monitors the welfare of the 1.7 million women who have served in the Armed Forces.

To get this far, Trowell-Harris combined realism with idealism. She made decisions that would give her maximum support in overcoming the barriers of poverty and racism. She chose nursing

because she knew she would always have a job, and she sought a career in the military because its rules to some extent protected her against discrimination (although it was not until 1974 that Congress required the Armed Services to drop its 2 percent cap on women in the military).

"I wanted to be successful. ... So I decided I would use my skills to work within the system. But all along, my goal was to help change the system later on, not just for myself, but for others."

As director of the Center for Women Veterans, Trowell-Harris works to ensure that female veterans know about the benefits available to them, including inpatient and outpatient health care, counseling, insurance and home and business loans. She also works with veterans affairs committees in Congress to introduce legislation that benefits female veterans. For instance, Trowell-Harris helped back a new law that provides money and services for disabled children of women exposed to the herbicide Agent Orange in Vietnam.

Trowell-Harris notes that services to female veterans will become increasingly important as the proportion of women in the military increases. Women now constitute 6.5 percent of the nation's 26 million living veterans, and the percentage will increase for two reasons: first, because the number of women in active service has risen, to 17 percent; and second, because male veterans, mostly from World War II, are dying at a rate of 1,400 per day.

Trowell-Harris was born just two generations away from slavery: her grandfather, Jim Trowell, was enslaved until he was in his early 20s. After the Civil War, a white family took him

From a farmhouse in South Carolina, Irene Trowell-Harris went on to become a nurse and major general in the Air National Guard.



SUSAN WHITNEY

under its wing, bequeathing him 50 acres in South Carolina that Trowell-Harris' parents gradually enlarged into a 200-acre farm. Trowell-Harris was born in the farmhouse in 1939 and grew up helping her parents raise cotton, corn, peas and watermelon and tend cattle, pigs and chickens. The family would pile into a mule-drawn wagon to go to town and to attend the Mount Hill Baptist Church on Sundays.

When Trowell-Harris finished high school, she considered her options. In 1955, "African-American females had three choices: secretary, teacher or nurse." Nursing would not only provide steady work, but it would allow her to earn money as an aide while she was a student, helping finance college for her brothers and sisters. (Among them would be another nurse, a pilot, three small-business owners and a physician.)

Trowell-Harris earned her nursing diploma on a Friday in the spring of 1959, and by Monday she was working two jobs. A hurricane had destroyed the family farm, and she was helping her family financially. "I felt frustrated, but I knew if I didn't help, we would lose the whole farm." It took two years for the family to get back on its feet, and then Trowell-Harris went north. She got further training as a psychiatric nurse at New York Hospital-Cornell Medical Center in White Plains, and then relo-

cated to New York City where she would work for 20 years. There she heard from a fellow nurse about the Air National Guard.

She signed up in 1963, and a year later she flew for the first time. On weekends, during vacations and during stints of active duty, she worked as a flight nurse on jets evacuating patients from battlefields, and she saw the world.

While serving in the Air National Guard, she spent two years at Yale studying for her master's in public health. The School of Public Health recognized her in June 2001 by naming her to its Alumni Public Service Honor Roll. She also earned her doctorate in education from Columbia University.

Now, in her spare time, Trowell-Harris attends the nationally known Mount Olive Baptist church in Arlington, Va., plays racquetball and rides on the bike trails near her suburban Virginia home. She was married for a decade, divorcing in 1983, and has no children, but she has helped 14 of her 32 nieces and nephews pay for college. At the family reunions she organizes every three years, she tells them to stay in touch, to keep their lives in balance and to keep learning. She advises them "to turn obstacles into steppingstones" and that persistence pays off. One of her stories illustrates this: early in her career in the Guard, a chief nurse warned her that she'd never make it past major, "no matter how good I was. I just thanked her and said 'OK.'" She went four ranks beyond major, to major general.

"Why do you think I have worked so hard within the system?" she asks. "To get it changed."

—Cathy Shufro

"Population doctor" applying tools of genomics in quest for prevention strategies

Seven years after his graduation, **Gualberto Ruaño**, PH.D. '92, M.D. '97, isn't content to treat one patient at a time. Instead he is continuing a long-term effort to personalize medicine through a population approach. "I really think of myself as treating the world," he said.

From 1992 to 1996, Ruaño was chief scientific officer and then CEO at BIOS Laboratories, a New Haven-based company that manufactured and sold genetics research products. Then, in 1997, he founded Genaissance Pharmaceuticals, a personalized medicine company that uses genomic data to guide drug-discovery strategies. Led by Ruaño as CEO, Genaissance went public in 2000, and the company is still operating at Science Park in New Haven, but Ruaño decided the time was right for a shift in focus—away from treatment and toward prevention.

Last autumn Ruaño launched Genomas, a company that will market diagnostic systems using genetic and physiological markers to assess nonpharmacological strategies for improving patient health. Ruaño predicts that prevention of obesity will be the first significant application of this technology.

"It's time to look at prevention with the same level of seriousness as we think of drugs," he said. "Everyone knows that prevention is good, but the results have been very mixed at best. ... Now the obesity epidemic will force us in the medical profession to apply cutting-edge science to develop strategies to optimize prevention."

Gualberto Ruaño is trying to understand how genes influence the way patients respond to diet, nutrition, exercise and environmental exposures.



FRANK POOLE

The goal of Genomas is to apply genomic technologies to understanding the way genes influence patients' responses to diet, nutrition, exercise and environmental exposures. The first step is to conduct research that will be as exacting and scientifically based as the controlled clinical trials that are required when new drugs are developed. "We have to find out what the genetic markers are and evaluate them," Ruaño said. At this point Genomas has a handful of employees and is self-funded, but it has licensed research findings in exercise genetics, and in June it became a bricks-and-mortar entity. Ruaño and Hartford Hospital announced a collaboration to explore the role of genetics in the ways people lose weight and respond to exercise. As part of their collaboration Genomas moved into office and laboratory space at the hospital.

Ruaño's aim is nothing short of creating an operating system for health care of the future. "The more we can customize care based on DNA, the more we can use our understanding of genomics to improve life and create new industries." But he's not stopping there. The next step, he said, is mental health. "Psychology is also influenced by the variability in people's genes, but stay tuned. That's for the next story."

—Jennifer Kaylin



Steven Scheinman



Nicholas Spinelli and Viola Spinelli



Sanford Cockerell



David Morton



John Kelly Jr.



H. Steven Moffic



Rebecca Taub

Alumnus named dean at SUNY Upstate

STEVEN J. SCHEINMAN, M.D. '77, HS '80, FW '84, professor of medicine and pharmacology and chief of nephrology at the State University of New York Upstate Medical University, has been named executive vice president and dean of the College of Medicine.

Scheinman's research on the genetics of kidney disease, with a focus on kidney stones, has been funded by the National Institutes of Health since 1985. He has been listed in *Best Doctors in America* and *Who's Who in America*. Scheinman, who joined the faculty at the upstate medical school in 1984, is the school's 21st dean since its founding in 1834 as Geneva Medical College.

Brother and sister honored by Bridgeport Hospital

Two Yale alumni were among six individuals honored for their support of Bridgeport Hospital at a recent celebration of its 125th anniversary. Throughout his career **NICHOLAS P.R. SPINELLI, M.D. '44**, has improved the lives of thousands as a physician in private practice, on staff and later as director of medical education at Bridgeport Hospital, and as director of the School of Medicine's alumni affairs office. His sister, **VIOLA J. SPINELLI, M.P.H. '65**, began as a research assistant at Yale, went on to manage her brother's medical practice and became an associate administrator, senior vice president and chief operating officer of Bridgeport Hospital.

1930s

Albert W. Diddle, M.D. '36, professor and chair emeritus of obstetrics and gynecology at the University of Tennessee Memorial Research Center and Hospital, is a life fellow of the American Gynecological and Obstetrical Society. He is also a member of the Central Association of Obstetricians and Gynecologists, the Continental Gynecological Society and Sigma Xi, The Scientific Research Society.

1940s

Sanford F. Cockerell, M.D. '45, of Independence, Mo., retired in 2000 from his pediatric practice after 50 years. His son, Charles, and daughter, Michele, took over the practice, which has eight other physicians, two nurse practitioners and offices in two cities. Cockerell says that his activities include racquetball, gardening and duck hunting. For the past 15 years he has served as president of the Independence Hunting Club, which maintains a waterfowl marsh 35 miles from his home.

David E. Morton, M.D. '48, HS '55, who retired from the practice of internal medicine in 1993, relinquished the post of managing partner of the Lake Medical Building in Pueblo, Colo., in January. Morton's first two grand children, Hina Kojima and Akemi Ozoa, were born in 2003. He still travels frequently to Denver to visit his daughter, and to Boston, Seattle, Japan and Europe.

1960s

John J. Kelly Jr., M.D. '69, HS '71, professor and chair of neurology

at the George Washington University Medical Center in Washington, D.C., was named to the Brown University Football Team of the Decade for the 1960s. Kelly played varsity football at Brown from 1962 through 1964 as a fullback and line-backer. He also played varsity baseball. He and other teammates were honored in Providence in November, when they were introduced during half time of the Brown-Penn game and at a dinner and reception that evening.

1970s

H. Steven Moffic, M.D. '71, professor of psychiatry and behavioral medicine at the Medical College of Wisconsin, is principal investigator for a grant from the U.S. Department of Health and Human Services for the provision of marriage enrichment services to Milwaukee's refugee community.

Rebecca A. Taub, M.D. '78, formerly executive Director of biology at Bristol-Myers Squibb, was named vice president of research, metabolic diseases, at Hoffmann-La Roche in Nutley, N.J., in March. Metabolic diseases, such as diabetes and obesity, are a major research focus of the company.

Ross M. Tonkens, M.D. '74, has been appointed global scientific head of cardiovascular therapeutics for Quintiles Transnational Corp., the world's largest contract research organization, in Research Triangle Park, N.C. Tonkens was a cardiologist in Beverly Hills before moving to Las Vegas, where he founded his own clinical research site

and started a venture capital fund. While in Nevada he also served as medical director for Intracorp, a Cigna HealthCare case management subsidiary, and managed several successful statewide political campaigns.

Virginia A. Zakian, Ph.D. '75, the Harry C. Wiess Professor in the Life Sciences and professor of molecular biology at Princeton University, has been named to the National Advisory General Medical Sciences Council. Council members, who serve four-year terms, perform the second level of peer review for research and research training grant applications assigned to the National Institute of General Medical Sciences. Zakian studies the structure and replication of eukaryotic chromosomes, using yeast as a model organism.

1980s

Michael D. Burg, M.D. '87, assistant clinical professor of medicine at the University of California, San Francisco, Fresno's Medical Education Program, is on sabbatical and serving as the Emergency Medicine Residency Program director at the Onze Lieve Vrouwe Gasthuis in Amsterdam, Netherlands. This hospital was the first in that country to start an emergency medicine residency.

David Fassler, M.D. '82, clinical associate professor of psychiatry at the University of Vermont College of Medicine, testified before the Psychopharmacologic Drugs Advisory Committee of the Food and Drug Administration in February on behalf of the American Psychiatric Association (APA). Fassler, a trustee of the



Ross Tonkens



Virginia Zakian



Mary Ann Gray



Eric Nestler



Samir Suresh Shah

APA and vice chair of the Assembly of the American Academy of Child and Adolescent Psychiatry (AACAP), addressed the diagnosis and treatment of childhood and adolescent depression and the safety and efficacy of antidepressant medication. At the request of the American Bar Association, he also testified before legislatures in Nevada, New Hampshire and Wyoming on bills to eliminate juvenile executions. Fassler helped draft and pass the APA and AACAP position statements on the juvenile death penalty, based on scientific evidence concerning adolescent brain development.

David M. Gaba, M.D. '80, director of the Patient Safety Center of Inquiry at the VA Palo Alto (Calif.) Health Care System and professor of anesthesiology at Stanford University, has been awarded the 2003 David M. Worthen Award for Academic Excellence. This award, the highest given by the Department of Veterans Affairs, recognizes outstanding achievements of national significance in health professions education.

Mary Ann (Fagan) Gray, PH.D., FW '87, owner of Gray Strategic Advisors, which advises public and private biotechnology companies, has joined the board of Dyax Corporation, a company that focuses on antibodies, small proteins and peptides as therapeutic products for unmet medical needs, particularly in the areas of inflammation and oncology.

Eric J. Nestler, PH.D. '82, M.D. '83, the Lou and Ellen McGinley Distinguished Chair in Psychiatric Research at the University

of Texas Southwestern Medical Center at Dallas, has been named one of 10 recipients of the Bristol-Myers Squibb Freedom To Discover Grant. Nestler will use the unrestricted grant to identify molecular and cellular changes that drugs of abuse produce in the brain, and to characterize the genetic and environmental factors that determine individual differences in the ability of the drugs to produce these changes.

Edwin Trevathan, M.D., M.P.H., HS '84, professor of neurology and pediatrics and director of the Pediatric Epilepsy Center at Washington University in St. Louis, has completed, along with his colleagues, studies of clinical data used to diagnose epilepsy and of outcomes of epilepsy surgery among children. Trevathan and his co-investigators are conducting population-based surveillance and epidemiological studies of autism, mental retardation and epilepsy among children in St. Louis.

1990s

Brian G. Cole, M.D., M.P.H. '95, and Yale College alumnus Lucas W. Campos, M.D., have launched Ivy League Pharmaceutical Consultants and Associates in Tyrone, Pa. Their mission is to produce and interpret sound evidence for new pharmaceutical applications. Cole also has practices in Hawaii and New York, and occasionally serves as a cruise ship doctor in North Africa, the Baltics, the Mediterranean, the Caribbean and, most recently, the Hawaiian Islands. "God has blessed me and I'm very grateful!"

Jeffrey M. Dembner, M.D. '96, has completed his neurological surgery training at Stanford University Medical Center and is now in private practice in Newport Beach, Calif. Dembner is also affiliated with Hoag Memorial Hospital Presbyterian.

Jiyon Lee, M.D. '96, is in private practice at Rye Radiology Associates in Rye Brook, N.Y., after training at Columbia Presbyterian. She and her husband have two children, Serena, 3, and Aaron, 15 months in March. Lee ran the Philadelphia marathon last fall where she saw former classmate **Eric A. Gomes, M.D.** '96, an internist in Princeton, N.J. She offers to talk with any medical students or radiology residents who are interested in seeing what a private practice environment is like in Westchester.

Jonathan M. Rothberg, M.S., M.P.H. '87, PH.D. '91, president and chief executive officer of CuraGen Corporation in Branford, Conn., was elected in February to The National Academy of Engineering (NAE). Rothberg's membership honors his contribution to the application of engineering principles to the mining of genomic information for the discovery and development of new drugs.

Samir Suresh Shah, M.D. '98, is completing fellowships in pediatric infectious diseases and general pediatrics at the Children's Hospital of Philadelphia, while working toward his master of science degree in clinical epidemiology at the University of Pennsylvania School of Medicine's Center for Clinical Epidemiology and Biostatistics.

2000s

Alicia L. Arbaje, M.D. '00, M.P.H., a Robert Wood Johnson Clinical Scholar at Johns Hopkins Medical Institutions, is focusing her research on problems related to fragmentation in the health care delivery system, in particular the difficulties that chronically ill patients face.

Michele Lynn Frascatore, M.M.S. '02, and Alan Francis Colwell were married on July 12, 2003, in Waterbury, Conn. Frascatore is a physician assistant at Middlesex Cardiology in nearby Middletown. Colwell is pursuing a master's degree in environmental science at the University of New Haven and works for GeoDesign in Middlebury as an environmental consultant.

Rocco Angelo Iannucci, M.D. '02, and Alisa Mary Marko were married on July 26, 2003, in upstate New York. Iannucci is a resident in psychiatry at Massachusetts General Hospital/McLean Hospital in Boston.

Neda N. Pakdaman, M.D. '00, has completed her residency in internal medicine at Stanford and is now an internist practicing in a multispecialty group. Pakdaman was married in May 2003.

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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Martha Brochin, M.D. '88, HS '91, died at age 45 on January 22 in New Haven. Brochin was a clinical instructor in pediatrics at Yale from 1991 until her death. She also had a private pediatric practice in Hamden, Conn., for the past 12 years.

Jordi Casals-Ariet, M.D., a Yale epidemiologist who almost died of Lassa fever while seeking the virus that causes it, died in Manhattan on February 10. He was 92.

Casals-Ariet established a taxonomy of more than 10,000 viruses. He came to Yale in 1964 when the Rockefeller Foundation moved its insect-borne infections program here. In 1969 he fell ill after working with Lassa virus, a hemorrhagic fever virus named for the Nigerian village where it was first detected. Although Casals-Ariet was saved by antibodies taken from a nurse who had survived Lassa fever in Africa, he stopped his research later that year after a lab technician on his team died.

After his retirement from Yale in 1981 he worked at the Mount Sinai School of Medicine in Manhattan. His last paper was published in 1998.

Allan J. Ersley, M.D., who while at Yale in the 1950s identified a hormone used in a synthetic form to treat anemic disorders, died on November 12 in Haverford, Pa. He was 84.

Ersley was on the faculty of Thomas Jefferson University in Philadelphia for 43 years. His best-known finding occurred in 1953 when he was working at Yale. He found that the rate of red blood cell formation in normal animals increased after they were injected with blood

plasma from rabbits that had been made anemic. He determined that the anemic condition led to an increase in levels of erythropoietin, a hormone that helps to generate new red blood cells. Years later the hormone was isolated from blood and genetically engineered to treat chronic anemia in chemotherapy patients and in people with kidney failure. It was also abused by athletes who took it to enhance their performance.

Helen A. Forbes, wife of the late Thomas R. Forbes, M.D., died on October 28 in Hamden, Conn. She was 97.

Forbes came to Yale in 1945 with her husband, who served as the Ebenezer K. Hunt Professor of Anatomy and as an associate dean of the School of Medicine. She was best remembered for organizing weekday teas, a tradition that had faculty and students mingling over tea and snacks prepared by faculty wives. She also worked with first-year medical students to plan the annual variety show, *Aesculapian Frolic*.

Cornelius P. Frey, M.D., HS '44, a general surgeon and plastic and reconstructive surgeon, died on January 22. He was 90.

During his career Frey was associated with George Washington University Hospital and was a member of the American Society for Surgery of the Hand. From 1949 to 1953 he was the team doctor for the Washington Redskins.

Richard H. Greenspan, M.D., professor emeritus at Yale School of Medicine, died on February 28 after a long illness. He was 78.

Greenspan graduated magna cum laude from Syracuse University College of Medicine in 1948. After training at Michael Reese Hospital and the University of Minnesota and a fellowship at the University of Minnesota Hospitals, he served as a captain in the U.S. Air Force. In 1960, he came to Yale as an assistant professor of radiology. Four years later he became professor of radiology and chief of chest radiology at the University of California, San Francisco.

Returning to Yale in 1973, as professor and chair of diagnostic radiology, Greenspan served as associate dean for clinical affairs from 1986 to 1991 and was granted emeritus status in 1994. He retired from active practice in 1999.

Greenspan was a founding member and president of the Fleischner Society and president of the Association of University Radiologists. He was an accomplished violinist and a member of the board of directors of the Neighborhood Music School in New Haven.

Frank D. Law, M.D. '49, HS '55, died on January 23 in Lewistown, Pa. He was 79.

Law served in the V-12 Navy, a college training program that began in 1943 to meet the need for commissioned officers in World War II. He was a member of the First Unitarian Church, the American College of Surgeons, the Philadelphia Academy of Surgery and the Philadelphia Committee on Trauma.

Anthony B. Minnefor, M.D., HS '65, an authority on infectious diseases, died on December 5 at his home in Morris Plains, N.J. He was 66.

After a fellowship in infectious disease at Johns Hopkins, Minnefor joined the Air Force and reached the rank of captain. He worked as a pediatrician in upstate New York and from 1980 to 1992 he was director of infectious diseases at St. Joseph's Hospital and Medical Center in Paterson, N.J. He lectured throughout the United States and Europe on infectious disease.

Robert H. Owens, M.D. '46, died on January 15 at the Mayo Clinic in Scottsdale, Ariz. He was 81. A urologist, Owens practiced medicine for more than 40 years and worked with patients at the Veterans Administration hospital in Kansas City, Mo., until shortly before his death.

Elroy R. Peterson, M.D., HS '46, died on October 7 at his home in Ames, Iowa. He was 85.

Peterson served as a physician in the U.S. Navy during World War II, first on a landing craft during the Normandy invasion and later on an aircraft carrier in the Pacific. After the war he came to Yale for a residency in internal medicine. In 1952 he joined McFarland Clinic, a physician-owned multispecialty clinic in central Iowa. He was a diplomate of the American Board of Internal Medicine and a member of the American College of Physicians and Alpha Omega Alpha.

James Radcliffe Jr., M.D. '38, died at his home in Fairhaven, Mass., on January 27. He was 93.

Radcliffe served in the Navy during World War II and was among the first physicians to arrive in Luzon in the Philippines after Allied forces retook the islands. After his honorable discharge as a lieutenant in 1946, he became the first board-certified specialist in internal medicine in New Bedford, Mass.

He founded the New Bedford Diabetes Association and served on the personnel board of the Fairhaven Visiting Nurse Association. He was chief of staff at St. Luke's Hospital in New Bedford from 1968 to 1972.

Richard H. Rapkin, M.D., HS '63, vice chair of pediatrics at the University of Medicine and Dentistry of New Jersey (UMDNJ), died of brain cancer on November 19. He was 68.

As a captain in the Army Medical Corps, Rapkin treated children of soldiers at Fort Leonard Wood in Missouri. He taught pediatrics at Rutgers Medical School, which subsequently merged with New Jersey College of Medicine and Dentistry to form UMDNJ. He was a practicing pediatrician in Somerville and pediatrician at the Somerset School in Warren for more than 30 years.

Franklin H. Schaefer, M.D., HS '49, died on February 2 in Elyria, Ohio, after a brief illness. He was 83.

After serving in the U.S. Army Medical Corps during World War II, Schaefer trained in pediatric diseases at Yale. In 1955 he became the first pediatrician serving Elyria, where he practiced medicine until his retirement in 1985. He was a member

of the Lorain County Medical Society and Elyria American Legion Post 12.

Cecil G. Sheps, M.D., M.P.H. '47, professor of social medicine and epidemiology and vice chancellor for health affairs at the University of North Carolina, died at his home in Chapel Hill of pneumonia on February 8. He was 90.

Sheps was a founding member of the Institute of Medicine of the National Academy of Sciences and a member of the New York Academy of Medicine. He was former director of Beth Israel hospitals in New York and Boston and a professor at Harvard Medical School. He also taught at the Mount Sinai School of Medicine. Sheps served with the Royal Canadian Medical Corps during World War II.

Robert E. Shope, M.D., an authority on infectious diseases and professor emeritus in the Department of Epidemiology and Public Health, died on January 19 in Galveston, Texas, of complications from a lung transplant. He was 74.

At the time of his death Shope was working at the University of Texas Medical Branch in Galveston. He went to Texas in 1995 after a 30-year career at Yale. One of the leading virologists of his generation, he led or participated in investigations of Rift Valley fever, Lassa fever, Venezuelan hemorrhagic fever, yellow fever and other diseases. He served as president of the American Society for Tropical Medicine and Hygiene and

received the Bailey K. Ashford Award, the Richard M. Taylor Award, the Walter Reed Medal and numerous other prestigious awards and citations.

Shope came to Yale in 1965 as an assistant professor of public health. He was director of the Yale Arbovirus Research Unit, director of medical education and head of the Division of Infectious Disease Epidemiology. His travels took him to almost every part of the world where mosquitoes or rodents harbor viruses.

Lawrence C. Sylvia, M.D., HS '65, former medical director of the Central Jersey Blood Center, died on November 15 at his home in Ocean, N.J. He was 70.

During his career Sylvia held faculty appointments at Tufts, Yale, Harvard and Hahnemann universities. He was director of laboratories at Monmouth Medical Center in Long Branch, N.J. He was also a fellow of the College of American Pathologists and a member of the National Board of Medical Examiners.

Arthur A. Terrill, M.D. '48, died at age 79 on January 13 at the Army Residence Community in San Antonio, Texas. A colonel in the Marine Corps, Terrill was on active duty until 1982. He was a diplomate of the American Board of Surgery and a fellow of the American College of Surgeons.

William P. Walsh, M.D. '46, who maintained a private medical practice in New Bedford, Mass., died on December 25 at his home. He was 81.

Walsh served in the Navy during World War II. He was a member of the American

Medical Association, the Massachusetts Medical Society and the New Bedford High School Football Fathers Club and a former board member of the New Bedford Boys & Girls Club.

Myron E. Wegman, M.D. '32, HS '36, M.P.H., professor and dean emeritus of the University of Michigan School of Public Health, died on April 14 in Ann Arbor, Mich., of congestive heart failure. He was 95.

For more than 40 years, starting in 1949, Wegman conducted an annual summary of vital statistics. The report, published every December in *Pediatrics*, the journal of the American Academy of Pediatrics, is a compendium of government records on births, fertility rates, infant mortality and other data. Wegman was an early proponent of broad training programs to modernize maternal and child health care. To combat infant mortality he taught rural doctors about advances in pediatrics. Before arriving at Michigan, he spent eight years with the Pan American Health Organization, a regional office of the World Health Organization. He served as president of the American Public Health Association, the Association of Schools of Public Health and the Pan American Health and Education Foundation.

SEND OBITUARY NOTICES TO

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Back to Africa

Early in 2002, Karen M. Schmidt, M.P.H. '00, described for readers of *Yale Medicine* her HIV prevention work in Kenya—and how it helped her avoid a traffic ticket (See “Moving Beyond Fear,” Winter 2002). Later that year she returned to the United States to begin working as a consultant. Her subsequent assignments took her to the Philippines and Ethiopia. She also worked on adolescent reproductive health manuals for programs in Botswana, Tanzania, Ghana and Uganda.

In December, a year after her departure from Nairobi, she returned to East Africa to work for the Center for Global Health and Economic Development, a joint project of the Earth Institute at Columbia University and Columbia's Mailman School of Public Health. She plans to spend about a year as a technical advisor to the Ministry of Health in Kigali, the capital of Rwanda, the site of massacres a decade ago that killed between 800,000 and 1 million people. The country is calm, Schmidt says, but people refer to “the events of 1994” and signs of the genocide remain. “The Parliament building and a few others still have bullet holes.”

Known as the *pays des mille collines* (land of a thousand hills) in French, one of three languages spoken there along with English and Kinyarwanda, Rwanda is a tiny, densely populated country just south of the equator.

“My job is to get people talking and to encourage the government to keep moving towards better health care financing mechanisms,” says Schmidt. “I work for a project called MacroHealth, which is helping countries implement the findings of the World Health Organization's Commission on Macroeconomics and Health, and I will be working a bit on the Access Project, which helps countries that are applying for or have received money from the Global Fund To Fight AIDS, Tuberculosis and Malaria.”

As often as not, she spends her days overcoming what elsewhere might seem like minor obstacles. “Massive amounts of money are flowing into health,” she says, “but it's all earmarked for projects, so if the ministry runs out of paper or fuel or can't pay its phone bill, you have to cope.”

—John Curtis



MAY 1954

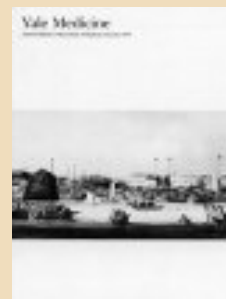
Alumni Bulletin

The Yale-New Haven Medical Center

“The Yale School of Medicine and the Grace-New Haven Community Hospital will expand their affiliated activities under a new program to be known as the ‘Yale-New Haven Medical Center.’ Both the School and Hospital will retain their independent corporate structures but will embark on a joint development program for care of patients and for medical research and teaching, thus providing southern New England with a major medical center similar in concept to the Columbia-Presbyterian Medical Center in New York City.

“The joint announcement of the medical center plans was made in February by President A. Whitney Griswold of Yale and President George S. Stevenson of the Hospital. They explained that the immediate objective of the Yale-New Haven Medical Center Plan would be the development of a program of public relations, fund raising promotion, and program development. ‘Experience of other great medical centers,’ they said, ‘shows that hospital and medical school functions and activities cannot be separated when presenting programs to the public. Strengthening and support of one of the partners materially assists the other.’

“Hiram Sibley has been appointed Director of Program Development for the new medical center. Mr. Sibley is an authority on hospital finance and has served as Executive Director of the Connecticut Hospital Association since 1948.”



SUMMER 1979

Yale Medicine

Peter Parker: Physician—Missionary—Diplomat

“It has been said that Peter Parker opened China at the point of a lancet. When he arrived in that far country in November of 1834 at the age of thirty, after a voyage of 140 days, it was at a time in history when the Chinese were giving scant welcome to Western ‘barbarians.’ Their culture was viewed with contempt, their commercial ambitions with suspicion. But in Peter Parker's lancet they discovered healing and relief from many conditions hitherto considered hopeless, and as thousands passed through the hospital he founded in Canton in 1835, it might be said that Parker did in truth open China in a way never achieved by the blasting guns of British men-of-war.

“Parker has been the subject of two biographies (G.B. Stevens and W.F. Markwick, 1896, and E.V. Gulick, 1973) and a number of shorter studies—most recently by C.G. Roland and J.D. Key (1978) and Peter Pitt (1971) and earlier, several by members of the Yale faculty: Samuel C. Harvey, Charles J. Bartlett, Eugene M. Blake, Harvey Cushing, the Rev. Kenneth S. Latourette, Levin W. Waters, and others interested in him as ‘initiator of modern medicine in China,’ ‘the founder of modern medical missions,’ ‘Yale's first ophthalmologist,’ and Commissioner to the Chinese Empire, for in addition to distinguished service as physician and missionary, he represented the United States officially in his later years in fostering friendship and understanding between the two nations. This article will focus on Parker the diplomat.”



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