

F A C T S & F I G U R E S

As the centuries turn

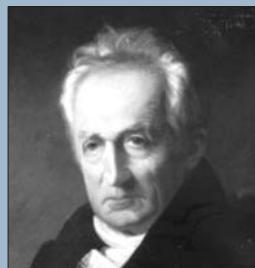
1800

New England Population

1.2 million

Dartmouth Medical School Faculty

1



1900

New England Population

5.6 million

Dartmouth Medical School Faculty

75



2000

New England Population

13.9 million

Dartmouth Medical School Faculty

550



DMS radiologist cochairs national lung cancer trial

The nation's largest-ever screening trial for lung cancer—a disease that kills 155,000 Americans a year—was launched a few months ago with considerable fanfare and has now begun to enroll 50,000 current and former smokers at 30 sites across the country. William Black, M.D., a professor of radiology at Dartmouth, is one of five cochairs of the study and was involved in developing the protocols for the massive trial.

Lives: "Lung cancer kills more people than cancers of the breast, prostate, colon, and pancreas combined," notes Black. "Our hope is that this study will lead to saving lives."

President George Bush and four-time Tour de France winner Lance Armstrong announced the trial at a White House event in September that highlighted anticancer efforts. The study is designed to determine if screening people with either spiral CT scans or standard chest x-rays, before there is any evidence of symptoms, can reduce deaths from lung cancer.

"There are more than 90 million current and former smokers in the United States at high risk for lung cancer, and death rates for this disease, unlike many other cancers, have not declined," notes the National Cancer Institute's John Gohagan, Ph.D., codirector of the National Lung Screening Trial (NLST). Participants—current or former smok-

ers between the ages of 55 and 74—will be randomly assigned to receive either a chest x-ray or a spiral CT once a year for three years. Researchers will continue to contact participants annually, to gather follow-up health information, through 2009.

Spread: Today, by the time it is detected, lung cancer has spread outside the lung in 15% to 30% of those diagnosed with the disease. Spiral CT, a technology introduced in the 1990s, can pick up tumors well under 1 centimeter in diameter, while chest x-rays can detect 1- to 2-centimeter tumors. Spiral CT uses x-rays to scan the entire chest quickly, in about 15 to 25 seconds; then a computer assembles the images into a three-dimensional model of the lungs. The more sophisticated technology has some drawbacks, however. Its findings are less specific than those of an x-ray, and a spiral CT costs four to five times more than a standard chest x-ray.

More than half of the hospitals in the United States own a spiral CT machine and routinely use it for "staging" lung and other cancers—that is, determining how advanced a cancer is after it is diagnosed.

Some hospitals have also begun performing spiral CT scans in the hope of finding early lung cancer in smokers and former smokers. However, no scientific evidence to date has shown that lives are actually saved as a result of screening or early detection of lung cancer, using either spiral CT or chest x-rays.

"Conventional wisdom suggests that the smaller the tumor

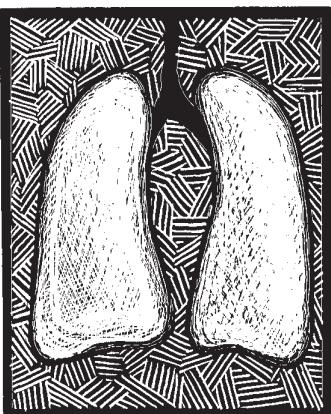
when it is found, the more likely the chance of survival—but that remains to be proven,” says the NLST’s other codirector, Denise Aberle, M.D. “Because of the number of individuals participating and because it is a randomized, controlled trial, NLST will be able to provide the evidence needed to determine whether spiral CT scans are better than chest x-rays at reducing a person’s chances of dying from lung cancer.”

Three of the 30 NLST sites—all of which are National Cancer Institute-designated comprehensive cancer centers—are located in New England. In addition to Dartmouth’s Norris Cotton Cancer Center, they are Beth Israel Deaconess Medical Center and Brigham and Women’s Hospital, both in Boston.

Rank: According to the National Cancer Institute, Maine, New Hampshire, and Vermont all rank above the 50th percentile in lung cancer mortality per 100,000 population.

ALAN SMITHEE

SUSANNE LIEJUN



Cancer of the lung is the focus of a massive new national trial; a radiologist at Dartmouth is one of its cochairs.

Encouraging data about a new option for prostatectomy

Since May of 2001—when urologists Eric Wallen, M.D., and John Heaney, M.D., began using laparoscopic technology to perform radical prostatectomies at DHMC—more than 100 patients have chosen the minimally invasive surgery over traditional open surgery. Laparoscopic surgery offers many advantages, including less pain, less bleeding, and a shorter recovery period. Still, the technology is relatively new. Lacking the 20-year track record of standard prostatectomy, laparoscopic surgery needs to prove itself an equally effective treatment, explains Wallen.

An important step in that direction occurred in September, when he and Heaney presented follow-up data, on 62 of their early laparoscopic patients, at a conference of the American Urological Association. As a group, these patients (who’d had a minimum of six months’ follow-up) showed results comparable in three key areas to the results for traditional radical prostatectomy: cancer control, urinary control, and erectile function. These findings are extremely encouraging, says Wallen, noting that both urinary and erectile function often take a year or two to return to normal after either type of surgery.

Only about 30 medical centers in the country are currently performing laparoscopic radical prostatectomies, and Dartmouth



FLYING SQUIRREL GRAPHICS

DHMC urologist Eric Wallen reported recently on a series of patients who'd had a laparoscopic prostatectomy. Only about 30 medical centers nationally are performing the high-tech procedure, and DHMC is among the top 10 in terms of volume.

is among the top 10 in volume; 90% of radical prostatectomies at DHMC are now done laparoscopically.

The technique, Wallen explains, “seeks to replicate all principles of the open surgery.” In both types of surgery, the cancerous prostate gland is separated from the bladder and urethra and is removed intact. The essential difference is that open surgery requires a six- to eight-inch incision, but laparoscopy is performed using instruments that are inserted through five tiny incisions, each less than half an inch long.

Lens: A lens inserted through an incision at the navel enables the surgical team to see the prostate gland and surrounding tissue, and the instruments go in through four lower incisions. Instead of looking directly into the patient’s abdomen, the surgeon sees the operative area on a computer screen.

For someone trained in traditional surgical techniques, where the surgeon’s hands are inside the patient’s body, learning to perform a laparoscopic radical

prostatectomy is no easy task. “The light and magnification help tremendously, but working in two dimensions is tricky at first,” says Wallen. He, Heaney, and DHMC surgeon William Laycock, M.D., traveled to Paris to learn the procedure.

The difficulty of mastering the laparoscopic technique may account for its availability at relatively few medical facilities in the U.S. But the steep learning curve, Wallen believes, is more than offset by the benefits for patients. “There is no doubt that there’s less pain,” he says, “and people are back on their feet sooner.” Patients are usually discharged from the hospital within a day or two after surgery and can resume normal activities in about three weeks.

Data: Nearly 185,000 American men are affected by prostate cancer each year. So if the follow-up data on patients treated with laparoscopic surgery continues, as expected, to show positive results, no doubt more surgeons will choose to tackle the learning curve.

CATHERINE TUDISH

In a hospital room, a chance meeting of two WWII fliers

Kenneth Magner was a lead pilot on B-26 "Marauder" bombers in Europe during World War II. James Ashley was the lead navigator in another Europe-based B-26 squadron. On December 23, 1944, both squadrons engaged in a bombing raid on the same railroad viaduct in Ahrweiler, Germany. As Ashley's squadron was returning to base, 60 enemy fighter planes attacked Magner's squadron, destroying all but two of the 18 bombers. Magner's plane was one of the two that made it back.

Almost 60 years later, the two men met for the first time—at Dartmouth-Hitchcock Medical Center. Magner, one of DHMC's 87 "patient sitters," had been assigned to sit with Ashley in his hospital room while Ashley was recuperating. Sitters spend time with hospitalized patients who need to be under constant observation. As Magner and Ashley chatted, the two men discovered that they had been in the same terrible place all those years ago, just minutes apart.

Then Mark Natola, DHMC's chief EEG technologist and a WWII buff, got wind of the story. Avocationally, Natola is a documentary filmmaker who specializes in World War II subjects, especially the aircraft of the era. His work has been featured on television, including on the A&E and History Channels. "I had a chance conversation with Ken in the EEG lab," ex-

plains Natola. "He was telling me about his experience."

When Natola asked Magner if he would be willing to talk about his experiences on camera, Magner said yes and mentioned that Ashley might be interested in participating, too. Before long, Natola was interviewing and filming them as they recalled their days flying B-26s in the 9th Air Force. The interviews will be part of a bigger project that will also include the recollections of other war veterans.

Missions: Magner flew 35 combat missions from England and France against non-civilian targets in Germany—including rail yards, military bases, and bridges—as well as tactical missions in support of ground troops.

Although his plane was damaged in 31 of those missions, he says December 23, 1944, was one of his most unforgettable days of the whole war. That engagement earned his squadron a Presidential Unit Citation, which noted that "men who were wounded remained at their posts and continued firing, and aircraft shot out of the sky went down with their guns still blazing at the enemy."

The enemy fighters "caught us off guard," says Magner of that day. "We were looking into the sun and didn't see them until they hit us."

That raid stands out among the 40 missions that Ashley flew, too. From his navigator's seat in the transparent nosecone of his B-26, he wasn't quite able to see the violent aerial battle Magner and his colleagues were engaged in, but he could hear the radio chatter describing the firefight. There was nothing his squadron could do to help, however.

Magner continues (with his wife, Jeanadele, who is also a patient sitter) to enjoy his job at DHMC, although he hasn't met anyone else from his past. Yet.

LAURA STEPHENSON CARTER



MARK AUSTIN-WASHBURN

Kenneth Magner is employed as one of DHMC's 87 "patient sitters." He recently discovered that he had something quite amazing in common with a patient in his care—the two, both WWII aviators, had been involved in the same bombing run over Europe nearly 60 years ago. They had never met until they crossed paths at DHMC, however.

Virtual fellowship teaches genetics via CD or the Web

There's no doubt about it, Joseph Henderson, M.D., knows a lot of stuff. Stuff like epidemiology, public health, statistics, scientific visualization, decision-support systems, diving medicine, cellular neurophysiology, and computer-programming.

Stuff: The director of DMS's Interactive Media Laboratory, Henderson has spent the past three years drawing on this "stuff" to create an interactive educational program titled "Genetics in Clinical Practice: A Team Approach." He was the designer, author, director, and producer of the program, which has just been released. He even gets a credit for the music.

The program takes the user into a "virtual practicum," or mini-fellowship, on the evaluation and testing of genetic diseases. It is aimed at third-year medical students, residents, or primary-care providers and is available on CD or at <http://iml.dartmouth.edu/education/cme/Genetics/>. Henderson collaborated on the project with the Centers for Disease Control and Prevention and the American College of Medical Genetics.

Via computer, the user enters an exam room and interacts with four simulated patients, some of whom come back for repeated visits. The patient and the attending physician ask questions, which the user answers by selecting from a menu of responses; the program gives immediate



This "clinic" is the setting for a genetics educational program developed at DMS.

feedback on the choices. The user can also sit in on genetic counseling demonstrations or listen to world experts in genetics. Or, in a "lectures kiosk," the user can hear Francis Collins, M.D., Ph.D., director of the Human Genome Project, discuss the future of medical genomics.

There are five other mini-lectures by authorities on various aspects of genetics. Of course, the user can't ask questions of any of these experts, but the program provides links to Web sites with up-to-date information on genetic testing. There are also video interviews with four real patients affected by genetic conditions. Finally, there are virtual genetics laboratories, where the user can learn how genetic tests are done. "Genetic testing is not like ordering a cholesterol level," Henderson points out. "You need to have an appreciation of the science behind such testing, as well as sensitivity toward the associated psychosocial aspects."

Exacting: "It takes exacting people skills and experience to counsel a couple where the wife is pregnant with a child that might have a devastating genetic disease, such as cystic fibrosis," he adds. "The testing is expen-

sive, may not be covered by medical insurance, and it can lead to stigmata."

Some of the "stuff" that Henderson brings to his unusual line of work he learned at SUNY-Buffalo (where he earned a master's in physiology and his M.D.), some at Yale (where he earned an M.Phil. in epidemiology), and some as a career naval officer; he retired from the Navy in 1988 and came to DMS in 1989.

A useful feature of his latest program is that it can be terminated at any time, and the computer will remember where the user was so the practicum can be reactivated at that point. Learning in this manner is especially attractive for practitioners who did their training before genomics became the clinical discipline it is today. The program even includes a form so users can claim continuing medical education credit. Those who do the whole program are eligible for 10 hours of credit, but it's possible to pick from dozens of options.

Now, as users immerse themselves in his newest program, Joe Henderson will be trying to stay abreast of the technology curve by learning still more stuff.

ROGER P. SMITH, PH.D.

DMS researcher is honored with inaugural award

If there's anything more gratifying than receiving a major professional award, perhaps it is being the inaugural recipient of a brand new award—being recognized, in other words, as the archetype of that particular accomplishment.

If so, that makes Dartmouth's Michael Sporn, M.D., the archetypal cancer-prevention researcher. Sporn—who coined the term "chemoprevention," the idea of using vitamins, drugs, or other agents to stop cancer before it starts—was recently named the first recipient of the Excellence in Cancer Prevention Research Award.

Major impact: The international award recognizes an individual whose contributions have had a major impact on, and stimulated new directions in, the field of cancer prevention. Nominations were solicited from around the world by the two organizations—the American Association for Cancer Research and the Cancer Research Foundation of America—that joined forces to establish this new honor.

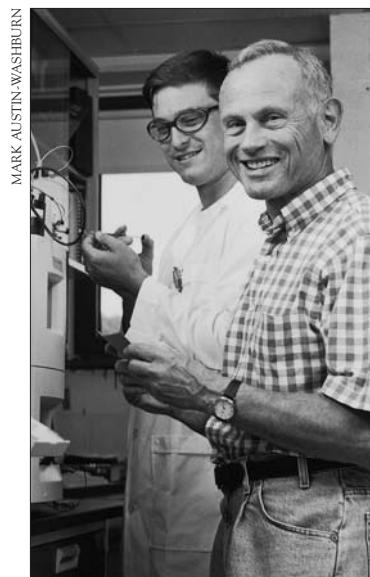
Sporn's innovative work dates back to the 1970s, when he suggested that there might be ways of combating cancer other than using cytotoxic drugs once the disease had been diagnosed. He continues to advocate the importance of preventing cancer. "The emphasis should be on suppressing carcinogenesis—the development of cancer—before

it becomes evident as invasive or metastatic cancer," he explains. Sporn was one of the first researchers, for example, to show the chemopreventive potential of Vitamin A and its analogs, retinoids—another term that he coined.

His current work involves substances called triterpenoids—structures occurring in plants that have been found to have interesting biological, pharmacological, and medicinal effects.

The award "not only recognizes Dr. Sporn's accomplishments," according to Mark Israel, the director of Dartmouth's Norris Cotton Cancer Center, but "it brings greater public attention to the extraordinary efforts and progress being made through laboratory-based cancer prevention efforts."

ALAN SMITHEE



Michael Sporn, right—pictured here with graduate student Andrew Place—was the inaugural recipient of an award in the field of cancer prevention.

A space odyssey: Psychological support in flight

3 . . . 2 . . . 1 . . . blast off! Many people dream of going up in space—the countdown, the snazzy suits, and the weightless environment. But dealing with interpersonal conflicts or depression usually isn't part of such dreams.

Astronaut: Most adults come home from work saying simply, "I had a hard day at the office." But what might the average astronaut say upon coming home from a two-to three-year mission to Mars?

According to clinical psychologist James Carter, Ph.D., a senior researcher at DMS's Interactive Media Laboratory, mild depression and interpersonal conflict are among the top medical challenges facing astronauts on long space flights.

To address these problems, Carter and a DMS research team have been developing a self-administered, interactive computer-based psychotherapy program. Called the "Smart Medical System for Psychosocial Support," it currently includes three modules—one focused on depression, one focused on conflict, and one that's a general psychological assessment tool.

The aim of the system is to assess and manage problems such as depression and conflict and prevent them from becoming serious enough to jeopardize a mission. "This program is designed to make sure that the crews are



Dartmouth researchers James Carter, right, and Jay Buckey, left, are trying to capture the essentials of psychotherapy in an interactive computer program, for use on long space flights.

aware of [depression] and know how to detect it," explains Jay Buckey, M.D., an associate professor of medicine at DMS, a former astronaut, and coprincipal investigator for the project.

All the modules will simulate a human presence through the use of virtual mentors—video clips of NASA psychologists and veteran astronauts—who discuss early signs of depression and conflict and lead the user through the program.

The depression module uses problem-solving therapy to help astronauts cope with such difficulties as homesickness and monotony. It guides astronauts through a step-by-step process to identify signs of depression and to set realistic goals to resolve it. Astronauts keep information confidential by storing it on personal CDs. They can then monitor their own progress at any time during the flight.

The conflict module includes video and audio simulations of hypothetical problems that

could occur among crew members during a flight. The simulations are performed by professional actors and were shot in a space-station simulator.

Scenario: For example, a scene may show two crew members who have started to chafe at living and working in tight quarters. Eventually, the actors draw the astronaut into the scenario, and the astronaut has to decide how to resolve the tension by choosing from a menu of responses. The chosen response is then played out, and the astronaut can see if it proves to be a workable solution.

After creating scenarios for this module, Carter and Buckey interviewed about a dozen veteran astronauts to get their input. "Most people felt the scenarios were realistic, so I felt that was encouraging," says Buckey. Adds Carter, "We ask how a veteran crew member . . . would handle a situation and ask what kind of pitfalls a novice might do in a situation that wouldn't be so

good. There's a wide range of opinions . . . not one obvious best choice."

The team also includes an expert in conflict resolution, Leonard Greenhalgh, Ph.D., a professor of management at Dartmouth's Tuck School. He says that on long space flights, where astronauts work in very small spaces, conflict is inevitable and the key is preventing escalation. "If you can sort out what are the pathways leading to the emotions getting generated, then you can de-escalate" the conflict, he explains.

During the summer of 2003, psychologists and astronauts at NASA's Johnson Space Center in Houston will test a prototype of the system. The next steps will be to finish the initial modules and then add more, including one on anxiety. The prototype is being developed with support from the National Space Biomedical Research Institute.

Potential: Carter says the system also holds potential for use in isolated places on terra firma, such as offshore oil rigs, submarines, or polar outposts. "Even more exciting is making versions of the program for the general public to use in primary-care settings," he adds.

For now, though, the focus is on helping astronauts stay psychologically fit and get along with each other. "You're stuck up there, and so maintaining those relationships is really essential, not just for your own happiness but also for safety," says Carter.

MATTHEW C. WIENCKE

New students follow many paths to Dartmouth

What do a ballet dancer, a combat engineering officer, and a brick-oven pizza chef have in common? All three are among the 83 first-year M.D. students whose unusual paths to DMS have ranged from running marathons in Honolulu to working with polio-afflicted children in Calcutta.

Selected from a pool of 4,947 applicants, the '06s came from 29 states and 55 undergraduate institutions. Ten were born outside the U.S.; 47% are women and 53% are men; 25% are persons of color or international students; and 11% are from racial or ethnic groups underrepresented in American medicine.

Autobiographies: The brief autobiographies that the students wrote to introduce themselves to each other reflect an enormous variety of backgrounds. The class includes six EMTs, several Peace Corps and VISTA volunteers, a Fulbright scholar, a submarine officer, a flamenco dancer, a martial arts expert, an actor, a classical guitarist, a triple-jump specialist in track who also does embroidery, and a sea-kayak guide for L.L. Bean.

Among this eclectic group's first activities together was composing a class mission statement, shown in the adjacent box.

Some students also wrote humorously about their family life and childhood, such as Amanda Gann: "As a consequence of being sandwiched between two

ALL: FLYING SQUIRREL GRAPHICS



These smiling faces and brand new white coats belong to a few of DMS's 83 new M.D. students: top, from the left, Sai Li, Rodwell Mabaera, and Dennis Shub; lower left, Erica Chung; and lower right, Stacey Crawford. Also matriculating this fall were an additional 100 students in half a dozen master's and doctoral programs—including the first candidates in DMS's brand new master's of public health program.

brothers, I was a tomboy. Dresses? Who, me?" Then, at age 15, she started "competing in ballroom dancing, wearing sequined dresses with five pounds of make-up, false eyelashes, and plastic fingernails." On a more serious note, Gann said it was cutting her hand in a car accident at age five, and seeing the "inner gooey workings," that sparked her interest in medicine.

Scott Hughes—who served as a major in the Air Force, flew nearly 60 combat missions over Iraq, and was a test pilot for B-2 and B-1 stealth bombers—enrolled in DMS to fulfill a dream that he has had since he was 15: to become an Air Force flight surgeon.

Sabrina Selim "joined the Peace Corps and spent nearly two years living in a mud hut in the middle of Niger, West Africa. The people there became like family to me. I delivered their babies, ate their food (millet, okra, and bugs), and taught basic contraception/hygiene/nutrition lessons. . . . It is still my dream to return there, or other underserved parts of the world, as a physician." Selim majored in molecular biology at the University of California at Berkeley and

Mission Statement of the DMS Class of '06

To become the most competent and compassionate physicians we can be—ones who are outstanding in all aspects of "doctoring";

To respect and support each other along this awesome journey and not be afraid to be vulnerable or ask for help now and in the future;

To grow in all aspects of our lives while we are here, finding balance between self-care, time with those we love, and our studies;

To contribute to DMS and help it become an even better community and place to learn;

To recognize and celebrate our loved ones and all those who have helped and are helping us along our way;

To make our dreams become reality, but to never stop dreaming and never compromise our core values;

To serve our patients, our communities, and our profession and to strive to change the world for the better by making a difference in what we do.

has worked with patients with metastatic breast cancer.

Students wrote about their research interests as well. Derek Jenkins, who graduated from Dartmouth College with an engineering degree, said his senior thesis project "encompassed the design and construction of a bioreactor simulating the physiologic environment necessary for proper hyaline articular cartilage differentiation." Jenkins added that he hopes to continue his hobbies of "sculpting, woodcarving, and rebuilding classic cars" while he's at DMS.

Five of the '06s are enrolled in the M.D.-Ph.D. program—three in molecular and cellular biology and two in pharmacology and toxicology. They join 26 students already in the M.D.-Ph.D. program.

Candidates: There are also 38 new doctoral candidates in the biomedical sciences—27 in molecular and cellular biology, nine in pharmacology, and two in physiology.

In addition, the Center for the Evaluative Clinical Sciences (CECS) welcomed 21 new master's degree students, three new Ph.D. candidates, and 38 new M.P.H. students. They join 37 continuing CECS students and 4 postdoctoral CECS fellows.

Whatever program they're entering, the new students tend to cite Dartmouth's collegiality as an important factor in their coming here. Wrote medical student Roman Johnson, for example, "I am really looking forward to . . . the rewards of a small, tightly knit cadre of classmates."

MATTHEW C. WIENCKE



John Raser did a triathlon in memory of a friend who died on 9/11.

Student proves his Ironman mettle

First-year Dartmouth medical student John Raser has faced tests of more than his mind since the beginning of the school year. On August 25, he challenged the limits of his body and spirit by competing in the Boulder, Colo., Ironman 5,430 Triathlon—named for the elevation at which the race occurs. Competitors swim 2.4 miles, bike 112 miles, and finish by running a full marathon—26.2 miles.

A 2001 Dartmouth College graduate, Raser had always thought he might someday do a triathlon. So when he heard in September 2001 about a scholarship being established in memory of his friend Juan Cisneros, a 1999 Dartmouth graduate who perished in the attack on the World Trade Center, Raser decided to honor Cisneros and raise funds for his scholarship by competing in the Boulder Ironman.

Raser and Cisneros first met during the summer of 1996 while both were working as junior volunteers at the Palomar Medical Center in Escondido, Calif., where they grew up. They crossed paths again in the fall of 1997, when Raser joined Cisneros's fraternity and Cisneros was Raser's "big brother."

"Juan was always a comforting voice for me and others that he touched during his life," recalls Raser. "He was the kind of person that made everyone he met feel important."

Raser, who hopes to enter preventive medicine, admits that "at times I thought I was crazy going after an Ironman when I had never even run a marathon before, but I knew I had to do something colossal if I was going to attempt to honor Juan." His training suggested he could finish the inhumane race in 13 hours. "My goal from day one was just to finish."

That goal seemed in jeopardy halfway through the marathon when his leg muscles locked up. "I was literally dragging my feet the last 10 miles, trying only to keep moving until next aid station. By the time of my last lap, I knew was going to finish, no matter if I had to walk or crawl." And finish he did—not only first in his age group, but in a time of just over 11 hours. A.T.

Breaking the cycle of silence about domestic violence

Domestic violence is such a painful subject that even physicians may hesitate to broach it with patients. Although it's assumed that abused women benefit emotionally and physically from confiding in their physicians, the medical world has still been hesitant to play a role in stopping domestic violence.

Change: Second-year DMS student Meighan Smith hopes to change that. Building on information previously gathered by third-year student Wendy Osterling, Smith is working with Dartmouth family physician Patricia Glowa, M.D., to study female patients who disclose domestic abuse to their doctor.

"We're trying to get at outcomes," Smith says. "My hope is that we can come up with some real answers for physicians about what they're going to be able to do to help their patients. Because they have access to intimate aspects of people's lives, physicians have an amazing opportunity to identify violence and try to intervene."

In the study—one of several student research initiatives supported by the Department of Community and Family Medicine—Smith and Glowa will examine women's perceptions of their relationship with their physician before and after they have discussed domestic abuse. They will also study whether women who confide in their physician experience an alleviation of



In addition to focusing on her studies, medical student Meighan Smith is doing research on domestic violence, hoping to help physicians help battered women.

symptoms related to the abuse and whether their situation with the batterer improves.

Handful: Smith says the project is important because little information exists about the health outcomes of abused women. Of the approximately 100 studies about physicians and domestic violence, only a handful address outcomes or the female patient's perspective.

But despite the study's potential, Smith and Glowa have encountered some barriers while organizing the project; Smith attributes this to the sensitive nature of domestic abuse. However, three family practices in the Upper Valley recently made a commitment to participate, and a practice in Concord, N.H., has also expressed interest.

Their hope is that the results from this small study will justify funding for a larger project. Not only do they agree on the work's importance, but they've enjoyed their collaboration. "Meighan . . . brings a level of commitment and enthusiasm to our work that is very much a motivation to

me," says Glowa. "She makes me want to achieve a high standard in order to live up to her expectations." And for her part, Smith says of Glowa, "She is an incredible inspiration. She does a lot with the community, but is able to be present with her patients and present as a teacher."

Smith's interest in women's health is long-standing. As an undergraduate at Bryn Mawr, she volunteered at an abortion clinic, coordinated a rape-awareness project, and wrote a senior thesis on sexual violence. And before coming to DMS, she worked in health-care policy at Harvard and as a women's hotline counselor in California. She chose DMS over other medical schools because she saw in the Dartmouth students she met during her interview a strong commitment to volunteerism.

"This research project has reenergized me," Smith says. "It makes me feel like what I'm doing in class is more relevant . . . makes me see where my education will eventually lead."

KATRINA MITCHELL

Smallpox issue keeps DMS's Modlin in the public eye

In the Fall 2002 DARTMOUTH MEDICINE, infectious disease expert John Modlin, M.D., defended a controversial stand on smallpox vaccinations. At that time, he and the national committee that he chairs—the Advisory Committee on Immunization Practices (ACIP) of the Centers for Disease Control and Prevention (CDC)—had recommended vaccinating only some health-care workers, at designated hospitals, in advance of possible bioterrorism.

Since then, the ACIP has expanded its recommendations to include workers at all the nation's 5,100 acute-care hospitals. The revised guidelines encompass some 500,000 health-care workers, instead of only 10,000 to 20,000.

At its June meeting, the 15-member committee, working under the assumption that the likelihood of a smallpox attack was small, judged that the vaccine's risks—side effects like rashes, scarring, encephalitis, and even death—outweighed the benefits of wider administration.

Public debate continued during the summer and fall. The Department of Health and Human Services (DHHS) proposed vaccinating 500,000 health-care workers; then 10 million police, fire, and other emergency personnel; and eventually the entire population. Still, the academic physicians and public health officials of the ACIP stood firm.

Then, in October, the ACIP met again. This time, the group recommended vaccinating workers at all acute-care hospitals.

Why the change of heart? Between June and October, says Modlin, "DHHS, in consulting with state health departments, decided that all acute-care hospitals should be given the opportunity to participate, not just those earlier designated as smallpox hospitals. So the real expansion was the number of participating hospitals."

The CDC asked the ACIP to consider a few other smallpox issues in October, including care of the vaccination site. The panel recommended that it be covered to contain the vaccine—which is made from a live virus that can be transmitted by person-to-person contact.

Plans: Just as this issue went to press, President Bush announced that he was ordering all members of the military to be vaccinated for smallpox and was starting a two-stage plan to vaccinate medical and emergency personnel, but was not recommending mass vaccinations at this time. "In the meantime," says Modlin, "the states are proceeding with developing plans to quickly vaccinate everyone in the event of a widespread smallpox emergency."

The world's last reported smallpox death was in 1978, and the disease was declared eradicated in 1979, so vaccination for it was stopped. Viral specimens were retained by the CDC and the former Soviet Union, although experts fear some terrorists may have samples, too.

Laura Stephenson Carter

Igniting the medical passions of undergrads

As dusk settled on a Nicaraguan village, the last yawning rays of light illuminated three figures hard at work in a corrugated-metal shed: a Dartmouth doctor, a Nicaraguan patient, and Eric Wang, then a Dartmouth College senior. It had been a very long day for Wang, who was learning how, among other things, to identify eye cancer and to sensitively inform a patient of the affliction.

Wang was one of nine Dartmouth undergraduates who traveled last winter to Siuna, Nicaragua, with two Dartmouth doctors—William Young, M.D., and John Richardson, M.D.—and two members of the DMS Class of '02—Amy Vinther and Jenny Noon. In two weeks, the group provided preventive and acute care to over 700 patients.

Service: The visit was the first project of the Dartmouth-wide Cross-Cultural Education and Service Program. The program brings together resources from Dartmouth's professional schools to give students and faculty an opportunity to apply their academic knowledge to service in a developing country. In addition, it gives undergrads a chance to work with students and faculty from the graduate schools.

Nearly every undergraduate on the trip spent a day assisting Young, an associate professor of obstetrics and gynecology. He recalls that "the experience was insightful for many and uncom-

fortable for some, as they worked in tight confrontation with women's health problems prevalent in a developing country."

"At the same time," Young adds, the undergraduates "matured by working in the presence of a patient and doctor and developed an appreciation for the medical and social problems these women experience."

For example, the students observed women turning down a chance to be screened for cervical cancer because they thought it would cost an extra \$3.00—until they learned that the team was funding the test.

The Dartmouth group also held two days of classes for 20 Nicaraguan midwives. "We all did a lot of listening," recalls Young. "Their stories were wonderful to hear."

Joel Wickre, then a junior, was a translator for the classes. He was so moved by Siuna's desperate need for clean water that he returned there in the spring to do an epidemiological study of the town's water system.

Drew Crapser, a senior, found the one-on-one conversations with the doctors and the medical students especially rewarding. "The free afternoon I spent with Amy Vinther stands out in my mind. During that afternoon, she shared with me why she decided to pursue medicine, and I've held that as one of my most meaningful experiences of the trip."

Junior John Myers, who had long planned to become a doctor and spend some time each year in a developing country, credits the trip with cementing this goal. "Talking with the med-



Dartmouth undergraduates Joel Wickre (above, left) and John Myers (above, center) worked in Nicaragua with the DMS students on the left: Jennifer Noon (left) and Amy Vinther (right).

ical students, I found that they were figuring out just as much as I was if they wanted to practice this type of medicine as part of their life's work," he recalls.

The undergraduates were also impressed with how much the medical students could do—take patient histories, suggest treatment options, and even perform minor surgical procedures.

Clinics: "I was intrigued that after a few years of medical school, Amy and Jenny were able to sit in the doctor's seat and direct the work in the clinics," says Myers. "To see that they could do that after just a few years in medical school made me much more confident that I wanted to attend medical school immediately rather than wait."

The medical students "were great with patients," says Wang,

"but equally excited to empower undergrads to work with the patients ourselves. It struck me that, even in the midst of absences of clean water and microscopes, the doctors were going out of their way to teach us. They really modeled the positivity of being a doctor through their openness, care, and compassion."

Premeds sometimes wonder how much weight to give to tales of overworked American doctors and abstruse HMO policies. "Nicaragua avowed the humanness of this profession to me," says Wang. "Our doctors truly enjoyed what they were doing and were willing to share with us because of that enjoyment."

"More than anything else," he adds, "I learned there is hope in this job, and yet that medicine is more than just a job. I learned that one can serve as a role model in this profession through sharing one's own passions and encouraging those of another."

ADAM TANNEY

DMS sets record for one-year jump in grant funding

Dartmouth Medical School experienced its biggest-ever increase in research funding, with a 38% jump from \$80.8 million in fiscal year 2001 to \$111.1 million in 2002. The Department of Community and Family Medicine attracted the largest share of the total—\$18.8 million, a 22% increase. Grants to the Department of Microbiology almost doubled, from \$6.6 million to \$11.6 million, while Pediatrics more than tripled its research funding, from \$3 million to over \$9 million.

Support: "This is an exciting time for the Medical School," notes Acting Dean Ethan Dmitrovsky, M.D. "We have outstanding faculty who are capturing substantial funding support."

The last time there was a percentage increase nearly this big was 12 years ago, when funding rose 36%, from \$25 million in 1989 to \$34 million in 1990. DMS's research income has more

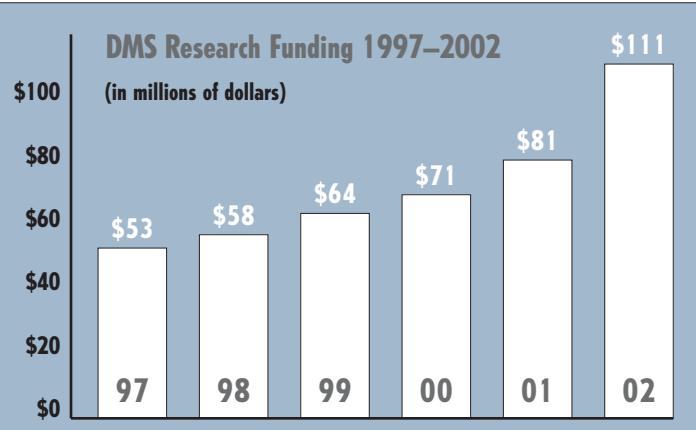
than doubled since 1997, when the total was \$53.3 million.

More than 60% of DMS's funding comes from the National Institutes of Health (NIH). DMS ranks above the 50th percentile in total dollars awarded by the NIH and is between the 80th and 90th percentiles in funding per basic science faculty member. In addition to the NIH, grants come from other federal agencies, state governments, and corporations and foundations.

DMS accounted for 71% of Dartmouth College's \$156.9 million in external funding in fiscal year 2002 (July 1, 2001–June 30, 2002). With a 22% increase in grants, this was the most successful year ever for the College as a whole, too.

"The tremendous increase in sponsored research can be credited to the enormous success of our faculty in getting awards in a highly competitive environment," says Nancy Wray, the director of Dartmouth's Office of Sponsored Projects. Dartmouth's growth was "the highest among the Ivies," she adds.

SUSAN KNAPP



Growing x-ray technologists in DHMC's backyard

DHMC recently teamed up with a local educational institution to tackle a problem plaguing hospitals nationwide—a shortage of health-care workers, especially radiographic technologists. The Bureau of Labor Statistics says the U.S. will need 55,000 more radiographers by 2008.

Alleviate: Donald Wenz, Ph.D., the president of Lebanon (N.H.) College, figured his institution—which offers associate's degrees in several fields—might help alleviate that shortage. So he approached human resources executives in the region, including June Fisher at DHMC, who introduced him to Monte Clinton, the administrative director of radiology at DHMC.

It turns out that Clinton was already worried about finding enough technologists to staff a new imaging facility now under construction at DHMC. "I was doing the plan for the expansion and realized that in 2004, I was going to need 24 more techs," says Clinton. He was delighted to learn about Wenz's plan and was eager to help.

"We got one of our suppliers to give him an x-ray room," says Clinton. In fact, Lebanon College's program is the only one in northern New England with a live x-ray lab—a fully functioning facility where students can learn how to position patients and can take real x-rays.

"That means our students go to area hospitals with the ability

MARK AUSTIN-WASHBURN



Bruce Van Houten, right, is the director of a new x-ray technology training program that DHMC helped get going.

to take and process x-rays," says Wenz. In many other programs, students aren't able to use real equipment until they get on-the-job training.

Lebanon College's program is also remarkable in that it was up and running so quickly. Once Wenz knew area hospitals were interested, it took him only a few months to secure funding, equipment, space, and faculty.

Bruce Van Houten, a radiographic technician who has worked at DHMC and Mt. Ascutney Hospital, was hired as the program's director. There are two full-time faculty members, including Van Houten, and two part-timers. About 80 potential students expressed interest in the program, 30 completed the application process, 18 were accepted for the fall of 2002, and 16 enrolled. So far, only one has dropped out, leaving 15 students currently in the program.

"We couldn't have done this without DHMC," says Wenz. In addition to helping the program acquire the equipment, radiology staff at Dartmouth have provid-

ed advice to the program, and DHMC will be one of eight sites for students' clinical rotations.

The full-time program takes two years—including summers—to complete. It consists of three terms of classroom training alternating with three clinical rotations. Once students have completed the program, they are eligible to take the American Registry of Radiologic Technologists' certification exam.

Of course, Clinton hopes that some of the program's graduates, six of whom are DHMC employees, will become technologists in his department—at starting salaries of at least \$19.10 an hour. Tuition for the program is about \$8,500 a year.

For some students, the decision to become an x-ray tech is a real career change. "We have laid-off machine-shop workers, carpenters, office workers," says Wenz, "as well as individuals [already] working at some level of the medical profession."

Medical: "It's a wonderful program for those people interested in health care, but . . . unable to go to medical school or nursing school," says Clinton. What's more, he adds, "radiology is a growing profession."

The first students begin their clinical rotations in January—six at DHMC. And the next crop—about 18 students, estimates Wenz—will start in the fall of 2003. Clinton doesn't expect Lebanon College to be able to provide all the techs he'll need by 2004, but he's happy that the program is in place. "They are our salvation," he says.

LAURA STEPHENSON CARTER

The Russians are coming . . . to learn about digital libraries

When four Russian academics from the Republic of Karelia paid a visit to Dartmouth in October, they came to admire more than the fall foliage. Part of a partnership between DMS and Petrozavodsk State University and National Library, the two-week visit was aimed at helping the Karelians make effective use of the latest digital biomedical information technology.

Retired Dartmouth cardiologist Ellis Rolett, M.D., began working with the Karelians in 1990 after becoming aware of how Soviet libraries had suffered under Communist rule. In 1999, two Russian librarians visited DMS. And in 2000, several envoys from Dartmouth—including Rolett and William Garrity, director of DMS's biomedical libraries—visited Karelia to help librarians there learn how to use online resources.

This fall's exchange was focused on ways to encourage partnerships between libraries and health professionals.

"The most important experience in being here [at Dartmouth] was to see that clinical, educational, and research pieces merge together," says Irina Ivanova, director of the National Library of the Republic of Karelia. "It's very important for me to determine what place a library takes in supporting this structure, and now I see that it has a key position in the system here. We have learned how to choose

the right resources, because we don't have the money to buy all of them. Being here has helped us determine which resources are important."

Databases: More than 30 Dartmouth experts led a variety of seminars during the Karelians' stay. After testing computer programs themselves and listening to presentations on topics ranging from accessing Internet databases to organizing digital information, Ivanova and her colleagues were able to determine which resources could best be utilized in their setting.

Among the resources that they found most intriguing were several evidence-based clinical medicine systems and the various departmental Web sites that have been created especially for medical students.

"There are important things that the Web can do that books can't," notes Martha McDaniel,

M.D. The chair of DMS's anatomy department, she has worked to develop online resources for first-year anatomy students.

"The medical personnel in the group [of Karelians] could empathize with having difficulty in learning human anatomy," McDaniel explains. "In the Web site we have developed for our course, we have tried very hard to present only the anatomical concepts and facts that we think it's important for practicing physicians to grasp."

Site license: In addition, DMS has arranged for the Karelians to receive a complimentary site license for the OVID biomedical information system. Garrity, who negotiated the arrangement, explains that the package includes access to MEDLINE and pre-MEDLINE—powerful databases that can search the medical literature—as well as many digital journals and textbooks. It will



Retired cardiologist Ellis Rolett, right, and Bill Garrity, center, director of Dartmouth's biomedical libraries, helped a group of visiting academics from Russia make sense of the world of digital information. The Karelians pictured here are family physician Natalia Dorshakova, left, and Eugenia Sokolova, a language specialist.

also enable the Karelians to use a major English-language clinical information system.

Armed with this access to online resources and fresh ideas about digital information, the Karelians returned home to consolidate their knowledge. Dartmouth, meanwhile, has been refining a document delivery service through which the Karelians can request articles not available on OVID. The partnership's future plans include arranging additional exchanges between Dartmouth and Petrozavodsk librarians, developing a Petrozavodsk-Dartmouth Web site, and making OVID available to all users of the Karelian library system.

Attitudes: Although Rolett was pleased with the success of the latest exchange, he realizes that socioeconomic factors in Russia could play a role in how quickly progress occurs there. Not only is the Karelians' acquisition of digital resources dependent on the generosity of American vendors, but traditional Russian attitudes support hierarchical—rather than democratic—access to education.

"Nevertheless," Rolett concludes, "there appears to be growing awareness of the potential that information technology offers the university and health-care providers, and beginning evidence that the government in Karelia may be willing to apply some of its extremely limited resources to support information programs. It is our hope that the recently completed visit will further that trend."

KATRINA MITCHELL



The foundation for this cozy home, a Habitat for Humanity project, was excavated by the construction firm that's handling DHMC's expansion.

Habitat (and hope) for a local family

In New Hampshire, someone earning minimum wage (\$5.15 an hour) would need to work 115 hours a week to afford an average two-bedroom apartment. But thanks to a combined effort from Habitat for Humanity, DHMC, and McCarthy Construction—the contractor for the Medical Center's current expansion project as well as for its original Lebanon facility—a local low-income family has a new home in Lebanon.

"It's the greatest gift I've ever been given," says Terri Poitras, a single mother of two children. Technically, it wasn't a gift. Each Habitat homeowner provides 500 hours of sweat equity and assumes a no-interest mortgage. But payments, which average \$550, are much less—up to 50% lower—than such families paid for their previous, usually substandard, housing.

This particular Habitat project presented a problem, however, since the home's lot sat on solid bedrock—which made digging the foundation an expensive proposition. So Habitat board member Austin Kovacs approached Grant Guerri, McCarthy's project manager for the DHMC expansion. Guerri replied, "What can we do to help?" He explains that "McCarthy is a family-oriented company—wherever we work, we try to assist communities."

Ultimately, \$25,880 was raised from DHMC, McCarthy, and 29 local contractors to complete the excavation, the sewer and water lines, and blacktop work. Volunteers erected the home's modular frame, donated by a Connecticut company, in two days. Sherry Calkins, a DHMC employee, organized a lunch for the volunteers. Habitat is "a grass-roots organization," says Kovacs, so its "success depends on the support of local businesses, churches, . . . and on-site volunteers."

Frederick Nothnagel, vice president of facilities for Dartmouth-Hitchcock, is delighted by the "enthusiasm McCarthy has shown for making a positive contribution to the Upper Valley." It's clear, he says, that the construction firm "values community service as much as we do."

R.E.M.

Expansion project is on schedule to add 460,000 SF

"Project for Progress"—DHMC's \$224-million expansion and renovation project, undertaken to create new clinical and research space—is about 15% done and moving along on schedule.

By 2006, DHMC should have enough new clinical space to be able to hire more physicians—both specialists and primary-care providers—to keep up with the growing demand. Since the move to the Lebanon campus in 1991, outpatient visits have risen over 70% to more than 400,000 per year. Although the number of physicians has risen 63%, there are still not enough to keep up with demand—and it's been hard to hire more without space for them.

"Everybody at the Medical Center is acutely aware of our access issue—we see it as a major problem," says John Butterly, M.D., executive medical director. "We're all excited about the expansion project."

The constant activity and visible evidence of the construction are impossible to miss. The Rubin Building, housing the Norris Cotton Cancer Center, is four stories taller. Construction crews have also been excavating for other new buildings, pouring foundations, and erecting steel structures.

Some crews are already working inside the shells of the new buildings, constructing walls and stairways and installing wires and elevators. And underground,

crews are rerouting and installing plumbing and utilities.

When DHMC has full use of the new space, there will be an additional 160,000 square feet for outpatients; 110,000 square feet for surgical, diagnostic, and emergency services; and 90,000 square feet for a connector mall on the complex's east side.

Space: There will be more research space, too. The new floors on the Rubin Building—100,000 square feet—will be mostly for research; that part of the project is expected to be finished by the end of 2003. "Project for Progress" also includes a new hangar for DHMC's medical helicopter; a six-story, 540-space parking garage adjacent to the new outpatient building; and a new surface parking lot for employees—that's already in use.

LAURA STEPHENSON CARTER



Visible in the foreground is the foundation for DHMC's new 540-space parking garage, while the new floors on the Rubin Building can be seen in the rear.

New clinical chair is endowed in honor of surgeon Steve Plume

Only after cardiovascular surgeon Stephen Plume, M.D., had escorted Louise Avery to the lectern at his retirement party in September did he learn that she and her son, Allen, had endowed the Louise R. and Borden E. Avery Endowed Clinical Chair in his honor. While DMS has several dozen endowed chairs, and Mary Hitchcock Hospital got its first a few years ago, this was the Dartmouth-Hitchcock Clinic's first endowed chair.

"The gift is intended to help us understand and improve the way cardiac surgery is done and to improve the benefit that it achieves for people," explains Plume, former president of the Clinic. "Both [are] longstanding interests of the Averys."

Clinical faculty members of a medical school have always been hard-pressed to generate support for their nonclinical activities—teaching medical students and residents and doing research to advance the frontiers of care. Such activities are crucial to the future of medicine, but it can be difficult for busy clinicians to carve out time for teaching or writing grants—as well as for the institution to swallow the associated drop in clinical income. The funding from an endowed clinical chair takes some of that pressure off practitioners and, in turn, relieves a source of upward pressure on clinical fees.

William Nugent, M.D., the chief of cardiothoracic surgery at



Steve Plume (left) was surprised and pleased to have a new clinical chair endowed in his honor by Louise Avery (center), her late husband, and their son, Allen (right).

DHMC, will be the first person to hold the Avery-Plume chair. "What was beautiful about this opportunity," he says, "is that in addition to recognizing the generosity of the Avery family, they were kind enough to direct it in a way that honors Steve Plume, who has contributed significantly to this organization in a permanent way." Nugent envisions using the extra funding to sustain DHMC's visibility in health-care improvement, perhaps through an annual symposium on quality improvement.

Also, according to Nugent, "all the sections in the Clinic have pieces that are missing that could be reinforced if monies were available to make them whole." He cites as an example the need for lab facilities at the disposal of cardiothoracic surgery. And, he adds, it's becoming increasingly difficult to fill those voids with clinical dollars.

Deserving: Having a chair will also improve the Clinic's ability to recruit and retain top faculty, since it is considered a great honor to hold such a post. According to Plume, Nugent is highly deserving of being the first incumbent in this chair. "He has provided great leadership to the car-

diothoracic section for a decade or more. I can't think of a better person."

The funding of this chair is but the latest of many contributions to DHMC by Louise Avery, her late husband, and their son. Plume—who did two heart-valve replacements for Borden Avery—often used to chat with him in the corridors of DHMC, where Avery volunteered for years as a patient escort. Avery did so because he hoped to give other patients courage, explains Louise Avery. "Because he'd been through so much, he could visualize what was going through their heads. He liked to feel as though he was helping."

An article in the *Valley News* in September described Borden Avery as "one of the most successful hotel-owners in northern New England." Plume recalls him as "an unpretentious individual with a great sense of humor, always with a twinkle in his eye." Even toward the end of his life, says Plume, Borden Avery was focused as much on others as on his own problems. With the endowment of this clinical chair, his legacy of concern for others will live on.

KATHARINE FISHER BRITTON

High-tech tools come together in new Imaging Center

A reporter entering the high-tech realm of DHMC's new Imaging Center with tools as low-tech as a pen and notebook should be prepared for a little ribbing. After all, the interview subject—Justin Pearlman, M.D., M.E., Ph.D., the center's director—is accustomed to working at technology's cutting edge.

On this particular morning, Pearlman and some colleagues are studying MRIs of the heart on a computer screen. What's unusual is that the person in the MRI scanner is a volunteer who has swallowed an experimental coil attached to a tube. The coil is being tested to see if it will boost the radio signal from the scanner and produce enhanced views of the coronary arteries. In current practice, the coils used to apply the radio pulses during an MRI are attached to the outside of the patient's body. But current practice is old hat here.

Leap: Pearlman was recruited from Harvard just over a year ago to lead the way in a venture that marks a dramatic leap in imaging capabilities at DHMC. He is the first director of the Dartmouth Advanced Imaging Center. Work is already ongoing under the center's aegis, and it is scheduled to move into new facilities in mid-2003.

Formed as a partnership between the Departments of Cardiology and Radiology, plus the Norris Cotton Cancer Center and Thayer School of Engineer-

MEDIA MENTIONS : DMS

Among the people and programs coming in for prominent media coverage in recent months was Dr. John Modlin, chair of pediatrics at DMS and head of a national panel on immunization policy—a group very involved in preparing for the possibility of bioterrorism. Modlin has discussed immunization issues everywhere from the *New York Times* to National Public Radio's *All Things Considered*. In a *People* magazine Q&A, for example, he said, "We're in a much better position to respond to smallpox than we were a couple of months ago." (See page 10 for more on this topic.)

The *Wall Street Journal* carried a report recently on "a study that shows promise in the fight against cervical cancer. If the final round of trials goes as expected, the vaccine could receive federal approval for marketing in several years," said Diane Harper, the director of the colposcopy clinic at Dartmouth-Hitchcock Medical Center. "We are very, very excited," Harper said. "I think cervical cancer can go the way of smallpox."

A pair of young DHMC patients appeared recently on both *Good Morning America* (GMA) and the *Oprah Winfrey Show*. Harrison Colegrove, 11, and his sister Gracie, 9, had been confined to wheelchairs for several years. "Doctor after doctor saw the Colegrovess," reported GMA, "but none had a name for the disease. . . . After five years of searching, the family would discover the sort of medical miracle you find only in movies." The Colegrovess also shared their story on *Oprah*. There, Winfrey explained that "their ordeal finally came to an

end when the family met Dr. James Filiano of Dartmouth-Hitchcock Medical Center. [He] believed the children were suffering from something called dopa-responsive dystonia." Happily, the rare disease is treatable with medication, and the Colegrove children now do karate and gymnastics.



A Dartmouth neurosurgeon was quoted on both coasts in recent months. The *New York Times*, reporting on a *Lancet* study of cerebral aneurysms, wrote: "Some American neurosurgeons are unhappy with aspects of the study. Dr. Robert Harbaugh, director of cerebrovascular surgery at Dartmouth-Hitchcock Medical Center, agreed that the seven-percentage-point difference in good outcomes af-



ter one year was significant, but he said he wanted to see longer studies." And the *Los Angeles Times* turned to Harbaugh for commentary on a study showing no support for allegations that roller coasters cause brain injury. "'It's more likely that these things happen by chance and that the roller coaster isn't causing the problem,' said Robert Harbaugh, a neurosurgeon at Dartmouth."

A few days before Thanksgiving, the *New York Times* editorialized on the fact that "surgery to treat severe obesity is expanding at a rapid rate." The paper said "an analysis by researchers at Dartmouth Medical School found that the gastric bypass operation could increase life expectancy by two to three years on average" but rueled "the failure of medical science to find a less drastic approach to the nation's bulging weight problem."

"If cancer is an iceberg, a detectable tumor is just the tip, says Michael Sporn, a cancer researcher at Dartmouth Medical School": So read the opening sentence of a feature in *U.S. News & World Report* on a field called chemo-prevention, a term that Sporn coined. "Ever since the government-sponsored war on cancer began in the 1970s," the article went on, "doctors have focused on treating those tips. But now, says Sporn, 'the goal is to melt the iceberg before it surfaces.'" (See page 6 for other recent news about Sporn.)

Scientific American, calling arsenic a "mysterious carcinogen," noted that "although toxicologists aren't sure how [it] attacks the body's cells, a new study by scientists at Dartmouth Medical School

& D H M C I N T H E N E W S

indicates that the substance disrupts the activity of hormones called glucocorticoids, which help to regulate blood sugar and suppress tumors."

The *New York Times* turned to a Dartmouth expert in outcomes research for commentary on a study showing lumpectomy to be as effective as radical mastectomy in the treatment of breast cancer. "I think this is great," said Dr. **H. Gilbert Welch** of Dartmouth Medical School. "This is Cadillac data, just what we want."

Another outcomes expert was quoted in connection with a study suggesting that men who undergo surgery for prostate cancer can reduce their chance of dying of that disease—but not their overall risk of dying. Reported the Associated Press: "What the study doesn't show is which patients would benefit most and least from the operation," said Dr. **John Wasson** of Dartmouth, who believes prostate cancer is an overtreated disease."

"A virtual volley of conflicting advice and studies" about health practices—such as "today's medical

bulletin: drink red wine; tomorrow's: don't drink red wine"—was the subject of a story in the *Miami Herald*. One key, says DMS's **Lisa Schwartz**, M.D., "is presenting scientific information in a way patients can understand. . . . You hear all these numbers

and you have no way of knowing are they big or small. We want to do a better job of giving people context for those numbers," says Schwartz."

When the FBI began investigating an unusually high rate of heart surgery at a hospital in Redding, Calif., the media—from the *New York Times* to NPR's *Morning Edition*—began beating a path to the door of a Dartmouth expert in health-care utilization. Wrote the *San Francisco Chronicle*, for example: "We've been aware of Redding for a number of years," said Dr. **John Wennberg**, whose research at Dartmouth looks at wide regional differences in the use of costly medical services."

The complexities of ensuring the safety of donated blood was the subject of an article in the *St. Petersburg Times*. "Blood banks would like to test each sample individually. . . . But experts say they lack the technology to do it, with some 14 million units of blood processed each year in the U.S. 'That is the best way of testing, but it's just not feasible at this time,' said Dr. **James AuBuchon**, medical director of the transfusion service at Dartmouth.

'It's going to take a few more steps, analytical equipment steps, before we can implement single-donor testing routinely.'

An increase in the number of college students nationwide who take prescription psychoactive drugs was the subject of a recent *Boston Globe* story. "'The Internet makes a huge difference,' said

Dr. **Mark Reed**, one of Dartmouth's two full-time [student health service] psychiatrists. 'When they come into my office, they tell me they've been studying the signs of obsessive-compulsive disorder, and they say: 'I need cognitive behavior therapy, and I need an SSRI [selective serotonin reuptake inhibitor, an antidepressant].' My jaw drops to the floor, and I say, 'Okay, humor me. Can you take me through the evaluation?'

The lack of any scientific underpinning for the ubiquitous advice to drink eight 8-ounce glasses of water a day has made the news in a big way ever since the release in mid-summer of a review article for the *American Journal of Physiology* by Dartmouth faculty member **Heinz Valtin**, M.D. Now Valtin has really made the big-time press—the funny pages.

The nationally syndicated comic strip "Sylvia" recently depicted a TV host proclaiming, "Dr. Valtin, a kidney specialist, says that drinking eight glasses of water a day leads not to better health but more trips to the bathroom." (See page 10 of the Fall 2002 issue for details about his article.)

ing, the center brings diverse technologies and talents together in one place. Not only will the consolidation of resources promote multidisciplinary research, but expanded diagnostic capabilities will benefit the treatment of a range of conditions, from cancer to heart disease.

By summer, the Imaging Center will be housed in a 12,000-square-foot facility located one level below Radiology. Among the technologies that will be available are advanced cardiac MRI, real-time or "infinite slice" computed tomography (CT), 3D ultrasound, and electron paramagnetic resonance (EPR).

Tissues: "Adding microimaging methods that will enable us to get information at a molecular level is a high priority," Pearlman says. EPR, for instance, measures oxygen levels in tissues and provides other molecular information. A process called proton MRI can also detect molecular and microvascular changes. Procedures like this make it possible to detect a tumor early on, when cutting off its blood supply may be sufficient to stop the cancer.

Similarly, 3D ultrasound—which uses powerful software to combine a series of two-dimensional scans into three-dimensional images—is useful in early detection of both cancerous and benign tumors of the prostate, colon, rectum, and breast. This type of ultrasound also boosts doctors' ability to assess fetal development and to visualize blood flow in various organs.

For Pearlman, who holds a master's in biomedical engineering and a Ph.D. in applied sci-



ences (both from the University of Virginia) plus an M.D. (from the University of Connecticut), the imaging advances of the past 20 years are thrilling. In 1977, when the first MRI was performed on a human, it took nearly five hours to produce one image. Today, it takes less than a second. As a clinician (he has appointments in both cardiology and radiology), Pearlman is most interested in the advances in patient care made possible by such innovations. The goal, he says, is to develop accurate, sensitive, noninvasive diagnostic techniques as well as minimally invasive treatment options.

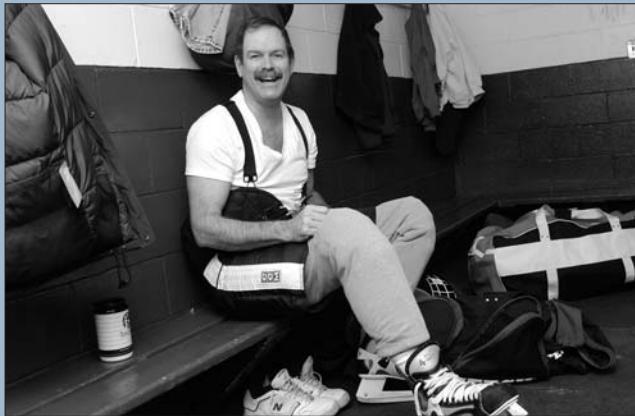
The Imaging Center has received several major grants, including \$1.4 million from the National Institutes of Health and \$1 million from the Flight Attendant Medical Research Institute, plus support from General Electric and the Doris Duke Charitable Foundation.

Pearlman sees some immediate benefits for the community when the new facility opens. One of its first initiatives will be screening for people who live with secondhand smoke—a risk factor for cancer and heart disease nearly equal to smoking.

He has ambitious long-term plans, too. Among other collaborative ventures, he hopes to sponsor a training program in advanced imaging for both doctors and engineers. The better those who practice medicine and those who develop new technologies understand each other, Pearlman believes, the more patients will ultimately benefit.

CATHERINE TUDISH

FLYING SQUIRREL GRAPHICS



Carter Dodge, who at work wears scrubs, suits up here for the ice.

These blades are on skates, not scalpels

It's cold inside Hanover's Campion Rink at 5:00 a.m. On the ice is a mismatched group of players skating, with varying degrees of skill, after a puck that only occasionally gets near the net. This is "Gas Attack Hockey," named by the anesthesiologists who started the group. Well padded and wearing a random assortment of jerseys, the players are unrecognizable; only the odd ponytail indicates that this is a mixed-gender game.

In the locker room afterwards, as the pads come off ("Most players begin playing Gas Attack wearing a minimum of protection," according to the group's official rules, "and gradually add padding after an unprotected site has been abraded, cracked, imploded, or required costly surgical reconstruction"), recognizable figures emerge: anesthesiologist Carter Dodge, administrator Ronald Sliwinski, surgeon John Birkmeyer.

"The goal," says Dodge, "is to get some exercise, play hockey, and have fun." The group's recruitment strategy is to ask if new members of the department can skate. "Either forward or backward," Dodge says. "You don't have to do both."

Gas Attack Hockey has been going on for "at least 16 years," Dodge says. The Department of Medicine has a hockey group as well. "It's kind to aging bodies," Dodge says of hockey. "In basketball, people are always tearing Achilles tendons" or hurting their knees. Games are unscored, and there are no referees. Although Birkmeyer says that "the key to success is persistent dirty play," skaters are more apt to be injured by insults than by checking. (During the locker-room banter, one player is described as "an embarrassment to the Canadian race.") Moreover, adds Birkmeyer, "it's the one place surgeons can criticize anesthesiologists without them canceling our cases."

Privately, anesthesiologist Mary "The Slasher" Fillinger reflects that, all joking aside, the games provide a valuable bridge among players who at work can sometimes have conflicting perspectives. "It's a whole different way of knowing other doctors," she explains. "It's hard to be mad at a person you're having this much fun playing with." M.M.C.

Worthy of Note: Honors, awards, appointments, etc.

John Wennberg, M.D., director of Dartmouth's Center for the Evaluative Clinical Sciences, is one of the "100 Most Powerful People in Health Care" according to *Modern Healthcare Magazine*.

D. David Glass, M.D., chair of anesthesiology, is chairing the Ad Hoc Duty Hours Committee of the American Council on Graduate Medical Education.

Paul Batalden, M.D., a professor of pediatrics and of community and family medicine, received



the Alfred I. DuPont Award for Excellence in Children's Health Care. The award recognizes the development of innovative, safe, and high-quality systems of medical care.

Jack Cronenwett, M.D., a professor of surgery, is president of the Society for Vascular Surgery.

Paula Schnurr, Ph.D., a research professor of psychiatry, is president of the International Society for Traumatic Stress Studies.

Ann Barry Flood, Ph.D., a professor of community and family medicine, was named editor of *Health Services Research*.

Michael Sateia, M.D., a professor of psychiatry, was elected to the governing board of the American Academy of Sleep Medicine.

Frances Friedman, M.D., an assistant professor of medicine, received the Laureate Award from the New Hampshire chapter of

the American College of Physicians-American Society of Internal Medicine.

A cardiac surgery program at Concord, N.H., Hospital, developed by **Paul Uhlig**, M.D., an associate professor of surgery, in cooperation with DHMC, received the 2002 John M. Eisenberg Patient Safety Award.

The award recognizes individuals and organizations that have made major contributions to improving patient safety.

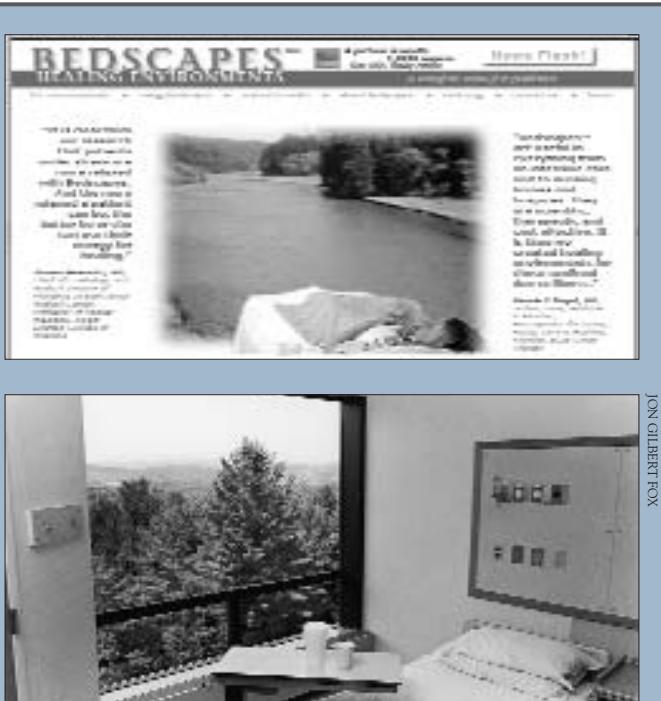
Donald St. Germain, M.D., a professor of medicine and of physiology, was recently elected a director of the American Thyroid Association.

Jerry Yeo, Ph.D., an associate professor of pathology and director of the clinical chemistry and endocrinology laboratories, was elected vice president of the American Board of Clinical Chemistry and

president of the North American Chinese Clinical Association.

Joseph Henderson, M.D., a professor of community and family medicine, received an award from the Electronic Multimedia Awards Foundation for an interactive program he developed to teach clinical genetics. (See page 5 for more on this project.)

Lionel Lewis, M.D., an associate professor of medicine and of pharmacology and toxicology, was named to the USMLE Step



At top is the Web site for the virtual version of hospital nature therapy, and at bottom is the real thing—the view from a DHMC room.

Nature therapy isn't virtual at DHMC

Think of a lazy day on a sandy beach or the serenity of a mountaintop meadow—just the thought is restorative. That concept is now being used to help hospitalized patients find relief from pain and anxiety. Over 50 hospitals across the country have hung “Bedscapes” in their patient rooms—four-foot photomurals of tropical beaches and mountain streams.

At DHMC, however, patients don’t need a “Bedscape”—they are fortunate to enjoy the real thing. Each patient tower on the north end of the Medical Center was built with 36 sides, so every patient room has a view of the outdoors—mostly pine-covered hillsides. But in urban hospitals and nursing homes, Bedscapes are increasingly popular, turning cubicle curtains into calming, healing environments.

Does the concept really work? Studies have shown that humans’ innate response to nature is to relax. This appears to be true with Bedscapes as well. At Johns Hopkins Hospital, researchers tested Bedscapes in a randomized controlled study of 80 patients undergoing flexible bronchoscopy; the patients in the Bedscapes group reported significantly less pain. Preliminary results from a similar study at Beth Israel Medical Center showed that patients exposed to Bedscapes had significantly lower levels of stress while awaiting cardiac catheterization.

Yosaf August, CEO of Bedscapes International, introduced his invention in 1996. But DHMC beat him to implementing the concept; its Lebanon facility—with real rather than virtual views of beautiful scenery—opened in 1991. M.C.W.

One Test Material Development Committee for Pharmacology and to the NBME Pharmacology Test Committee.

Robert Harbaugh, M.D., a professor of neurosurgery and of radiology, was appointed to the executive committee of the American Stroke Association.

Paul Gardent, M.B.A., executive vice president of Mary Hitchcock Hospital, was named to the board of directors of the Accreditation Council for Graduate Medical Education.

Bernard Arons, M.D., an adjunct professor of psychiatry, is senior science advisor to the director of the National Institute of Mental Health.

Donald Shumway, M.S.S., an adjunct professor of psychiatry, received the Wheelock-Nardi Advocacy Award. Formerly commissioner of health and human services for New Hampshire, he is now president of the Crotched Mountain Foundation.

A digital image by **Patrick Saine**, M.Ed., an instructor of ophthalmology, was chosen for inclusion in an international juried exhibit, “Images from Science,” sponsored by the School of Photographic Arts and Sciences at the Rochester Institute of Technology. (See the feature on page 40 for more of Saine’s work.)

David Holznagel, a third-year medical student, was a finalist in a photography contest sponsored by the Association of American Medical Colleges. The image he entered, of costumed medical students visiting hospitalized children on Halloween, was included in a photo-essay of Holznagel’s work in the Fall 2000

FROM OUR PAGES

issue of DARTMOUTH MEDICINE.

Three graduate students in pharmacology and toxicology recently received awards. The Society of Toxicology's Metals Specialty Award went to **Nicole Soucy**. **Kathryn Chatfield** received a Scholar-in-Training Award from the American Association for Cancer Research. And **Kimberley O'Hara** received the Mechanisms Section Award of the Society of Toxicology, as well as a Young Investigator Award from the Oxygen Society.

DHMC was recently deemed a good place to work by two magazines in the state. *New Hampshire Magazine* included the Medical Center on its list of the state's top 10 family-friendly companies, and DHMC was the first hospital ever

included in the annual "Best Places to Work" issue published by *Business NH Magazine*.

Jennifer Plant, a fourth-year medical student, is a Rock Sleyster Scholar of the American Medical Association Foundation. The award goes to students entering psychiatry, and only 20 are presented nationwide.

Kim Sleeper, a pediatric oncology nurse, was presented with the Lauren J. Holm Excellence in Nursing Award at the Northeast Regional Oncology Nursing Conference.

The Department of Veterans Affairs awarded the White River Junction, Vt., VA Medical Center a 2002 Robert W. Carey Quality Achievement Award.



In this section, we highlight visual and textual tidbits from past issues of the magazine. These messages from yesteryear remind us about how fast some things in medicine (and life) change, as well as about some timeless truths.

From the Spring 1979 issue

"In the matter of educating women for the practice of medicine, Dartmouth . . . missed a golden first opportunity in the year 1852, when it rejected the application of Emily Blackwell." So wrote longtime DMS faculty member Robert Nye, M.D., in a feature about women in medicine at Dartmouth.

"The following entry appears in the faculty minutes for August 10," continued Nye. "'At a Faculty Meeting this day . . . the request of Miss Emily Blackwell of Cincinnati to be admitted to the present course of lectures being under consideration, it was voted that in the opinion of this Faculty we should not be justified by the medical profession of New England in complying with her request, and that a copy of this vote be communicated to Miss B. by the Secretary (Done).'

"It was Dartmouth's loss. Emily was the younger sister of Elizabeth Blackwell, who had graduated three years earlier from Geneva Medical College, New York, the first woman to earn a medical degree in the United States or Britain, or perhaps anywhere in the western world."

From the Fall 1977 issue

The magazine has also recorded some more lighthearted historical moments, such as this one: "Dr. Maurice Costin '40 of Framingham, Mass., sent in this picture [reproduced below] of Dr. William Bodwell '09. The two men met when Dr. Costin set up his practice in Framingham in 1948, and over the years they exchanged stories of their days in Hanover."

"Dr. Costin wrote that 'Dr. Bodwell informed me that he used to have several jobs while working his way through Dart-

mouth. They included bartering, bartending, washing dishes, waiting tables, helping Dr. Gilman Frost deliver calves on his farm, and taking care of Professor Emory's horses. He informed me that

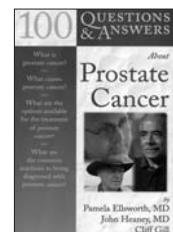


William Bodwell, DMS 1909, on Main Street.

the photograph of the horse and sleigh, with him driving, was taken in March 1909. As you can see, it was in front of College Hall [now Collis], and I suspect the horse and sleigh belonged to Professor Emory." Bodwell died in 1969 and Costin in 1982.

New on the bookshelf: Recent releases by DMS faculty authors

100 Questions and Answers about Prostate Cancer. By Pamela Ellsworth, M.D.; John Heaney, M.D., a professor of urology at DMS; and Cliff Gill; Jones and Bartlett Publishers; 2003. This guide offers practical answers to



questions about prostate cancer treatment options, post-treatment quality of life, and sources of support. It includes a step-by-step discussion of the diagnosis and treatment of prostate cancer, and commentary from a prostate cancer survivor offers real-life understanding of what these steps mean.

A Life in Medicine: A Literary Anthology. By Robert Coles, M.D., et al., including Joseph O'Donnell, M.D., a professor of medicine at DMS; New Press; 2002. This anthology includes stories, essays, and poems that touch on

the moral and ethical lives of physicians and nurses. Its contributors—including some well-known writers plus doctors, nurses, other health-care practitioners, patients, and a couple of Dartmouth medical students—address listening, responding, and the importance of caring in medicine. ■

