Scientist is doubly honored for protein-folding breakthroughs

Last October marked a month to remember for the School of Medicine’s Arthur L. Horwich, M.D., Sterling Professor of Genetics and Pediatrics. Over the course of two days, Horwich was elected to the Institute of Medicine (IOM) and named a winner of the 2008 Louisa Gross Horwitz Prize by Columbia University for his outstanding contributions in biology and biochemistry.

Horwich, a Howard Hughes Medical Institute investigator, is one of the world’s leading experts on the molecular mechanisms of protein folding, a process crucial to life. When proteins misfold, they can accumulate inside cells and cause illness. More than 20 diseases, including neurodegenerative disorders such as Alzheimer’s disease, Huntington’s disease and amyotrophic lateral sclerosis (Lou Gehrig’s disease), have been linked to protein misfolding. Horwich was one of 64 people chosen for their exceptional achievement in health and medicine for election to the IOM, an organization that is unique in its combined honorific and advisory roles. Established in 1776 by the National Academy of Sciences, the IOM is a national resource for independent, scientifically informed analysis and recommendations on human health issues.

First awarded in 1967, the Horwitz Prize is one of the top prizes in biomedical science; about half the Horwitz recipients have gone on to win a Nobel Prize. This year’s award was shared by Horwich, Franz-Ulrich Hartl, M.D., Dr.Med., of the Max Planck Institute of Biochemistry in Germany, an early collaborator on Horwich’s research, and the late Rosalind Franklin, Ph.D., honored posthumously for her X-ray crystallography work in the early 1950s, which was instrumental in the discovery of DNA.

Horwich was elected to the National Academy of Sciences in 2003, and has been a member of the medical school faculty since 1984. He holds undergraduate and medical degrees from Brown University and completed his residency in pediatrics at Yale-New Haven Hospital.

A brother’s generosity and an uncle’s skill live on in endowment

On a recent visit to the School of Medicine, Roy Pologe, of Hartsdale, N.Y., recalled the many weekends at his childhood home when his parents sat at the kitchen table sorting through paperwork. Pologe’s father had a private surgery practice, for which his mother handled the billing. “They would sit around the table and discuss accounts receivable—which patients hadn’t paid, and which ones couldn’t pay,” Pologe says. “Certainly my father had his own expenses and bills to pay, but more often than not he wound up making the decision that was best for the patient.”

In keeping with that spirit of generosity, Roy’s father, Irving M. Pologe, M.D., a New Haven plastic surgeon, dentist and voluntary faculty member in the Department of Surgery’s Section of Plastic Surgery from 1964 to 1997, is one of two members of his family to be honored recently with a named professorship. The other, Roy’s great-uncle, Silik H. Pologe, Ph.D., earned his graduate degree from Yale in 1921 and worked as a pathologist in New York. The $2.5 million gift endowing the new Horwich Professorship in Surgery was made by Pologe, page 6
Flu shots meet the ballot box in Yale public health expert’s effort

Some voters completing one essential fall ritual by casting their ballots last Election Day could simultaneously take part in another—getting vaccinated against the flu.

Douglas Shenson, M.D., M.P.H., associate clinical professor at the Yale School of Public Health, organized the effort, which marks the first time that flu vaccination clinics were set up within or nearby select polling stations on a national scale. The “Vote & Vax” program operated 300 clinics in 43 states and the District of Columbia, including 11 clinics in Connecticut. Individuals most at risk from influenza—those who are over 50 years old—are also the people most likely to vote, and Shenson hoped to provide these people with a convenient way to get vaccinated. “Vote & Vax is a public health strategy designed to better protect vulnerable Americans against influenza,” Shenson says. “During national elections, polling places offer an extraordinary public health opportunity to reach very large numbers of older adults on a single day, early in the flu shot season.”

The non-partisan program was funded by the Robert Wood Johnson Foundation and directed by the Connecticut-based SPARC (Sickness Prevention Achieved through Lifelines) program. 

Nurse Lesley Anderson gave vaccinations on Election Day in Milford, Conn.

Regional Collaboration), a nonprofit health agency that Shenson directs. The idea began in 2006 as a pilot program that reached some 13,000 people. Shenson said he wants to see the program continue in subsequent election cycles until it becomes a routine part of public health practice.

Student-run auction benefits charities in New Haven region

The 16th Annual Hunger & Homelessness Auction, a student-run event that combines entertainment with charitable giving, was held last November, raising $13,000 for several organizations in the New Haven area.

“This is about giving back,” said auctioneer Wade Brubacher, a professional from Kansas and father of third-year medical student Jacob Brubacher, in his third appearance as auctioneer at the event. “You won’t make money at it, but you’ll feel good.”

Since its inauguration as an afternoon event in 1993, the event has expanded to include a week of activities that include a football game between first- and second-year medical students, a performance of chamber music, a panel discussion on hunger and homelessness and film screenings.

The week ends with silent and live auctions in the School of Medicine’s Harkness Ballroom and at Marigold’s, a nearby dining hall.

Among the available items at the silent auction were works of art, services by students and faculty, dinners at homes and restaurants, quilts, jewelry, a mysterious item listed as “Mediter- ranean Dinner & Debauchery,” concert tickets and homemade brownies.

Medicine@Yale

Contributors: Jerry Blak, John Curtis, John Dillon, Jason Betti Pizziello, Valerie Plakhvina, Renee Gaudet, Charles Germain, Michael Greenerout, Jane Halpin, Michael Hafanson, Jennifer Kepes, Suzanne Taylor Martin, Karen Poit, Richard Peterson

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Pushing the envelope

Neurosurgeon, geneticist sees a day when doctors can head off catastrophic stroke

In 2006, self-styled endurance artist David Blaine, equipped with a breathing tube, had himself sealed inside a transparent water-filled sphere in front of New York’s Lincoln Center, where he planned to remain for seven days. The performance attracted thousands of gawking passersby and countless Internet voyeurs, but Murat Günel, M.D., the head of Blaine’s medical team, observed the proceedings from a nearby tent, where he monitored Blaine’s condition around the clock.

Günel, professor of neurosurgery and neurobiology at the School of Medicine and chief of the Section of Neurosurgical Surgery, says that the bravado of Blaine’s public persona belies his intellectual nature. “He explores life in a different manner than I do, but we are joined in a quest for life,” Günel says. “He always pushes the envelope.”

Günel feels some limits himself, combining a neurosurgical practice with an ambitious research program in human genetics. His main interest is intracranial aneurysms, weaknesses in the brain’s blood vessels that can balloon, putting pressure on brain tissue, or rupture, causing hemorrhagic stroke. The Turkish-born Günel’s interest in the field was partly stimulated by the work of his compatriot, M. Gaz% Yag%r%lg, M.D., a famed Turkish neurosurgeon who pioneered the use of surgical microscopes to treat aneurysms with clips that can prevent rupture.

However, most brain aneurysms, which affect 500,000 people worldwide each year, have no symptoms. Rupture is fatal in up to 40 percent of cases, and survivors usually have severe neurological damage. Over the years, Günel has seen the introduction of less invasive repair techniques and improvements in intensive care unit procedures for those who have suffered a brain hemorrhage, but from the beginning of his residency at Yale in 1991, he has wanted to identify genes that put people at risk, so that neurosurgeons could someday intervene before aneurysms rupture. In 1993, Günel approached Richard P. Littton, M.D., Ph.D., chair and Sterling Professor of Genetics and a world-renowned figure in the genetics of human disease, about exploring the genetic basis of aneurysms. Littton advised him that the field hadn’t sufficiently developed to tackle so complex a problem, and suggested that Günel study cerebral cavernous malformations (CCMs), a less serious vascular irregularity in the brain that clearly runs in families. Over the last 15 years, Günel, Littton and colleagues have zeroed in on genes that cause CCMs.

In collaboration with William C. Sessa, Ph.D., professor of pharmacology and director of the medical school’s Program in Vascular Biology and Transplantation, Günel and other Yale scientists are using this knowledge to conceive therapies that could enable the body’s own repair mechanisms to prevent the development of CCMs altogether.

In the last few years, technology advanced to the point that Günel and Littton were finally able to launch a genomic study of intracranial aneurysms, an international venture that involved 10,000 research subjects in Finland, the Netherlands and Japan. In a paper in Nature Genetics in December, the team reported variations in three genetic regions associated with a greater risk of intracranial aneurysm and proposed a likely causative role for two specific genes. The study population has since grown to 15,000 people, and Günel says that more detailed genetic data on aneurysm risk should soon emerge from his research.

Most Yale neurosurgery residents wish to pursue research, so Günel is often asked how he balances his genetics work with his clinical practice. His answer? “I give both 100 percent.” David Blaine would approve.

Lifelines

Murat Günel

Skilled in the surgical repair of brain aneurysms, Murat Günel is also leading genetic studies to identify those most at risk of developing these often-fatal vascular defects. Günel, co-director of the Yale Neurogenetics Program, says his work could help neurosurgeons find and repair aneurysms before hemorrhagic stroke causes disability or death.
Hope sustains center’s research on paralysis

Veterans join scientists to fight spinal cord injuries and neurological diseases

When Stephen G. Waxman, M.D., Ph.D., moved from Stanford’s School of Medicine to Yale in 1986, he didn’t pack light: he brought with him several scientists, including Jeffery D. Kocsis, Ph.D., and Joel A. Black, Ph.D., and a million dollars’ worth of equipment.

On arrival, Waxman, now the Bridge Marie Flaherty Professor of Neurology, Neurobiology and Pharmacology, set up shop on the campus of the VA Connecticut Healthcare System in West Haven, Conn., where, with financial backing from groups of paralyzed veterans, including the Paralyzed Veterans of America (PVA), he established the Center for Neuroscience and Regeneration Research (CNRR).

Scientists at the CNRR, which marked its 20th anniversary last October with the opening of a new $1.8 million wing, are doing some of the foremost research on restoring function after spinal cord or brain injury.

There, Waxman, CNRR director and longtime chair of the medical school’s Department of Neurology, and associate director Kocsis and Black lead a staff of thirty-odd Yale physiologists, pharmacologists and stem cell biologists working on cellular repair of the spinal cord and brain using transplanted cells and stem cells; molecular repair of demyelinated cells in disorders such as multiple sclerosis (MS); and understanding the basis of neuropathic pain, or long-term pain experienced after injury to the nervous system (or, in some cases, when there is no injury at all).

While scientifically diverse, the center’s investigators are united by a common desire to reduce patients’ discomfort and restore function to paralyzed limbs. “We know from earlier experiments that if we can coax just 15 percent of the axons in the motor tract of the spinal cord to conduct impulses, it will restore gait,” Waxman says.

“We won’t be making somebody into a ballet dancer, but imagine telling somebody who’s confined to a wheelchair that they could take ten labored steps—enough to get from their wheelchair into a car. Or giving somebody who has no function below the shoulders just enough function in their spinal cord so they can grasp and use a pencil.”

The key to realizing such hopes for people like the 100 wheelchair-bound veterans who arrived to fête the CNRR’s 20th year, Waxman says, is continued research. His group has found, for instance, that remissions occur in MS without the production of new myelin, an insulating sheath that coats nerve cell axons and is vital for the conduction of nervous signals in the brain and spinal cord. Rebuilding myelin axons can rebuild themselves in disorders like MS, and we know they produce new sodium channels, which act as batteries within their membranes so they can convey information, even though they have lost their myelin insulation,” Waxman says. “Now, we want to be able to turn that process on and off at will.”

While myelin may not always be necessary for improvements in nerve conduction, remyelination certainly does help. Kocsis’s group is interested in remyelination therapies for spinal cord repair based on adult stem cells derived from bone marrow. Kocsis, professor of neurology and neurobiology, has found that such cells do not need to be implanted directly into the brain or other injured sites, but can be delivered intravenously and still lead to the production of new myelin and improved condition. In cases of non-penetrating, or closed, spinal cord injury, often caused by motor vehicle accidents or athletic mishaps, Waxman says, “It used to be thought they had cut the cord across. They usually don’t. Axons run up and down through the lesion in continuity, but they don’t conduct because they’ve lost their myelin insulation. And we view that as a target of opportunity.”

Will victims of paralysis someday be able to regain function? “You need luck as well as everything else,” Waxman says. “If I was sure that a particular path would get you there, we would do it and get there. So we are taking multiple, parallel approaches. But I think that with hard work and a bit of luck, we may well get there.”

Medicine>tomorrow

Charitable gift annuities: a good choice for today’s economy

With the recent instability of the nation’s financial markets, many are wondering how to maximize their investment returns while safeguarding their funds. A charitable gift annuity will provide fixed income to you now at an attractive rate and will support Yale School of Medicine in the future.

HOW IT WORKS

1. You transfer cash or securities to a Yale gift annuity.
2. Yale pays you, or up to two annuitants you name, a lifetime annuity.
3. The remainder passes to the School of Medicine, for the purpose you designate, when the contract ends.

BENEFITS

• You receive an immediate income tax deduction for a portion of your gift.
• Your lifetime annuity is backed by all of Yale’s assets.
• Your payments are treated as part ordinary income, part capital gains income and part tax-free income.
• You have the satisfaction of making a significant gift that benefits you now and the School of Medicine in the future.

For more information or a personalized charitable gift annuity illustration, visit http://yaleplanyouroilgacy.org/GIFTcharity.php or contact Lancy Huen, associate vice president for development and director of medical development, at (203) 436-8560.

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Out & about

September 13, 2008: Dramatic lighting and elegant décor transformed Yale’s historic Commons for a BLACK AND WHITE BALL, the Discovery to Cure Gala sponsored by the Gynecologic Oncology Program of Yale Cancer Center (YCC). The gala benefitted YCC’s efforts in the early detection and effective treatment of women’s reproductive cancers. The event, which drew about 300 attendees, also featured a silent auction in the President’s Room in Woolsey Hall and dancing.

1. (From left) Jacques Dickinson and Stefanie Ercegovic with Thomas J. Rutherford, Ph.D., M.D., associate professor of obstetrics, gynecology and reproductive sciences.
2. (From left) Gala co-chairs Jacques Dickinson and Stephanie Ercegovic with Thomas J. Rutherford, Ph.D., M.D., associate professor of obstetrics, gynecology and reproductive sciences; and Arlene Schwartz. Music was provided by Flamingo, an all-female swing band. (From left) Richard L. Edelson, M.D., the Aaron B. and Marguerite Lerner Professor of Dermatology and YCC director; Hank and Nancy Bartels; and Dean Robert J. Alpern, M.D.

November 3, 2008: Robert and Beverly Bartner paid a visit to the School of Medicine to celebrate the establishment of THE BARTNER DISCOVERY SCHOLAR in the Department of Pediatrics, which provides support to a promising young scientist whose research will make an impact on clinical practice. Associate Research Scientist Julie E. Goodwin, M.D., who studies kidney disease, is the first recipient of the award. (From left) Alda Tufro, M.D., Ph.D., associate professor of pediatrics and section chief of pediatric nephrology; Beverly Bartner; Goodwin; Robert Bartner (seated); Margaret K. Hostetter, M.D., chair and Jean McLean Wallace Professor of Pediatrics; and Robert J. Alpern, M.D., dean and Ensign Professor of Medicine.

December 8, 2008: Yale’s Woolsey Hall was the setting for GRADUATION CEREMONIES FOR THE PHYSICIAN ASSOCIATE PROGRAM of the School of Medicine.

2. The Commencement address was given by Alfred M. Sadler Jr., M.D., who co-founded Yale’s program in 1970. 3. Mary L. Warner, M.S., dean of the Physician Associate program, presents Adam Cohn with the Dean’s Award for Academic Achievement.
4. Robert and Beverly Bartner paid a visit to the School of Medicine to celebrate the establishment of THE BARTNER DISCOVERY SCHOLAR in the Department of Pediatrics, which provides support to a promising young scientist whose research will make an impact on clinical practice.
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The newly identified variation, which compromises let-7's regulation of a cancer-associated gene called kras, was found in 5.8 percent of a sample of world populations, but in 20 percent of patients with non-small cell lung cancer (NSCLC), the researchers estimate that moderate smokers carrying the variation are 1.4 to 2.3 times as likely to develop NSCLC.

Dominique Larrey, the chief surgeon of Napoleon's armies and a pioneer of military medicine, knew something of mass casualties. In the early 19th century, while accompanying Napoleon on his various campaigns, Larrey devised rules of triage (from the French trio, “to select” or “to sift”) by which soldiers needing medical attention were sorted according to the severity of their injuries, regardless of rank. Triage is still standard practice in mass-casualty emergencies, often in the form of Simple Triage and Rapid Treatment (START) system, which assigns color codes to patients depending on their condition. For example, a victim might be color-coded as red, meaning he needs medical help immediately; yellow, meaning he will need help soon; green, meaning he has minor injuries; or black, meaning he cannot be helped with available resources.

Rules like these help rescuers choose a course of action in chaotic situations. Imagine being the first paramedic on the scene after a tanker truck has plowed into a bus. Traffic is snarled, cars are honking and people are screaming. Who needs attention most—the man on the concrete holding his bloodied knee or the woman on her back with closed eyes? What about the people inside the overturned bus? And what is that white vapor drifting out of truck's tank?

Yet although rules of triage exist to help rescuers, it is difficult to evaluate whether those rules actually save lives. Though the START system is decades old, says David C. Cone, M.D., associate professor of surgery and of epidemiology, “we have no idea if it works.” Cone, director of the Division of Emergency Medical Services (EMS) in the medical school’s Section of Emergency Medicine, studies how EMS should be deployed after chemical, biological and nuclear terrorist attacks, and he has run disaster simulations at Tweed-New Haven Airport complete with volunteers smeared with fake blood. But triage research is inherently difficult. For one thing, says Cone, “we don’t even know what we want a mass-casualty triage system to do.” In the best system the one that’s easiest to teach, the quickest to apply or the one that saves the greatest number of lives? The complexities mount when one considers that every disaster is unique, making it almost impossible to compare triage systems in the real world.

While studying in Italy for a master’s degree in disaster management in 2004, Cone saw a virtual reality (VR) simulator used to train firefighters and realized that the software could be adapted for triage research. Developed by the Dutch company E-Semble, the simulator looks like the highly realistic video game Grand Theft Auto. Learners at a laptop “walk around” a vivid scene, assessing and triaging victims. Dangers and distractions, like toxic spills or television reporters, can be added to the scenario. The learners are timed and their actions entered into a database that can then be analyzed. Working with emergency medicine resident John Serra, M.D., and supported by the Centers for Disease Control and Prevention and the Lerner Foundation, Cone plans to teach paramedic students two different triage systems several months apart, then compare how they did with each system in identical VR scenarios. “Once we get the software tuned, then we can design the larger studies,” says Cone, who plans to use the tool to explore whether rules for triage are even necessary, or whether experienced rescuers are better off relying on their accumulated clinical wisdom.

One day, VR tools may allow triage researchers around the world to collaborate, exchange scenarios and compile “libraries” of standardized victims. Cone hopes his work with controlled VR environments will allow for real progress in triage research and ultimately save more lives during real disasters.
involved in the development of breast
tumors are worth it. “When I see the

Bob had trekked across campus to the

try at the School of Medicine to take

human requirements for vitamin B1

Department of Physiological Chemis-

George Cowgill, seen in front of Sterling

and I felt that he and my uncle should

say, “it is a great satisfaction.”

of gastrointestinal malignancies, particularly pancreatic cancer, in

advancing clinical trials to test new
drugs and treatment regimens, and

he is enrolling patients in Phase I and II
clinical trials at Yale. Information

on these trials can be found at http://
yaletrials.org. Saif is also working

with a group of researchers to develop a
pancreatic cancer serum in high-risk
patients, such as those with mutations
in the BRCA1 and BRCA2 genes that are
involved in the development of breast
and ovarian cancer; researchers believe
such patients are also at greater risk
for pancreatic cancer.

Pancreatic cancer continues to
challenge physicians, and effective
screening guidelines are still a long
way off; but Saif believes the frustra-
tions are worth it. “When I see the
smiles on the faces of patients who are
living longer because of our efforts,”
he says.

mentors from page 1

College Class of 1936. While earn-
ing his undergraduate degree at Yale,
Bob had trekked across campus to
the Department of Physiological Chemis-
try at the School of Medicine to take
graduate-level courses under the wing

an authority on the

classic textbook that, in its 12th revised
edition, is still the universal reference
book in the field.

McNeil, former chairman of the
board of McNeil Laboratories, looks
back fondly on his formative years in
Sterling Hall of Medicine, and he has
generously memorialized these Yale
faculty members with recent gifts
to the School of Medicine that total
$8 million. The gifts will endow a
George B. Cowgill Professorship,
designated for a top School of Medicine
educator with expertise in physiological
chemistry, and a Yale Scholar endow-
ment named in honor of Goodman and
Gilman. The Yale Scholars program is
a recent initiative of Dean Robert J.
Alpern, M.D., which awards four years
of research funding to the most prom-
ising new researchers recruited at the
medical school.

“I have wanted to help the medical
school in any way I can. I’m especially
excited about Yale’s leadership in trans-
lational research, including its recogni-
tion with the Clinical and Translational
Science Award,” says McNeil, regarding
the $75 million grant from the National Institutes of Health to the School of
Medicine in 2006 aimed at accelerating
the translation of discoveries in basic
biomedical science into practical treat-
ment for diseases. “As an undergradu-
ate, one of my outstanding teachers
was Professor Cowgill at Yale School
of Medicine, and I wanted to make cer-
tain that he would be remembered for
the great scientist, mentor and teacher
that he was. It was also important to
me to make sure that the Goodman
and Gilman textbook would be forever
linked to the School of Medicine, where
it was conceived and written.”

McNeil’s newest gifts are the latest
of many donations to Yale Univer-
sity and the School of Medicine. His
endowment in 2006 of the Robert L.
McNeil Jr. Professorship in Transla-
tional Research, now held by psychia-
trist John Krystal, M.D., an expert on
schizophrenia and alcoholism, antic-
ipated the medical school’s current
emphasis on translational research.

“Mr. McNeil is acknowledg-
ing a period of time in his life that
he believed helped shape his career
and nurtured his passion for medi-
cal science, and particularly clinical
pharmacology” says David J. Leffel,
M.D., deputy dean for clinical affairs
and professor of dermatology, who has
known McNeil for almost a decade.

“Even back then, the School of Medi-
cine was a resource for Yale College
undergraduates,” says Leffel, who did
research at the medical school during
his own undergraduate years at Yale
and sees McNeil as a kindred spirit. “It
created an environment that attracted
the best and the brightest from Yale
College and from other schools.”

Over its first few decades the
pharmacy founded by the McNeil
patrician built a world-class reputation
as provider of over-the-counter medica-
tion, pain relievers, and vaccines.
However, McNeil, a graduate of the
University of Pennsylvania’s Wharton School,
joined the firm, focusing on its
pharmacy business and financial strat-
egies. “I have wanted to help the medical
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‘Green’ initiatives improve medical school toward sustainability

In an era of worries about climate change and highly volatile energy prices, ‘sustainability’ is on everyone’s lips. The School of Medicine is doing its part, and sometimes all it takes are some hand-me-down jeans.

Denim discarded in the jean manufacturer’s process, which now helps insulate the C wing of Sterling Hall of Medicine (SHM), is one of many recycled materials that are lightening Yale’s carbon footprint. The building’s recently renovated lab casework, ceiling tiles and walls, even some of the columns, also come from recycled material, such as wheat straw board and soy-based interior windows—materials that conserve water and heat.

Yale’s overall sustainability strategy began with the student-initiated Yale Green Plan in 1998. In 2002, the university’s Advisory Committee on Environmental Management proposed a set of environmental principles, and in 2005 President Richard C. Levin committed the university to reducing greenhouse gases to 43 percent below 2005 levels by the year 2020.

Implementing sustainable labora-
yor renovations that could be bench-
scaled and measured by the department and the Medical School. The project proved the standard wasn’t a simple process. Success is measured in this realm by the U.S. Green Building Council’s Leadership in Energy and Environmental Design (LEED) standards, which orga-

Grants and contracts awarded to Yale School of Medicine

March/April 2008

Federal

With funding from the National Institutes of Health, Lawrence Cohen, professor of cellular and molecular physiology, is using optical techniques to map the activity of large populations of neurons. Here, the neural signature of the odorant cineole in the olfactory bulb is being mapped. In the future, Cohen hopes to see a neural signature of the odorant cineole in the olfactory bulb.

In an era of worries about climate change and highly volatile energy prices, "sustainability" is on everyone’s lips. The School of Medicine is doing its part, and sometimes all it takes are some hand-me-down jeans. Denim discarded in the jean manufacturer’s process, which now helps insulate the C wing of Sterling Hall of Medicine (SHM), is one of many recycled materials that are lightening Yale’s carbon footprint. The building’s recently renovated lab casework, ceiling tiles and walls, even some of the columns, also come from recycled material, such as wheat straw board and soy-based interior windows—materials that conserve water and heat.

Yale’s overall sustainability strategy began with the student-initiated Yale Green Plan in 1998. In 2002, the university’s Advisory Committee on Environmental Management proposed a set of environmental principles, and in 2005 President Richard C. Levin committed the university to reducing greenhouse gases to 43 percent below 2005 levels by the year 2020.

Implementing sustainable labora-
yor renovations that could be bench-

Virginia Chapman oversees construction and renovation projects at the School of Medicine and is working toward recycling usable materials and conserving energy.
At its annual meeting last November, the American Society of Nephrology (ASN) awarded the 2008 John P. Peters Award to Robert J. Alpern, M.D., dean of the School of Medicine. The award honors “individuals who have made substantial research contributions to the discipline of nephrology and have sustained achievements in one or more domains of academic medicine including clinical care, education and leadership.”

Alpern’s career has combined research, teaching and administration in equal measure. He began his scientific work in 1979 at the University of California, San Francisco (UCSF), where he completed a postdoctoral fellowship in nephrology with Floyd C. Rector Jr., M.D., studying membrane transport, the means by which ions and molecules enter and leave a cell, in the kidney. He continued this line of investigation, focusing on the regulation of kidney transport proteins.

Alpern has defined mechanisms of hydrogen and bicarbonate transport in the proximal tubule of the kidney, and he proved the existence of an electrogenic sodium-coupled bicarbonate transporter in mammals. More recently, his research has focused on the molecular mechanisms by which the sodium–hydrogen exchanger of the kidney’s proximal tubule is regulated. In 1987, Alpern was recruited from UCSF to serve as chief of nephrology at the University of Texas Southwestern Medical Center, where he later held the Ruth W. and Milton P. Levy Sr. Chair in Molecular Nephrology and the Atticus James Gill, M.D., Chair in Medical Science. In 1998, Alpern was appointed dean of Southwestern. Alpern became dean and Ensign Professor of Medicine at Yale in 2004.

A former president of the ASN, Alpern has served as associate editor of the American Journal of Physiology: Renal and Hospital Practice: Physiology in Medicine; as section editor of the renal and electrolyte section of the Annual Review of Physiology; and as editor of the molecular cell biology and physiology of solute transport section of Current Opinion in Nephrology and Hypertension; as consulting editor of the Journal of Clinical Investigation and Kidney International, and on the editorial board of numerous other journals. He was elected to the American Society of Clinical Investigation, the Association of American Physicians and the Institute of Medicine, and has served on the Advisory Council of the National Institute of Diabetes and Digestive and Kidney Diseases. Alpern is co-editor of the latest edition of Seldin and Giebisch’s The Kidney: Physiology & Pathophysiology, a top textbook in nephrology.

The Peters Award, established in 1983, is named for John P. Peters, M.D., one of the fathers of nephrology. Peters spent his entire career at Yale School of Medicine, where he was chief of the Metabolic Division of the Department of Medicine from 1922 to 1955. In addition to being a skilled clinician who was beloved by his patients, Peters was instrumental in the emergence of clinical chemistry as a discipline. His research focused on providing precise measurements of body fluids for the diagnosis and treatment of disease.

Yale biologist inducted into Connecticut Women’s Hall of Fame

Joan Steitz, Ph.D., Sterling Professor of Molecular Biophysics and Biochemistry, was honored along with the late Patricia S. Goldman-Rakic, Ph.D., who was inducted posthumously.

Steitz, a Howard Hughes Medical Institute investigator, is best known for her discovery and characterization of small nuclear ribonucleoproteins (snRNPs; pronounced “snurps”), intracellular complexes that play a key role in the splicing of pre-messenger RNA, the earliest product of DNA transcription. By excising non-coding regions from RNA and splicing together the resulting segments, snRNPs help to create the messenger RNA (mRNA) templates for the making of proteins. Steitz’s research has served to clarify how splicing expands the coding potential of human chromosomes, providing tools to advance the diagnosis and improve the prognosis of rheumatic diseases.

Steitz entered the Ph.D. program at Harvard University in 1961 in biochemistry and molecular biology, and she was the first female graduate student to work under James D. Watson, Ph.D., who had shared the Nobel Prize the previous year for his co-discovery of the structure of DNA. After completing postdoctoral work at the Medical Research Council Lab of Molecular Biology in Cambridge, England, she joined the Department of Molecular Biophysics and Biochemistry at Yale in 1970.

Steitz is a fellow of the American Academy of Microbiology and a member of the National Academy of Sciences, the Institute of Medicine, the American Academy of Arts and Sciences and the American Philosophical Society. She is also a fellow of the American Association for the Advancement of Science. She recently became the first of two women to share America’s largest prize in medicine, the Albany Medical Center prize in medicine and biomedical research.

Goldman-Rakic, who was Eugene Higgins Professor of Neurobiology at the medical school, was a pioneer in examining the functions of the prefrontal cortex, seat of all higher-level cognitive functions. Her groundbreaking work led to the discovery of a link between the loss of the neurotransmitter dopamine and severe deficits in working memory, research that has contributed to understanding and treating diseases such as schizophrenia, Parkinson’s, Alzheimer’s and attention deficit hyperactivity disorder.

A member of the National Academy of Sciences and the recipient of numerous honorary degrees and awards, Goldman-Rakic died in 2005 at age 66.

Three psychiatric researchers are newest Murphy Professors

Three neuroscientists in the School of Medicine’s Department of Psychiatry have been named to professorships funded by the late Charles B.G. Murphy, a 1948 alumnus of Yale College. Angus C. Nairn, Ph.D., and Marina R. Picciotto, Ph.D., have each been named Charles B.G. Murphy Professor of Psychiatry. Jane R. Taylor, Ph.D., has been designated the Charles B.G. Murphy Associate Professor of Psychiatry.

Nairn is noted for his research on the molecular actions of the neurotransmitter dopamine in a brain region known as the basal ganglia. Dysfunction of the brain’s dopamine systems have been implicated in mental disorders such as Huntington’s disease and Parkinson’s disease, as well as in schizophrenia, drug addiction and attention deficit hyperactivity disorder (ADHD). He has extensive expertise in enzymology, protein chemistry and the molecular biology of signal transduction, particularly with respect to the role of protein phosphorylation in the nervous system.

Picciotto’s research is focused on understanding addiction, depression and learning. She uses molecular, genetic and pharmacological approaches to link biochemical, cellular and anatomical levels of investigation to these complex behaviors. Picciotto’s primary interest is the role of nico- tine acetylcholine receptors in brain development and function, with a special emphasis on behaviors related to nicotine addiction and smoking. Picciotto’s studies galanin, a neuropeptide that protects against the development of addiction.

Taylor, a member of Yale’s Interdisciplinary Research Consortium on Stress, Self-Control and Addiction, studies the brain’s cortico-limbic-striatal circuits. Disturbances in this network may cause increased impulsivity and a lack of the reward-related learning that can lead to drug addiction, and disruptions in these circuits have also been linked to depression, schizophrenia and ADHD.

In her current work, Taylor is studying how dopamine-regulated intracellular signaling molecules and alterations in associated molecules within the prefrontal cortex, amygdala and nucleus accumbens contribute to motivation, learning and memory. Taylor, Ph.D., M.D., established the Wood Kalbf Foundation in 1995. Through three separate philanthropies, Murphy and his estate have given over $10 million to Yale, exclusively in the Department of Psychiatry and the School of Medicine. Following Murphy’s passing, control of the foundation fell to his attorney and friend Ethan Allan Hitchcock of the Yale College Class of 1931, who had once been the roommate of Murphy’s brother. In 1987, Hitchcock gave $1 million to the medical school to establish the Murphy professorships in psychiatry. In 1997, Hitchcock gave $100,000 in support of Yale Cancer Center.