

## FACTS &amp; FIGURES

## Vaccine victories

Given this year's flu-shot shortage, here are a few numbers showing that those needle-sticks really do work:



1796

Year the first vaccine ever, for smallpox, was developed

48,164

Number of people worldwide who died of smallpox in 1904

0

Number of people worldwide who have died of smallpox since 1998

1964

Year the measles vaccine was developed

503,282\*

Number of Americans who died of measles in 1962

89\*

Number of Americans who died of measles in 1998

1945

Year an influenza vaccine was developed

675,000

Number of Americans who died in the influenza pandemic of 1918-19

36,000

Number of Americans who died of influenza in 2003-04

2

Number of individuals with a Dartmouth affiliation who have chaired the federal Advisory Committee on Immunization Practices (alumnus Samuel Katz, M.D., and faculty member John Modlin, M.D.)

SOURCES: THE SCIENTIST; CENTERS FOR DISEASE CONTROL AND PREVENTION

## Detecting complex gene interactions using algorithms

I would say predicting who is going to develop cancer is as complex as predicting where a hurricane is going to make land-fall when it's sitting out in the middle of the Atlantic Ocean," says Jason Moore, Ph.D. Moore is the founding director of DMS's Computational Genetics Laboratory, as well as the director of the Cancer Center's Bioinformatics Shared Resource.

**Predict:** Meteorologists at least have developed algorithms that allow them to analyze the complex elements of climate signals—air and ocean temperatures, wind speed and direction, and so on—so they can try to predict where and when hurricanes will hit land.

But only recently have bioinformatics specialists like Moore—who defines bioinformatics as an intersection of biology, computer science, and statistics—begun developing similar mathematical tools. Such tools analyze interactions among genes and between genetic and environmental risk factors for cancer and other common diseases. Since arriving at DMS in August 2004, Moore has been spending half his time developing new computational algorithms and the other half using them to analyze biomedical data.

The good thing about his algorithms "is that they're very powerful and can really detect complex interactions," Moore says. "The downside is that they

require a lot of computer time. . . . For a disease like sporadic breast cancer, there are probably dozens if not hundreds of genes that contribute to an individual's susceptibility, in combination with lots of environmental exposures."

To address the computer-time problem, Moore and his team will be developing a 300- to 400-processor supercomputer called a Beowulf Cluster, which entails "stringing together cheap computers to get supercomputer performance at a fraction of the price it would cost to buy a supercomputer."

**Statistics:** Moore, a national leader in bioinformatics, has advanced degrees from the University of Michigan in human genetics and applied statistics. From 1999 to 2004, he was on the faculty at Vanderbilt, where he was the founding director of the Bioinformatics and Supercomputing Shared Resource; co-founder and codirector of the Advanced Computing Center for Research and Education; and director of the Bioinformatics Core of the Center for Human Genetics Research.

Under his leadership, DMS's Bioinformatics Shared Resource is developing software and providing computer programming and database support for biomedical researchers. The Computational Genetics Laboratory is developing, evaluating, and applying computational and statistical methods for detecting genetic biomarkers of common human diseases. One project, funded by the National Institutes of Health (NIH), focuses on the in-

teraction of genetic and protein predictors of adverse events following a smallpox vaccination. Another NIH-funded project involves analyzing the genetic basis of trauma recovery to determine why some people develop acute respiratory distress syndrome after a traumatic injury and some don't.

**Unwilling:** Not all biomedical researchers believe in Moore's approach, however. "You'd be surprised at how many people are unwilling to acknowledge and embrace that complexity," he says. "People are still looking for the silver bullets, the single-gene predictor of Alzheimer's disease, the single gene predictor of breast cancer. For the common diseases, there aren't going to be any silver bullets."

Just as there are no silver bullets for hurricanes.

Laura Stephenson Carter



Jason Moore came from Vanderbilt to be DHMC's director of bioinformatics.

ION GILBERT FOX

## Patients go home quicker, in less pain, with new technique

**N**umbing a specific part of a patient's body for surgery or pain relief has always been tricky. For decades, anesthesiologists have had to rely on knowledge of anatomy, sense of touch, and a little bit of luck to inject painkillers in the right region.

As a result, regional anesthesia was a talent few mastered. All doctors could do was "assume just normal anatomy," says anesthesiologist Brian Sites, M.D. "If you had multiple sticks or if you hit something you weren't supposed to, it was acceptable."

**Blocks:** But that standard of care is rapidly becoming a thing of the past, thanks to an emerging procedure called ultrasound-guided nerve blocks. DHMC's Regional Anesthesia Program, under Sites's leadership, has been performing the procedure since December 2003, and Dartmouth is one of only six places worldwide doing research on it. High-resolution ultrasound imaging lets doctors see exactly where they're inserting their needles. They can stay away from hazards, such as major blood vessels, and get very close to the nerves whose signaling they wish to block—allowing them to use lower doses of the anesthetic.

The technique can also be used in conjunction with general anesthesia. "When we do that, it allows us to use a lot less of the general anesthesia," says Sites. Vomiting and nausea from general anesthesia are common ob-



MARK WASHBURN

Sites, by looking at an ultrasound image, can now anesthetize just the right nerve.

stacles to postoperative patients going home. So those who have nerve blocks not only have less pain but get home sooner.

In the year since DHMC began offering ultrasound-guided nerve blocks, nearly 1,500 have been performed—most of them for orthopaedic procedures. Orthopaedic surgery, says Sites, is "one of the most painful procedures to recover from." But with the new technique, "we can anesthetize these nerves for long-acting pain control."

The idea of using ultrasound technology with nerve blocks has been around since the late 1970s. But it's only in the last five years that ultrasound equipment has been affordable, compact, and sophisticated enough to image neuroanatomy. In the past, regional anesthesia was "hard enough that few experts developed," says Sites. "You'd go to these national meetings and they would go through these very complicated, convoluted ways of putting the needle in and feeling these very subtle clicks and pops in the patient. Only a few people ever got good at it."

Sites recently gave a talk

himself at a national meeting, about DHMC's nerve block program. Afterwards, "I was mobbed like at a rock concert," he chuckles. But sometimes when he gives such presentations, private-practice anesthesiologists will complain about the cost of the equipment. But, counters Sites, the same case was made decades ago against blood-pressure cuffs. "That argument just doesn't stand when you have superior technology," he maintains.

**Proficient:** To address the concerns of old-school anesthesiologists worried about learning a new technique, Sites did a study to determine how quickly the procedure could be taught. Ten anesthesia residents with zero experience using ultrasound were shown a 10-minute slide presentation on performing ultrasound-guided nerve blocks. The residents then used the equipment on simulated human tissue. After three attempts, they were doing quite well. By their sixth try, all errors were eliminated. The results, published in the November 2004 issue of *Regional Anesthesia and Pain Medicine*, show that an anesthesiologist can become pro-

**PRESENCE OF MIND:** For his birthday, 14-year-old Jessey Rogers asked friends and family to make gifts to the Children's Hospital at Dartmouth. The \$217 donated will go toward art supplies for pediatric patients.



ficient at performing ultrasound-guided nerve blocks after only 40 minutes of training.

Other research endeavors of the Regional Anesthesia Program include determining the best ways to insert needles and adjust image quality, and describing what various nerves look like, because “a lot of these nerves haven’t really been described from an ultrasound standpoint,” explains Sites.

The research, combined with increasing patient demand for ultrasound-guided nerve blocks, is giving DHMC anesthesiology residents a big leg up on their counterparts elsewhere. “They’re averaging over 100 nerve blocks a month,” says Sites. A resident who does 80 nerve blocks during an entire residency, he explains, is “going to be like 90th percentile. So we’re off the charts.”

In the past, only more senior residents were allowed to perform nerve blocks. But now, with ultrasound, even first-years at DHMC can learn the procedure. “When I watch a resident put a needle into a patient, and I’m watching the needle and I’m watching the target, I feel good. I know how to make suggestions. I know how to control that experience. Whereas before, you couldn’t feel what the resident was feeling,” says Sites. “I think this is a great teaching modality and merges that dilemma of how do you train a resident and how do you take care of a patient.”

The next step for the program, he says, is the July 2005 start of a post-residency fellowship in regional anesthesia.

JENNIFER DURGIN

## Getting radiation where it should go . . . and not where it shouldn't

It's a little-known fact that most cancer patients who receive radiation therapy get a tattoo. But instead of the elaborate body art favored by rock musicians and athletes, they get a line of tiny blue-black dots. The dots help doctors to aim the radiation beam. Fast and precise computers at Dartmouth's Norris Cotton Cancer Center can direct a beam with accuracy as close as a single millimeter—the width of just 16 pages of this magazine.

Yet for years, doctors have tried to achieve still greater accuracy. A tumor attacks a living human whose lungs, diaphragm, and heart are constantly in motion. Radiation technicians can't tell patients not to move their hearts any more than photographers can make squirming toddlers sit still.

**Beams:** This is not a trivial concern, explains Eugen Hug, M.D., Norris Cotton's director of radiation oncology. Radiation beams must be widened to compensate for these body movements, as well as to catch tumors that are too microscopic to show up on an x-ray. But because radiation damages any tissue in its path, treatments can harm the lungs or the heart while it's attacking the cancer. “Almost all of the side effects come from radiation given where it doesn't belong,” says Hug.

To reduce this collateral damage, the Cancer Center has adopted a new technique called radiation pulsing, to deliver the beam with more accuracy than ever before. Physicists, among

them DHMC's David Gladstone, Sc.D., call it radiation gating—a term derived from the electronic description for a signal that's switched on and off. Norris Cotton, Hug says, is one of just a handful of cancer centers nationwide with the equipment and technical skill to use radiation pulsing effectively.

**Pulsing:** In one of DHMC's radiation suites, Gladstone retrieves from a high cabinet a clear plastic box slightly larger than a pack of cigarettes. The comparison to a cigarette pack is apt, since radiation pulsing is particularly effective against lung cancer. One side of the box contains two reflectors similar to the “hot dots” on a child's backpack. When the box is placed on a patient's chest, a device that looks like a shower head—except it sprays infrared light, not water—uses the reflectors to calibrate the precise rhythm of the patient's breathing.

This information is then correlated with a CT scan, a three-dimensional picture of the patient's insides. It is this image that determines the placement of the tattoos that become the targets for the radiation beam.

Now, the Cancer Center's computers can not only aim the beam at the tattooed dots but can synchronize it with the patient's breathing, turning the radiation on at the exact moment the lungs are at a given expansion point, improving accuracy.

Because the lungs are so close to other critical organs, the prior inability to achieve pinpoint

accuracy required technicians to reduce the intensity of the radiation in order to limit collateral damage. “You can easily destroy half a lung with radiation,” Hug says. The typical lung cancer patient can't spare that much tissue. She is elderly, Hug says, perhaps 70, and a smoker. It's very likely that she also suffers from asthma and emphysema, which make her lungs “medically inoperable,” Hug explains. Because of all these complications, this average patient has had just a 40% chance that radiation therapy will succeed.

But with radiation pulsing's ability to “give enough radiation to the right point,” Hug adds, “we can control malignant tumors, increase survival, and decrease side effects.” The chance of survival doubles to 80%. “The patient goes from being not likely to survive lung cancer to likely” to survive, says Hug.

JOHN MILNE



MARK WASHBURN

**Eugen Hug says a new radiation technique increases patients' survival odds.**

**COURTLY MANNER:** Cardiologist Daniel O'Rourke, M.D., is one of many DMS faculty who coach kids' sports teams on their own time. He's in his fourth year coaching the Hanover High girls' varsity basketballers.



## Taking a close look at a historical claim

Events that later prove significant sometimes don't seem earth-shaking at the time they occur. That's why determining historical firsts after the fact is a perilous endeavor. But amateur and professional historians alike enjoy trying to pin down the *terminus a quo* of this or that event.

So when Dr. James Cavanagh, DMS '52, visited an exhibit on Oliver Wendell Holmes at Harvard's Countway Library of Medicine a few months ago, he was struck by an apparent disconnect. The legend next to an 1835 microscope said that

Holmes, "after completing his studies in Paris, returned to Harvard with his microscope and began America's first course in microscopy." But Cavanagh recalled that Holmes had taught at DMS in 1839 and 1840, well before he joined the Harvard faculty in 1847. (In fact, even earlier, Holmes had taught at Boston's Tremont Medical School.) So Cavanagh looked up an article written for the Fall 1980 issue of this magazine by DMS neuroanatomist Wilbert Chambers, Ph.D. Holmes, wrote Chambers, "was distinguished for introducing the use of the microscope. From the beginning of his career, his lectures in gross

anatomy were supplemented with the addition of histological instruction and demonstration. Thus, Dartmouth Medical School was one of the first institutions in America to include histology in its curriculum." This rings true. Holmes surely would have used his Parisian microscope for demonstrations at Dartmouth. He liked gadgets and even adapted one microscope to enhance its use in the classroom.

The surviving evidence doesn't prove that Holmes actually taught a course in histology or microscopy at Dartmouth—or at Harvard, either. Not until the 1870s did course titles at most schools reflect with precision a breakdown of their subject matter. Yet to the extent that Holmes used—and taught his charges how to use—a microscope at Dartmouth, his students there would have benefited from this aspect of his Paris training even earlier than those at Harvard.

CONSTANCE E. PUTNAM

*Putnam is the author of the definitive biography of DMS's founder, Dr. Nathan Smith, and of a newly published 200-year history of DMS. Sadly, there is another footnote to this foray into the past: Wilbert Chambers, author of the article cited above and a much-loved teacher of neuroanatomy, died on October 21, 2004.*



This 1830 French microscope owned by DMS is likely similar to Holmes's.

## Collegewide campaign launches in New York

On November 12 and 13, Dartmouth College formally launched a capital campaign that aims to raise \$1.3 billion by 2009. The College's last capital campaign, which ran from 1991 to 1996, raised \$568 million. DMS and DHMC, which raised \$95 million in the previous campaign, have set a goal of \$250 million in this one—a figure that is part of the College total.

"This will be the largest campaign in Dartmouth's history," said Dartmouth President James Wright at the official announcement of the Collegewide campaign, held at the Roosevelt Hotel in New York City.

**Initiatives:** The funds raised will be invested in dozens of initiatives—new buildings, programs, faculty positions, financial aid, and more—for all components of Dartmouth: for its three professional schools and its graduate programs in the arts and sciences, as well for as the undergraduate program.

The official launch of the \$250-million DMS and DHMC portion of the campaign is scheduled for May 2005, though the quiet phase of raising funds is already well under way (see page 16 for news of one recent gift).

Some 400 people gathered to celebrate the Collegewide kickoff, which included a black-tie dinner on Friday night, followed by a Saturday morning "Great Issues of Our Time" program that celebrated Dartmouth faculty, students, and alumni. It featured student poster sessions, speeches, and panel discussions that

gave what Wright called "a tantalizing glance at what makes Dartmouth magical."

Several sessions touched on medical topics—"Mysteries of the Teenage Brain," "Breakthrough," "Ethics at the Frontiers of Science"—and one, titled "Transforming Medicine," featured an all-DMS line-up. Dartmouth alumna Susan Dentzer—health correspondent for PBS's *NewsHour with Jim Lehrer*, as well as a DHMC Trustee, a DMS Overseer, and a former College Trustee—moderated the DMS panel as Mark Israel, M.D., director of Dartmouth's Norris Cotton Cancer Center, and John Wennberg, M.D., M.P.H., director of the Center for the Evaluative Clinical Sciences (CECS), engaged in a lively discussion about the challenges of translating new medical discoveries and innovations into practice and of evaluating their effectiveness.

Israel spoke eloquently about how medical advances are increasingly made by multidisciplinary teams that work together collaboratively. But Wennberg cautioned that with the "rapidity of new theories, there's a concern we won't know how to tell what works and doesn't at a time when costs are going up. The question is how to fit all this data into a spectrum of innovation and evaluating."

Wennberg, whose name is synonymous with the *Dartmouth Atlas of Health Care*, has found that large variations in health-resource utilization across the country depend more on the dis-



ALL: JOSEPH MEHLING



The launch in New York City of a \$1.3-billion Dartmouth-wide capital campaign featured festivity on Friday night, at a black-tie gala (top), and intellectual stimulation on Saturday at a series of panel discussions. One, titled "Transforming Medicine," featured (above left, from the left) CECS director Jack Wennberg, Susan Dentzer, and Cancer Center director Mark Israel, with closing remarks by DMS's dean, Stephen Spielberg—pictured above right listening to the discussion.

tribution of resources and on differences in local medical opinion than on medical need. He is also a cofounder of the Foundation for Shared Decision-Making, which encourages patients to partner with clinicians in making decisions about their own health care.

**Special:** Dentzer acknowledged that many of the building blocks of transforming medicine are in place at Dartmouth, but also at other institutions. So what is it that makes Dartmouth special, she wanted to know.

"Our scale," Israel replied. "It's more collaborative, interactive, more willing to cooperate, to build collaborative teams.

Dartmouth is precisely poised to be flat-out the leader in medicine in the future."

"We are right-sized," agreed DMS Dean Stephen Spielberg, M.D., Ph.D., who delivered the panel's closing remarks. He added, "The Medical School is a partner in the undergraduate experience. It's important for Dartmouth College graduates to understand how science is integrated into society." He and other DMS faculty teach undergraduate courses, and College students work in DMS labs and volunteer at DHMC. "We are very much a part of the Dartmouth campaign," he said.

Laura Stephenson Carter

## A JOINT RESOLUTION

Some people collect baseball cards. Some collect coins or stamps. Orthopaedic surgeon Michael Mayor, M.D., collects "explanted" artificial joints. Mayor, who holds DMS's William and Bessie Allyn Professorship, has been at Dartmouth since 1971. In that 33-year span, he's performed 1,500 hip replacements and 2,000 knee replacements.

But his most significant legacy involves joints taken out of patients. With John Collier, D.E., a member of the faculty at Dartmouth's Thayer School of Engineering, Mayor has amassed the world's largest collection of "retrieved" implants—artificial joints that outlived their useful life or failed for some reason and so were replaced or removed. The collection in their implant analysis laboratory now includes over 8,000 hips, knees, and other devices sent to Dartmouth by surgeons the world over. They carefully analyze these devices for clues as to what made them succeed or fail. The resulting insights have led to many improvements in the way such devices are made—from which thousands, maybe even millions, of patients have benefited. A.S.



## COURAGEOUS MOVE

When former Dartmouth President David McLaughlin died on August 25, while on a fishing trip in Alaska, he was remembered in many ways: as a Dartmouth football star who turned down a chance to play in the pros, as a business leader who chaired the Board of Trustees for his alma mater during the transition to coeducation, as Dartmouth's president from 1981 to 1987, and later as chair of several major nonprofits, including the American Red Cross.

His term as president has special meaning for the medical community at Dartmouth. In a eulogy at McLaughlin's memorial service, current Dartmouth President James Wright explained why: "In perhaps the most long-lasting accomplishment, he helped to move the Medical Center from Hanover to Lebanon. . . . I said to David many times . . . that the decision to relocate and reconstitute the Medical Center, audacious and even controversial though it was, was both right and courageous." Anyone who recalls the tortuous hallways of the old DHMC (pictured above being imploded in 1995) would second that motion. A.S.



**STATE OF THE ART:** An oncology nurse, seven local high schoolers, renowned muralist Sol Levinson, and DHMC's Arts Department collaborated to brighten a corridor in the Radiation Oncology Unit with nine 4' x 8' murals.



## Historical paintings give lecture hall a major face-lift

Two large impressionistic-style paintings of scenes from DMS history were recently hung in the Medical School's Chilcott Auditorium, noticeably changing the room's personality from drab and utilitarian to warm and inspiring. "The paintings make Chilcott a much more intimate space," says second-year student Natalia Berry. "It's such a fluorescent-lit place—a very industrial, sterile space—so the paintings definitely add warmth."

**Colors:** With their busy course schedules, including 20 hours a week of lectures in Chilcott, second-year students find the paintings a relaxing diversion. "I like that the colors are a bit muted . . . that the artist didn't go for a lot of clarity, sharp lines, defini-

tion; that by painting a little fuzzier and with less detail, each painting seems softer, more relaxed," says Mark McAllister, another second-year student.

In one painting, titled *House Call*, DMS's founder, Dr. Nathan Smith, sits astride a stately black horse while he instructs two medical students as they're about to visit a mother and her baby. The second painting, *The First X-Ray*, shows Dr. Gilman Frost, a DMS faculty member, conducting the first clinical x-ray in the nation—in Reed Hall at Dartmouth in 1896. Both are the work of artist Sara Dykstra, and third-year DMS student Joseph Dwaihy also played a major role in the project.

*House Call* and *First X-Ray* are part of a trilogy that Dykstra and Dwaihy recently completed. The third painting in the series, *Intensive Care*, was hung outside Zimmerman Student Lounge at

DHMC. It shows the first intensive care unit in the country, established at Hitchcock in 1955 by Dr. William Mosenthal.

In all three paintings, "the compassion of the figures is directed at a central lighted area," explains Dykstra. In *House Call*, the light is on the baby, a symbol of preservation of life. In *First X-Ray*, light is focused on the machine, a symbol of medical technology. And in *Intensive Care*, light is directed toward the healing of a sick patient.

The similar layout of *First X-Ray* and *House Call* ties the two paintings together, adds Dykstra. For example, Dr. Frost, on the left in *First X-Ray*, is looking down at his timer, and the rider on the left in *House Call* is looking down at his horse's mane.

**Intimate:** Berry's favorite painting is *House Call*. "It encapsulates the essence of what medical care is, which is reaching out to people who are isolated and in need of help. It's an entirely different scene today. Patients come to this very high-tech hospital and physicians are booked to the max, but that painting is something to aspire toward . . . it's really the core of the physician-patient relationship. I like that. It reminds me of that intimate-helper role," she says.

"The paintings are visually stimulating," comments another second-year student, Joan Hier. "They give your mind a way to wander from lectures sometimes—in a good way," she quickly adds with a laugh, "because they're about medicine so you're not straying *too far*."

MATTHEW C. WIENCKE

## \$5-million gift will go toward constructing LeBaron Commons

If one were to ask Dean LeBaron to "think outside the box," he would probably throw away the box.

Unconventional thinking is what made LeBaron successful in his career as an investment futurist—someone who is always trying to look around the corner to identify the "next big thing." It's also what inspired him to donate \$5 million to Dartmouth Medical School to establish the LeBaron Commons. The Commons, which is being named in honor of LeBaron's father, Francis E. LeBaron, D.O., M.D., will connect the Robert and Naomi Borwell Research Building on DHMC's Lebanon campus to future research facilities there, providing a physical context for formal and informal contact among researchers.

**Quest:** LeBaron's father, a 1931 graduate of the Massachusetts College of Osteopathy and a 1934 graduate of the Middlesex College of Medicine and Surgery, was a self-taught researcher whose quest for new frontiers made him a lifelong student. For example, he learned statistics so he could conduct back-therapy studies that demonstrated the efficacy of returning troops to combat, chemistry in an attempt to develop nicotineless tobacco, and preventive medicine in order to push industry to focus on risk reduction.

Dr. LeBaron also loved his relationships with his patients.



JOAN HIER

Students who spend 20 hours a week in lectures here enjoy these new paintings.

To him, medicine was “very much like continually solving detective stories,” recalls his son. “You have a series of ingredients and clues as to what a diagnosis is and pursue some science and a little bit of art and come out with an answer that is hopefully helpful.”

Dean LeBaron seems to have inherited his father’s drive for in-



**Dr. Francis LeBaron, above, is being memorialized by his son, investment futurist Dean LeBaron, through a to-be-constructed Commons at DHMC, depicted in the architect’s model below.**



novation. In 1969, he founded Batterymarch, a highly unconventional investment firm that was one of the first to enter the security markets of Brazil, India, Russia, China, and other countries that were not yet favorites among U.S. investors. Batterymarch was also a leader in applying computer technology to financial modeling, trading, and investing.

Part of Batterymarch’s success was due to its egalitarian structure, maintains LeBaron. None of his 30-plus employees had an individual office, no one had a job title, and everyone took turns cleaning the kitchen. Yet the staff was highly productive. “We did the amount of business it would take normal companies about 300 people to do,” says LeBaron, explaining that he’d often move his desk if somebody was doing something that he found interesting: “I’d work with them, if they wanted me.”

**Meet:** While it’s unlikely that DMS will start tearing down office walls and stripping professors of their titles, it’s the cross-disciplinary collaboration and lack of departmental fiefdoms at DMS and DHMC that inspired LeBaron’s generosity. “That’s one of the reasons why I am especially attracted to the notion of the LeBaron Commons,” he says, “because that is the place where people will meet and exchange ideas”—with

the ultimate goal of such interactions being to hasten the transformation of scientific discoveries into patient care.

Another reason behind his gift is care he received at DHMC late one night a few years ago. LeBaron, a half-time resident of New London, N.H., had lost vision in one eye. He received a prompt diagnosis at DHMC and—under the care of ophthalmologist Christopher Chapman, M.D., and internist Jay Buckey, M.D., the latter a former astronaut and medical director of hyperbaric medicine at DHMC—agreed to try an experimental treatment that might temporarily restore his vision.

“I love experimentation,” says LeBaron. “The worst thing you can do for me is say we’re going to do something that we’ve been doing for 40 years. That really turns me off.” So LeBaron gladly spent four hours in a submarine-like pressure chamber that pumped oxygen into his circulatory system. The procedure worked as hoped. But LeBaron was most impressed by Chapman and Buckey’s combination of science and care—the fact that “these guys stayed around and were willing to try something that was a tiny, tiny step new.”

LeBaron’s philosophies on business, science, and life are rooted in such heady concepts as contrarian thinking, emergent behavior, and complexity science. But he realizes, too, that transformational work can come from simple gestures like moving a desk. Or, at Dartmouth, constructing a Commons.

JENNIFER DURGIN

## Trip to Tanzania was “disheartening” but “just the beginning”

Nothing went as planned,” says Shahrzad Ehdavand, M.P.H., a first-year medical student at DMS. She’s referring to a recent project she undertook in Vikuge, Tanzania, a farming community 13 miles from the East African country’s capital, Dar es Salaam. She traveled there hoping to collect health information on the citizens of Vikuge, which for the past 15 or so years has been the storage site for unwanted pesticides donated to Tanzania by Greece.

**Goal:** But Ehdavand never realized her goal—despite careful planning and frequent contact with researchers at the University of Dar es Salaam (UDSM) whom she’d met on an earlier trip to Tanzania. In 2002, as a biochemistry major at Hood College in Maryland, Ehdavand went to Tanzania through a federal program called Minorities in Research Training (MIRT).

On that trip, she worked with UDSM chemistry professors in Vikuge, taking samples of pesticide-contaminated soil. Ehdavand, who had always been interested in medicine and public health, began to wonder what effect the pesticides might be having on residents’ health.

So she stayed in touch with her UDSM contacts, and, after earning a master’s of public health at Dartmouth’s Center for the Evaluative Clinical Sciences (CECS) in June, she returned to Vikuge on another MIRT grant.



**GLOBAL POSITIONING:** In the five years since DMS began an exchange program with Kosovo's only medical school, well over 100 visitors have traveled from the war-torn Balkans to Dartmouth, or vice versa.

"I wanted to start a registry to collect [health] data the way I wanted the data to be collected," says Ehdaivand. "We had just learned in CECS how important data collection is."

**Hurdles:** Finding more hurdles than she had envisioned, she turned to the regional hospital for help. She asked for all the data they had on people who had come in with abnormal growths. But the chief medical officer, even though he spoke English, "wouldn't really talk to me. He would talk to the person I was with from the university, who's a man," she says. "I think part of it

was because I'm 'just a girl.' I'm not married." So Ehdaivand had to explain what she wanted to the professor, who relayed the message to the medical officer.

"I finally got something close to what I wanted, but they only gave me the data on women," she says, laughing ruefully. "And they only gave me information about ovarian cysts and other woman problems." By then, Ehdaivand had to make the best of "horrible" data. She hasn't found any correlations yet between tumor incidence and subjects' residency in Vikuge, but she hasn't given up on the project. Nor has

the experience deterred her ambition to work in international health—in fact, she's more resolute than ever. "It's not over yet," she says. Indeed, she hopes to return to Vikuge. "I'll definitely stay involved. . . . The only people that are working on it now are chemistry people, just constantly taking samples to see how high the levels of pesticides are. I'm the only health person involved in the project.

"It's very disheartening to go and hope that you're going to be able to make some huge change and you don't," she continues. "But it's the small victories, I



Ehdaivand and a passel of pesticides.

think, that matter." There's still "a lot of work to be done . . . in Vikuge. I think it's just the beginning of the research."

JENNIFER DURGIN



Top, some of the climbers at the summit of Mount Orizaba (Markowitz is in the center rear). Bottom, the Mexican ambulance-to-be.

## DHMC group pursues high-minded extramedical project

A group of intrepid climbers, most of them associated with DHMC, spent two weeks last fall in the Sierra Madre—a mountain range east of Mexico City—scaling two of the highest peaks in the Americas. The trek was more than an adventure-vacation, however; it was also a fund-raising venture. The group had been working for months to raise money to buy an ambulance for the local Red Cross medical service. While they were in Mexico, the climbers visited some of the Sierra Madrans who will benefit from their gift.

What kindled the idea, says John Markowitz, an operations assistant in DHMC's Emergency Department, was an encounter he had on a previous climb with a local physician, Dr. Geraldo Reyes Carlin. Carlin is the director of the regional Red Cross but told Markowitz that "they give me no ambulance, personnel, or money." Most rural health care in Mexico, Markowitz says, is provided by the Red Cross.

So Markowitz recruited 16 climbers who paid for their own trips plus \$250 each

toward the ambulance and its refurbishment. Participants included DHMC staff; employees of McCarthy Construction, the general contractor for DHMC's Project for Progress expansion; and a few others.

The ambulance—which looks exactly like a child's drawing of a truck: a box on wheels—is a sturdy 1960 Mercedes Unimog that the group located in Arizona. "A regular ambulance wouldn't have been half the fun," Markowitz says. In the best tradition of both New England and old Mexico, many of its fittings are recycled. For example, the group wangled a used stretcher from the Enfield, N.H., emergency medical service (EMS). "We shipped it out to Arizona," says Markowitz, "and the Ferno Company, which was doing the refurbishment, installed it for free." The ambulance was also fitted with lights, a defibrillator, backboards, and "as much EMS equipment as we could gather. . . . We'll continue to raise money" for the region, Markowitz adds. For the people of the Sierra Madre, that's *buenas noticias*—good news. M.M.

## DMS research funding rose 13% last year to \$127 million in FY04

**R**esearch funding awarded to Dartmouth Medical School increased 13% in the last fiscal year—from \$112.4 million in 2002-03 to \$126.8 million in 2003-04, according to the DMS Fiscal Office. The previous year's increase had been a modest 1%, so the return to a double-digit rise was welcome news. Since 2001, the Medical School's income from research grants and contracts has grown 58%.

The fact that more and more research is interdisciplinary, and thus interdepartmental, makes it harder to associate grants with specific departments. But based on the primary departmental affiliation of the principal investigator, two departments doubled their research funding in the past year—Genetics, from \$3 million to \$7 million, and Physiology, from \$7 million to \$14 million—while other departments showed steady increases. The largest dollar totals went, as in recent years, to Medicine (\$21 million), Psychiatry (\$20 million), and Community and Family Medicine (\$19 million).

**Sources:** The U.S. Department of Health and Human Services, which includes the National Institutes of Health, accounted for 68% of the research funding awarded to DMS in 2003-04. Other sources included private and governmental foundations and institutes; corporations; and the state of New Hampshire.

JENNIFER DURGIN

## CLINICAL OBSERVATION

In this section, we highlight the human side of clinical academic medicine, putting a few questions to a physician at DMS-DHMC.

**Joan Crane Barthold, M.D.**

**Assistant Professor of Obstetrics and Gynecology**

*Barthold, a generalist in ob-gyn, joined the faculty in 1989 and was instrumental in developing the ob-gyn residency at DMS. She graduated from Dartmouth College in 1979 and from DMS in 1985.*

**How did you become a physician?**

I grew up in a small town in central New Hampshire, and my dad was one of the few docs in town, but I never thought I'd be a doctor. My mother was a doctor, too, though she never practiced. I was a ski racer and a biology major in college and spent a lot of time doing research. I really liked that, but at one point I observed that the graduate student in the lab where I worked was slowly selling off all the things that seemed



to me to make life fun. When he sold his skis and his car, I got a little worried. I wasn't sure that's what I wanted to do, and I realized that people were important to me. This was fall of my senior year. So I applied to medical school, just in the nick of time—that's how

I became a physician. I wonder sometimes if I always knew that's what I was going to do and I was just fooling myself, but I don't think so.

**If you weren't a physician, what would you like to be?**

A bird, flying. And I continue to struggle with the right balance between family and career. I have a 14-year-old boy and a 12-year-old girl. It's lots of fun to do things with them, and sometimes I think I'd like to do just that.

**What are your favorite nonwork activities?**

Mountain biking, hiking, running. Soccer and gardening with my kids; I have a good-sized veg-

etable garden, and digging around in the dirt is pretty therapeutic. And baking; we bake bread every week, and also pie.



**What famous person, living or dead, would you most like to spend a day with?**

Albert Schweitzer or my grandmother or even my father. Or [former Dartmouth President] John Kemeny—I knew him a little bit because I was supposed to take a math class with him my freshman winter at Dartmouth, but I withdrew and went off ski racing. I found him a very impressive individual.

**If you could travel anywhere you haven't yet been, where would it be?**

A big mountain. I fantasize about climbing Denali or, more realistically, Mount Rainier first.

**What's the last book that you read?**

*The Endurance: Shackleton's Legendary Antarctic Expedition.* It's pretty amazing, what people can put themselves through and survive. I tend toward escapism, detective or mystery novels, local authors like Archer Mayor.

**What's the last movie that you saw?**

*Touching the Void.* It's a mountaineering adventure about two guys climbing a peak in South America and surviving despite unbelievable obstacles. We also watched *Shrek* the other day. Our family varies from James Bond to Disney to mountaineering movies.

**What are the greatest frustration and the greatest joy in your work?**

To take good care of people takes time, but that is not something that's built into our clinical schedules and is not something that insurers are willing to pay for. And the greatest joy is the patients. Women travel a fair distance to see me, so I must be doing something good.

**What advice would you offer to someone contemplating going into your field?**

They should listen to what their heart is telling them. I tend to be optimistic and idealistic!

**FIRST-RATE:** Dartmouth-Hitchcock Medical Center was ranked #1 on *Business New Hampshire Magazine's* list of "Best Companies to Work For." Criteria included a culture that values employees and stable leadership.



## Med student cuts her teeth on community outreach

Lisa Norlander's own teeth gleam as she explains how she became interested in dental health during college. "About a third of our school went down to . . . Mexico during spring break every year. We were divided into different teams. . . . I was fortunate to be on the medical-dental team."

About 20 undergraduates, continues Norlander—plus doctors, nurses, dentists, and dental hygienists—would travel around and set up one-day clin-



ics. "The thing for me that was most formative was working with the dentists. The first patient we had was a woman who had hardly any teeth. Most of her teeth had rotted down to the gum line, and what she did have left in her mouth was so brittle that you could barely touch it—it would just shatter. It kind of opened my eyes to the oral health needs around the world."

Norlander decided to go into medicine rather than dentistry and is now a second-year med-

ical student at DMS. But she hasn't abandoned the mission that absorbed her in college. In fact, she applied for a grant to develop an oral health education project in the Upper Valley. Her proposal was funded by the Schweitzer Fellows Program, which underwrites student projects that address unmet health needs. "When I heard about the Schweitzer Program," Norlander says, "I felt that doing an oral health project would be a way that I could integrate my interest in oral health with my medical education."

On a recent evening, she is working with eight volunteers

she's recruited for the project. Several other medical students, plus some undergraduates and two health-care professionals, have assembled for the first of two training sessions. After a brief introduction, Norlander turns the forum over to Russell Jones, M.D., a family physician from New London, N.H., who talks about tooth decay, its prevention, and the logistics of community outreach.

The group's second session will be more hands-on; they'll practice proper brushing and flossing techniques using a model of a mouth and gums and learn about various oral complications.

## DHMC has a secret agent in its battle against (computer) viruses

Randy White, a DHMC user support specialist, has found a clever way to make computer "geek speak" palatable. He dons a porkpie hat and dark glasses and performs original songs such as "Secret Hacker Man" to educate DHMC employees about proper computer use.

"Secret Hacker Man" is based on Johnny Rivers's "Secret Agent Man," the theme song for the hit 1960s TV show. The words to the song, says White, "kind of fell into my head during lunch one day, when we were fighting off [computer] viruses":

*The Internet is often filled with danger:  
Don't ever open e-mail from a stranger.  
Oh, with every click you make  
Is another chance you take—  
Odds are you won't safely click tomorrow.  
Secret Hacker Man, Secret Hacker Man:  
He's given you a cookie and taken away  
your name.*

Performing "Hacker Man" is part of a presentation White and his senior manager, Bill Weyrick, lead on Internet spyware,

worms, and viruses. "I want people to realize, 'Hey, this is all fun, but it's also serious as far as being careful and not allowing bad things to download on your computer,'" White says. With his electric-acoustic guitar and melodious voice, White has performed for DHMC department directors, receptionists, nurses, and many others.

One of his other computer-themed compositions is "The Runway Shift-Click Shuffle." It tells users how to download applications properly in a program called Runway (the "pepper" is an image that appears in a dialog box):

*You see, it thinks that it can handle all the things we wanna do,  
But it's nothin' but an old bear trap;  
We do the Runway Shift-Click Shuffle 'til  
the pepper is done.*

When he's not singing about or working on computers, White sings and plays with a local '60s-'70s pop-rock duo that goes by "The Fossils." Their slogan is "The Fossils—Almost Rock." M.C.W.



PHOTO: SQUIREL GRAPHICS

Rocker Randy White poses in the get-up he wears when he performs his instructional songs.

Upon completion of their training, the volunteers will become emissaries in behalf of oral health—visiting area shelters and social service agencies to dispense information and provide resources on dental health.

In addition to Jones, Norlander is also being advised by a retired dentist, Robert Keene, D.M.D., who describes himself as a “technical resource and hand-holder.” Keene will provide the hands-on part of the training, drawing on his 40-plus years in practice in Hanover as well as his work in underdeveloped nations.

**Phase:** Training volunteers is only the first phase of Norlander’s plan. When she begins her clinical rotations in July, she’ll have much less time to devote to the project. So she and her mentors are planning to also produce an instructional DVD that can be left with the target organizations. That way, the education can continue without an ongoing need to recruit and train volunteers. According to Keene, it will include such information as a recipe for inexpensive homemade toothpaste.

Upper Valley residents who may not have seen a dentist in years will, of course, benefit from Norlander’s efforts. But Jones says the students who volunteer will also benefit from “a chance to see what impact physicians can have . . . in the community.” And, he adds, “it also helps the medical community in general. Seeing volunteer students providing education can do a lot to make the public see that we are, indeed, real people.”

JOYCE F. WAGNER

## INVESTIGATOR INSIGHT



In this section, we highlight the human side of biomedical investigation, putting a few questions to a researcher at DMS-DHMC.

**Deborah Hogan, Ph.D.**

**Assistant Professor of Microbiology and Immunology**

*Hogan joined the Dartmouth Medical School faculty in 2004. She studies microbe-to-microbe interactions at a molecular and genetic level, with special emphasis on the bacterium *Pseudomonas aeruginosa* and the fungus *Candida albicans*, commonly known as yeast.*

**How did you decide to become a scientist?**

I’ve always liked the biological sciences. The biggest factor contributing to my decision to go to graduate school was the research experience that I had as an undergrad. After working in a lab, I thought that a career as an academic researcher would likely suit me well. Without experiencing research firsthand, it would have been very hard to make an informed decision about whether or not to pursue a Ph.D.

**Are there any misconceptions that you find people have about your field?**

I’ll speak on behalf of microbes. Understandably, most attention that microbes receive relates to their roles in disease. Microbes can also be extremely beneficial to human health and are essential to the functioning of different ecosystems. The positive roles of microbes are often greatly underappreciated.



**What advice would you offer to someone new in your field?**

Take opportunities to talk to people about what you work on. Many people have interesting ideas and helpful advice.

**Who were your scientific mentors?**

I’ve had extremely good luck finding excellent mentors. The research I am currently doing has

been influenced by approaches I learned in several different labs.

**Do you always have a working hypothesis in the lab?**

We are working on multiple projects in the lab. Some of the earlier projects have very broadly defined hypotheses, while more developed projects have more specific hypotheses that we are testing directly. I’m certainly not afraid of the occasional “look-and-see” experiment—sometimes you get lucky.

**What bores you?**

Rehashing the same problem over and over. I would much rather try some “solutions” that might not work out than spend too much time dwelling on a problem.

**Finish this sentence—“If I had more time I would . . .”**

I’d spend more time involved in science outreach or science education. I would also step up my summertime quest to find the perfect lobster roll (one without mayonnaise).

**What’s your favorite nonwork activity?**

Taking long walks in downtown Boston, on the Cape, or in the New Hampshire woods. Finding (and enjoying) a new restaurant comes in a close second.

**What music or radio programs do you listen to most?**

Recently I’ve enjoyed listening to flamenco guitar—although Pink Floyd’s *Dark Side of the Moon* is in my computer’s CD player right now. Apart from music, I listen to a lot of public radio. *This American Life* is my favorite radio program.

**What do family and colleagues give you a hard time about?**

I’d hate to make it too easy for my family and friends by listing *all* of the things they give me a hard time about. I do get teased for having a lot of freckles.

**Fill in the blank—“I’d rather be . . .”**

I grew up in Boston, so I was going to say “celebrating a Red Sox win in the World Series,” but then my wish came true! I am in fact still celebrating the Red Sox winning the World Series.



**PEDAL PUSHERS:** DHMC recently granted the Town of Hanover a right of way to build a bike and pedestrian path that will link downtown Hanover and DHMC. The project is supported in large part by a federal grant.

## NEW PAPER MAKES THE GRADE

Security and elegance were the goals of DMS Registrar Joan Monahan when she set out to redesign the paper on which graduates' transcripts are printed. The result "makes a nice statement about where it's coming from and provides every level of security you would want to have," she says. New attention is being given nationally to ensuring that the transcripts of physicians can't be tampered with. And while she was at it, Monahan figured it would be nice to come up with something more attractive than the generic parchment the office had used for almost a decade.



With its dark green border, pale green background, and DMS seal in the middle, the new paper (top left) is both prettier and more difficult to duplicate or deface. Not only does it contain several translucent watermarks, but a hidden pattern saying "COPY: DARTMOUTH MEDICAL SCHOOL" appears if the paper is photocopied (bottom left). In addition, to confound even the most clever impostors, the paper is made of chemically reactive fibers that will change color if dabbed with household bleach. But the final step in protecting the authenticity of DMS transcripts is low-tech but tried-and-true—Monahan keeps the paper under lock and key. J.D.

## NURSE IS A MODEST HERO

"I never realized how helpless you are on the outside," says DHMC nurse Laurie Fox, recalling the night she watched an SUV slam into a motorcyclist on a busy road in Enfield, N.H. But she acted instinctively, clearing blood from the badly injured cyclist's airway with a CPR kit she happened to have in her car. As a nurse with 11 years of experience, she'd had patients "code" on her before, but always inside a hospital, where there was a safety net of expert staff and emergency equipment. At 6:30 p.m. on that dark road in late October 2003, it was up to her to keep the motorcyclist alive until the ambulance arrived.



The man, Dmitri Lurie, a local Harley-Davidson mechanic, survived, and his parents credit Fox with saving his life. Fox's colleagues (any one of whom, she maintains, would have done the same) were so impressed that they nominated her to become a Nurse Hero, an honor that's given to only 10 nurses nationwide each year by the American Red Cross and the journal *Nursing Spectrum*. Fox flew to Washington, D.C., to receive her award on December 3, 2004. J.D.

## Nurse residency program uses simulated patients

Flat line. It is your first day as a new nurse and you find your patient not breathing and pulseless. In that moment, the years of working diligently in school seem erased and you feel insecure and panicked." This is how DHMC oncology nurse Megan Rezendes R.N., M.S.N., described—in a recent article for a nursing journal—the anxiety that a new nurse can feel when faced with his or her first patient emergency.

Historically, nurses have acquired expertise in various specialties through years of experience with real-life patients. But a new graduate nurse residency program at DHMC, which Rezendes helped develop, aims to accelerate that learning curve by using human-patient simulators—sophisticated mannequins that respond physiologically and even talk like real patients.

**Skills:** The 12-week program is designed to help newly hired nurses, many of whom have just graduated from nursing school, become oriented to DHMC and develop the specialized skills they will need as nurses in a tertiary-care center.

Other academic medical centers have nurse residency programs, but "there are very few that have integrated human-patient simulation to the degree that we have," says Suzanne Beyea, R.N., Ph.D., the director of nursing research. (The Spring 2004 issue of *DARTMOUTH MEDICINE* described the use of human simulators in the DHMC physician residency programs.) Beyea,

along with Linda Kobokovich, R.N., director of nursing practice, and others, conceived of the program late in 2003. Orientation for new nurses varied greatly from department to department, so they created a common template. By June 2004, they'd assessed the needs of each department, developed a curriculum, and launched the program. Shortly thereafter, it received a three-year, \$471,000 grant from the U.S. Department of Health and Human Services.

Eventually, Beyea and Kobokovich would like to adapt the program for use in the yearly evaluations of nurses. "Simulation will help us ensure the competency of nurses around what we believe are critical care issues," says Kobokovich.

JENNIFER DURGIN

MARK WASHBURN



These trainees in DHMC's nurse residency tend here to a simulated patient.

## Worthy of note: Honors, awards, appointments, etc.

The Accreditation Council for Graduate Medical Education presented **Richard Dow, M.D.**, a professor of surgery, with its 2005 Parker J. Palmer “Courage to Teach” Award. The award recognizes directors of residency programs who exhibit particular dedication to teaching. Dow served as director of the DHMC general surgery residency program from 1995 to 2004; he is also chair of the Department of Surgery.



**Michael Simons, M.D.**, a professor of medicine and chief of the Section of Cardiology, was recently elected president-elect of the North American Vascular Biology Organization.

**June Robinson, M.D.**, chief of the Section of Dermatology, recently received the American Cancer Society’s St. George Medal—the highest honor awarded by the society to volunteers in the fight against cancer. It was presented at the annual meeting of the society’s Illinois chapter, with which Robinson was active until joining the DMS faculty earlier in 2004; she was previously on the faculty of Loyola University in Chicago.



**Victor Ambros, Ph.D.**, a professor of genetics, was a corecipient of Brandeis University’s 2005 Rosenstiel Award; it is presented

for “distinguished work in the basic medical sciences.”

**Hilary Llewellyn-Thomas, Ph.D.**, a professor of community and family medicine, recently received the Society for Medical Decision Making’s Eisenburg Award, which recognizes the practical application of medical decision-making research.



Three members of the DMS faculty were recently inducted into the Gold Humanism Honor Society: **Joseph O’Donnell, M.D.**, a professor of medicine; **Paul Manganiello, M.D.**, a professor of obstetrics and gynecology; and **William Boyle, M.D.**, a professor of pediatrics. Founded by the Arnold P. Gold Foundation, the society honors physicians, medical students, and residents for exemplary service to others, excellence in clinical care, and compassionate and respectful relationships with patients and families. The induction ceremony was held at the annual meeting of the Association of American Medical Colleges.

Two members of the DMS faculty were recently appointed to committees of the Institute of Medicine.



**Patricia Carney, Ph.D.**, an associate professor of community and family medicine, was named to its Committee on Improving Mam-

## INSIGHT INTO ALZHEIMER’S

When “Norman” suffered sudden personality changes and memory lapses as a result of Alzheimer’s disease, his wife, “Beatrice,” first encouraged him to share details of where he thought he was, then helped him to refocus on the present.

Norman and Beatrice aren’t real—but their struggles were made very real for an audience at DHMC a few months ago. Dartmouth-Hitchcock joined forces with the Alzheimer’s Association of Vermont and New Hampshire to present a staged reading of Barbara Hammond’s *Norman and Beatrice*, a play about a couple living with Alzheimer’s. During the discussion that followed, one audience member commended Beatrice’s tactic when Norman became confused. Dr. Robert Santulli, an assistant professor of psychiatry and director of the new Upper Valley Alzheimer’s Disease Resource Center at DHMC, agreed that “gently reorienting” someone is often more effective than constantly correcting them. The latter only makes them feel frustrated or less competent.

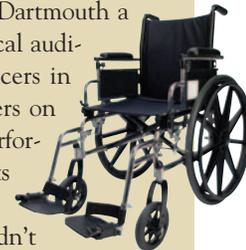
According to the Alzheimer’s Association, more than 70% of people with Alzheimer’s live at home, with family and friends as the primary caregivers. The new DHMC resource center will provide more support programs for such caregivers. G.C.C.



## BODY OF WORK IS DAZZLING

Next to professional athletics, professional dance is probably one of the most physically demanding careers. But that doesn’t mean it’s solely the domain of the able-bodied. Axis, a California-based dance troupe that includes dancers with and without disabilities, brought that message to Dartmouth a few months ago. For six days, Axis dazzled local audiences with its artistic works integrating dancers in wheelchairs, dancers on crutches, and dancers on their own two feet. In addition to doing six performances, the troupe met with medical students and gave a presentation at DHMC.

“Their message was inspiring—that they didn’t give up when faced with their medical condition,” says Elisabeth Gordon, coordinator of the arts program at DHMC. “A consistent theme seemed to be that health-care providers are often not aware of the resources available to their patients,” such as the insights offered by groups like Axis. After its stay at Dartmouth, the award-winning troupe spent five more weeks on the road, wowing audiences throughout New England. J.D.



mography Quality Standards, a subgroup of the National Cancer Policy Board. And **Elliott Fisher**, M.D., M.P.H., a professor of medicine, was named to the institute's Committee on Redesigning Health Insurance Benefits, Payment, and Performance Improvement Programs.

**Michael Cole**, Ph.D., a professor of pharmacology and toxicology, was named to the Cancer Molecular Pathobiology Study Section of the National Institutes of Health.

**Robert Harris**, M.D., an associate professor of radiology, was named a Fellow of the Society of Radiologists in Ultrasound.

**Bernard Arons**, M.D., an adjunct professor of psychiatry, was appointed executive director and CEO of National Development and Research Institutes, Inc. The nonprofit organization advances innovative solutions concerning substance abuse, mental health problems, HIV/AIDS, and related areas.

**James Wrobel**, D.P.M., an assistant professor of community and family medicine, and **Michael Beach**, M.D., Ph.D., an associate professor of anesthesiology, received the William J. Stickel Bronze Award for Research and Papers in Podiatric Medicine from the *Journal of the American Podiatric Medical Association*.

The New Hampshire chapter of the National Alliance for the Mentally Ill recently recognized two members of the DMS faculty. **Steven Cauble**, M.D., an assistant professor of psychiatry, was named the state's Child Psychiatrist of the Year; and **Lisa Mistler**, M.D., an assistant professor of

MEDIA MENTIONS: DMS

Among the people and programs coming in for prominent media coverage in recent months was Professor of Medicine **John Baron**, M.D., who chaired the steering committee for the study that led to the recent withdrawal of Vioxx, a pain medication manufactured by Merck. Baron was widely quoted, including in the *Washington Post*: "I



looked at [the data] and concurred immediately that the trial should stop,' Baron said. But first, Baron needed to get the approval of his steering committee. . . . This took nearly a week, during which Baron took precautions to guard against leaks of negative information and insider trading of Merck shares. . . . Baron said in the next few days, as he presented the data to company officials . . . , he experienced 'no pushback at all.' But then again, he said, 'if an independent committee makes a recommendation like ours, only a fool would tell us to buzz off.'" (See page 3 for more on Baron's role in the Vioxx controversy.)

"Cervical cancer is one of the leading causes of cancer deaths in women worldwide, killing nearly a quarter of a million women each year," noted the *Wall Street Journal*. So it was big news when a clinical trial from Dartmouth showed a vaccine to be up to 100% effective against the viruses responsible for more than 70% of cervical cancers.



"This is incredibly exciting," said study head **Diane Harper**, M.D., M.P.H., on ABC's *World News Tonight*. "There is no other gynecologic cancer, or any cancer in the human body, that can be completely prevented from a vaccine in the way that cervical cancer can be." *USA Today* and *U.S. News & World Report* also reported her results. (See page 4 for more on Harper's study.)

"Sunshine makes men more fertile!" trumpeted the *Hindustan Times* of India. The *Times* of London was a little more restrained in reporting the finding, which was presented at a National Institutes of Health conference: "Vitamin D—which is produced by the human body when exposed to

the sun—is critical to the production of sperm, and a lack of the nutrient may be linked to male infertility. The finding, from a team at Dartmouth-Hitchcock Medical Center, suggests that boosting Vitamin D production, either by increasing exposure to sunlight or by taking dietary supplements, might improve fertility among men. More work, however, is needed to confirm the link, and experts warned people against excessive sunbathing, which can cause skin cancer."

"I have seen the future of health care here at the Spine Center of Dartmouth-Hitchcock Medical Center," began a recent *Washington Post* article titled "Health care by the numbers saves money."



Continued economics reporter Steven Pearlstein, "It's not that Dr. **Jim Weinstein** and his colleagues have any breakthrough cures for back pain. What they do have is a revolutionary model for how doctors and patients interact that improves medical care while saving money."

A *Wall Street Journal* reader wrote to the paper's "Health Mailbox," about a "most helpful article on memory loss in chemotherapy patients. It was only after reading your article that my oncologist



started to pay attention to my complaints. How do I find out more about researchers at Dartmouth who are working on the issue of cognitive impairments in women after chemo?" The response began as follows: "Researchers at Dartmouth Medical School are studying ways that women treated for breast cancer can cope with cognitive changes. Information about their research can be found at [www.cancer.dartmouth.edu/breast/trials.shtml](http://www.cancer.dartmouth.edu/breast/trials.shtml)." For women who don't live close to Dartmouth, "Dr. **Robert Ferguson**, assistant professor of psychiatry at DMS, suggests *The Memory Bible* by Gary Small or *The Memory Workbook* by Douglas J. Mason."

"Simple telephone call found to help depressed people" was the headline of an *Oakland Tribune* story about a DMS-led study on treatment for de-

## A N D D H M C I N T H E N E W S

pression. Published in the *British Medical Journal*, the study “found that inexpensive enhancements to care by primary-care physicians, such as follow-up phone calls to patients, could boost response to treatment by almost 30 percent,” the *Tribune* reported. Depression affects “about one out of every 10 Americans, so even small improvements in care could bring relief to millions. Yet Dr. **Allen Dietrich**, a professor at Dartmouth and lead investigator on the new study, noted that the realities of today’s health-care system are such that any changes in treatment delivery will need to be of modest cost and take advantage of existing resources as much as possible.” (See page 9 for more on this study.)

National Public Radio’s *All Things Considered* recently gave airtime to a report in the *Annals of Internal Medicine* which predicted a shortage of doctors in the U.S. by 2020. Said reporter Patricia Neighmond: “But in



an editorial in the same issue, Dr. **Harold Sox** raises cautions.” Sox is former chair of medicine at Dartmouth and remains an adjunct member of the faculty. Went on Neighmond: “He says there are too many unknowns. For one, it’s not clear that older people in the future will need as much health care as older people today.” Said Sox himself on air: “There’s every reason to believe that people, in fact, are becoming less and less disabled as they get older now as, say, compared with 10 or 15 years ago.”

A Supreme Court appeal by a man sentenced to death for murdering a woman when he was 17 drew “intense interest from the American Medical Association, the nation’s psychiatrists and psychologists, and other health and research groups,” said the *New York Times*. “They’ve filed briefs with the court making a novel scientific argument—that juveniles should not be executed because their brains are still developing.” The *Times* quoted Dartmouth neuroscien-

tist **Abigail Baird**, Ph.D., who has done studies asking teenagers and adults to identify emotions on faces in photos. Adults recognize the emotions correctly, but teens don’t.



“When shown a face expressing fear, for example, they identify it as surprise or even happiness. ‘The finding was that the alarm system—the amygdala—was ready to go,’ Baird said. ‘But the interpreter—the prefrontal cortex—doesn’t care.’” Added Baird: “The people around [teens] are like an external frontal cortex,” helping them control impulses and regulate emotions.

The *Kansas City Star* highlighted “one of the leading scientific storehouses of fungi in the world,” the Fungal Genetics Stock Center at the University of Missouri in Kansas City (UMKC). Noting that the center “was founded at Dartmouth in 1960,” the article quoted a geneticist who uses its wares: “At Dartmouth Medical School, **Jay Dunlap** is using *Neurospora* from UMKC for a \$9-million research project involving eight universities nationwide.” Dunlap and his team “are trying to determine what each of the fungus’s 10,000 genes does. He’s relying on the center to maintain the bioengineered fungi the researchers produce. ‘They make it easy,’ Dunlap said. ‘No one questions whether the stock center is up to the task.’”

“‘Spray vitamins are the new snake oil,’ says Dr. **Timothy Quill**, a professor of anesthesiology



at Dartmouth Medical School.” Quill was quoted by the *Phoenix New Times* in an exposé about an entrepreneur with a history of marketing bogus health products, most recently spray vitamin supplements called Vitamist. “*New Times* asked Quill, one of the nation’s most respected drug researchers, to give his opinion about the products and claims of Vitamist. He had

nothing good to say. ‘The arguments given on the Vitamist Web site for taking these spray products are specious pseudomedical mumbo jumbo,’ he says. ‘It’s just foolishness. None of it makes any sense when you understand vitamins and the way they’re absorbed.’”



In late November, the *Los Angeles Times* reported on a study which found that about one out of six soldiers returning from Iraq suffers from major depression, anxiety, or post-traumatic stress disorder (PTSD). “‘The bad news is that the study underestimated the prevalence of what we are going to see down the road,’ said Dr.



**Matthew Friedman**, a professor of psychiatry and of pharmacology at Dartmouth and executive director of the VA’s National Center for Post-Traumatic Stress Disorder. Since the study was completed, Friedman said, ‘The complexion of the war has changed into a grueling counter-insurgency.’”

In a 400-page report released in October, the U.S. surgeon general said the country must take osteoporosis—a degenerative bone disease that affects 10 million Americans, 80%



of them women—more seriously. “The report, the surgeon general’s first on osteoporosis, predicted that by 2020, half of Americans over 50 will have or be at risk for the disease,” explained the *Baltimore Sun*. “‘These numbers are going to grow as baby boomers age,’ said one of the report’s authors, Dr. **Anna Tosteson**, a professor at Dartmouth Medical School and one of more than 100 experts who helped craft the document over 2½ years.” The report “emphasized that osteoporosis can have fatal consequences” but is a preventable disease.

psychiatry, was named Adult Psychiatrist of the Year.

**Ashraf Koraym, M.D.**, an instructor in medicine, was a founding member of the National Fiber Council, created as a resource for consumers, health-care professionals, and the media regarding the benefits of fiber.

**Lee Witters, M.D.**, a professor of medicine, was selected to receive the Profiles in Excellence Teaching Award, presented by Dartmouth College's undergraduate Student Assembly.

**Charles Barlowe, Ph.D.**, a professor of biochemistry, was recently appointed dean of graduate studies for Dartmouth College. He has also served as chair of the Molecular and Cellular Biology doctoral program.

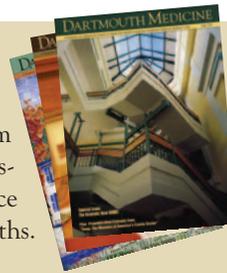
**Gerald O'Connor, Sc.D., Ph.D.**, a professor of medicine, has been appointed associate dean for the evaluative clinical sciences for DMS. In this capacity, he will promote the academic interests of the Center for the Evaluative Clinical Sciences.

**William Garrity**, director of the biomedical libraries, was selected as a mentor in the Leadership Fellows Program of the National Library of Medicine and Association of Academic Health Sciences Libraries.

**Roy Wade**, a third-year medical student, was this year's recipient of the Dean of the College Award for Service for his work in community outreach.

The Department of Veterans Affairs presented the White River Junction, Vt., **VA Medical Center**—for the third year in a row—with the Robert W. Carey Trophy Organizational Excellence Award.

PAGES PAST



In this section, we highlight tidbits from past issues of the magazine. These messages from yesteryear remind us of the pace of change as well as of some timeless truths.

From the Fall 1976 issue

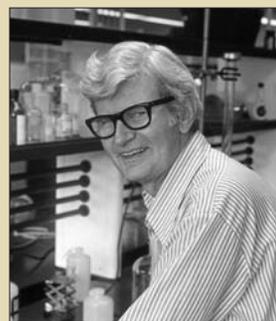
The issue bearing the date above was Vol. 1, No. 1, of this magazine. And what a different magazine it was. The pages of that first issue are notable for their less-than-scintillating headlines (such as “Overseers Meet” and “Class of 1979 Arrives”), as well as for a pretty bland black-and-white layout. Of course, the same could be said of both the tone and the look of many magazines back then.

In truth, it was also a very different institution represented in that first issue. Perhaps most significantly—given the advent in *this* issue of a new section devoted to research news (see page 3 for its inaugural appearance and page 2 for an explanation about its genesis)—the Dartmouth medical research enterprise was much more modest in the mid-1970s than it is today.

That's evident from the fact that only a couple of the 40 pages in the Fall 1976 issue were devoted to research. But it's also evident that work of high quality, if not of great quantity, was going on. There's a brief description of Dartmouth's nationally recognized program in sleep research: “For more than a decade, Peter Hauri, Ph.D., associate professor of psychiatry and director of the Dartmouth Sleep Laboratory, has been conducting research to learn why people don't sleep and what can be done to help them get a restful nightly slumber. . . . Dr. Hauri is currently evaluating the effectiveness of some nondrug procedures [and] has had good success substituting relaxation therapy and biofeedback for pills.”

That 28-year-old issue also contained capsule descriptions of several research projects under way in the Department of Microbiology, noting, for example, that “Elmer Pfefferkorn, Ph.D., is studying the genetics and biochemistry of the protozoan parasite *Toxoplasma gondii*” as a means of exploring the host-parasite relationship in humans.

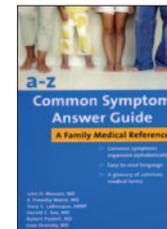
Such work, realized the department's then-chair, Clarke Gray, Ph.D., can be far-reaching: “The investigative approach . . . will help future researchers and practitioners remain effective in their respective fields long after graduation. In the words of Dr. Gray, ‘Students in microbiology learn to observe critically—an ability which will help them confront, with confidence, the inevitable changes in scientific knowledge.’”



Microbiologist Clarke Gray

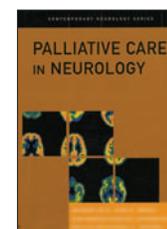
New on the bookshelf: Recent releases by DMS faculty authors

*A-Z Common Symptom Answer Guide*. By **John Wasson, M.D.**, professor of community and family medicine at DMS; et. al.; McGraw-Hill; 2004. This book is designed to help people answer questions about symptoms before



calling a doctor. It contains tips on what to do and not do in given situations and questions a doctor may ask. The symptoms covered range from allergies to chest pain and from vomiting to frostbite.

*Palliative Care in Neurology*. Edited by Raymond Voltz, M.D.; **James Bernat, M.D.**, professor of neurology at DMS; et al.; Oxford; 2004. This book aims to help define a new field, the palliative care of patients with degenerative neurological disorders. It outlines basic principles of palliative care for patients with stroke, Parkinson's, dementia, epilepsy, and other diseases.



It describes the specific needs of such patients as well as how to manage the most frequent symptoms, such as spasticity and communication impairment. Also discussed are ethical issues and decision-making at the end of life. ■