DMS researcher documents incidence of needless Paps

Ten million women who have had hysterectomies are tested each year, needlessly, for cervical cancer. In most hysterectomies, the cervix as well as the uterus is surgically removed. "It doesn't make sense to screen a woman for cancer in an organ that she doesn't have," explains Dr. Brenda Sirovich, an assistant professor of medicine at DMS.

The test for cervical cancer is the Pap smear, in which a few cells from the cervix are scraped off and examined under a microscope. Since the test was invented in the 1940s, the incidence of cervical cancer has greatly declined. Yet for a woman without a cervix, the Pap has no value, as guidelines issued in 1996 by the U.S. Preventive Services Task Force pointed out.

Logic: Yet despite their intuitive logic, those guidelines have been ignored. Sirovich and Dr. H. Gilbert Welch, a professor of medicine at DMS, analyzed data on 187,670 women who'd had hysterectomies. Their source was the Behavioral Risk Factor Surveillance System, an annual telephone survey conducted by the Centers for Disease Control and Prevention. "We looked at Pap smear screening before and after the 1996 guidelines came out," Sirovich says. "The rate didn't change. It was absolutely flat."

She and Welch estimate that nearly half of the 21 million U.S. women who have had hysterectomies continue to get unnecessary Pap tests. If a hysterectomy was done because of cancer, Sirovich adds, having a regular Pap is still a good idea. But most hysterectomies are not cancer related. For these women, testing cells from the vagina, in lieu of the absent cervix, tells nothing. Vaginal cancer is very rare, and the Pap smear was not designed to find it.

Practice: "The interesting question to ask," Sirovich says, "is how did this practice evolve? I don't know. In medical school, we were taught to do vaginal smears on women who had had hysterectomies. It didn't make sense to me, but when you're in training a lot of things don't make sense."

Sirovich and Welch, who are part of the Outcomes Group at the White River Junction, Vt., VA Medical Center, published their findings in the *Journal of the American Medical Association*. Afterwards, Sirovich was interviewed by more than 20 news outlets, including the *New York Times* and the Associated Press. She also appeared on NBC's *Today Show*, National Public Radio, and CNN.

News: "We can be a little optimistic," she says, "that the publicity will make a difference, that the awareness of both doctors and women was raised." The feedback she's received suggests that "both parties think the other one is not willing to give up this practice that has become so universally accepted." Doctors, she explains, feel "it's hard to do less. Once people have come to accept an intervention, it's hard to take it away. And screening

FACTS & FIGURES

By air and by land

DHART celebrates its 10th birthday

CORUM PHOTOGRAPHY

It used to be called the Dartmouth-Hitchcock *Air* Response Team. It's still northern New England's only medical flight service, but now DHART stands for Dartmouth-Hitchcock *Advanced* Response Team and two high-tech ground vehicles augment the service's two helicopters. Here's a numerical look at DHART's impact ("calls" are requests for service; weather or simultaneous calls can keep them from being completed):

7/1/1994
Date that DHART service began

7
Minutes after the service started that the first call came in

473 / 320
Number of flight calls / completed missions in 1994-95

1,709 / 851
Number of flight calls / completed missions in 2003-04

820 / 679
Number of ground calls / completed missions in 2003-04

20
Number of DHART staff members in 1994

42
Number of DHART staff members in 2004

12,885 / 8,087
Total calls / completed missions since 1994

JON GILBERT FOX

According to DMS's Brenda Sirovich, some 10 million women a year who don't need a Pap test get one anyway.

for cancer is apple pie. It has this intrinsic value. Doctors aren't willing to risk losing a patient's trust by stopping it."

Another factor, says Sirovich, may be "report cards" by health-maintenance organizations. The Pap is one measure of high-quality care for women. "To the HMO," says Sirovich, "the best doctors are the ones with the highest number of Pap tests." But report card databases often don't note hysterectomies.

Finally, doctors worry that without the pull of a yearly Pap, women may not come in for a checkup. "It's something to keep in mind," Sirovich concedes, "but if it's worthwhile to see your doctor every year, it's not worthwhile to spend all your time getting an unnecessary Pap smear and discussing it. There are a lot of patient-driven issues that could benefit from having more time addressed to them.

Time: "We are not advocating stopping Pap smear screening for women who have a cervix," she emphasizes. "We just want to make the practice more rational. As doctors, we want to use our resources better—and our main resource is time."

Nancy Marie Brown

New students bring wealth of experiences as they begin at DMS

With interests encompassing alpine skiing, hiking, rock-climbing, swimming, logging, and kayaking, Dartmouth's 84 first-year M.D. students would surely do well in an episode of *Survivor*.

What they've survived, however, is a rigorous medical school application process. The new students, who were selected from about 5,000 applicants, have a mean undergraduate grade point average of 3.7 in nonscience courses and 3.6 in the sciences. They represent 60 undergraduate institutions and 31 states, and 13 were born outside the U.S.; 58% are women, 42% are men, and over 25% are of color or international students.

But the numbers tell only part of the story. The brief autobiographies the '08s wrote to introduce themselves to each other reveal a wide range of experiences. The class includes a rural engineer who worked in the Himalayas, an oceanography instructor, a military police officer who served in Bosnia and Croatia, a registered Maine guide, and 11 EMTs. One student was a Peace Corps volunteer in Nepal and another was the in-country coordinator of NASA's Large Scale Biosphere-Atmosphere Experiment in Amazonia.

Many, like Laura Shiveley, have research experience, too. She majored in biology at the University of California at Davis and after her graduation was "a postgraduate researcher . . . investigating the effects of *Ginkgo biloba* in preventing or delaying the onset of dementia in elderly participants."

Others wrote humorously of their roundabout journeys to DMS. Irvin Sanchez was born in rural Puerto Rico, and, "after a three-year stop at Fort Buchanan in San Juan, where I learned to speak English, I moved with my mother and brother to Dallas, where I ran into the first cowboy store I could find—yee-haw!" Sanchez later moved to the Atlanta suburb of Peachtree City, "land of golf carts and Delta pilots," and earned a degree in microbiology from the University of Georgia. "My personal interest for learning about new cultures, people, and ways of life," he said, "is matched only by my love for all things baked, especially bread—Atkins Schmatkins."

Rigors: For some students, the path to medical school involved rigors far beyond those of the application process. Deogratias Niyizonkiza, who grew up in Burundi and started medical school there, wrote, "I was doing a clinical clerkship in a hospital with 750 beds, where 70% of the patients were infected with HIV/AIDS, TB, and other opportunistic infections." But Niyizonkiza had to flee Burundi during a period of political genocide and made his way to the U.S., "homeless, speaking not a word of English," but still hoping to complete medical school. After volunteering at a hospice and a nursing home, learning English, and working to support the rest of his family while they were still in refugee camps, he eventually earned a bachelor's degree from Columbia University.

Four of the '08s are enrolled in the M.D.-Ph.D. program—two in microbiology and two in pharmacology-toxicology.

Other programs: The doctoral programs in the biomedical sciences welcomed 45 other new candidates—35 in microbiology, six in pharmacology and toxicology, and four in physiology.

And 61 new students entered the programs of DMS's Center for the Evaluative Clinical Sciences—18 M.S. students, 40 M.P.H. students, and three Ph.D. candidates.

Yet regardless of which program they are entering, the new students, like Jessica Walls, seem to be enthusiastic about being at DMS. "My combined experiences," she wrote, "leave me inspired and excited for the wonderful years that lie ahead."

Matthew C. Wiencke

Below, team-building exercises like this are part of the orientation-week activities for the first-year M.D. students.

MEDORA HEBERT

Study of innovative breast-imaging methods gathers benchmarks

Three out of four women who undergo a breast biopsy turn out not to have breast cancer. But one out of four asymptomatic breast cancers is not detected by mammography. Although startling, these are not new findings. They are, however, the impetus behind growing national and international research that's aimed at finding more accurate methods to detect and diagnose breast cancer.

"Unfortunately, what often gets quoted to the public is that mammography is 90% sensitive and we can find a cancer that is the size of a head of a pin, which is true in certain people," says radiologist Steven Poplack, M.D., who is codirector of breast imaging/mammography at DHMC. But, he adds, "that's not the whole story. . . . [Mammography] does have downsides, and it has room for improvement."

New types: For the past five years, he and Keith Paulsen, Ph.D., a professor of engineering, have been examining three new types of spectroscopic breast imaging—near-infrared (NIR), electrical impedance (EI), and microwave imaging (MI). Their most recent paper, of which Paulsen was the principal author, appeared in the May 2004 issue of *Radiology*.

Poplack and Paulsen's team collected data for each imaging technique from 23 women who had no clinical or mammographic findings of breast cancer. The first of its kind, the study now gives the investigators essential data on tissue characteristics in non-cancerous breasts of varying age and composition, thereby providing baseline information for future studies of these techniques.

The researchers hope that these new techniques will "improve characterization of breast disease," says Poplack. "If someone has a lump or a mammographic abnormality, [the hope is that] we could say that based on these alternative exams there's no chance there would be breast cancer here and therefore it does not need to have a biopsy." And beyond the prospects for better, more accurate detection of cancer is the opportunity to learn more in general about breast disease, breast structure, and breast function.

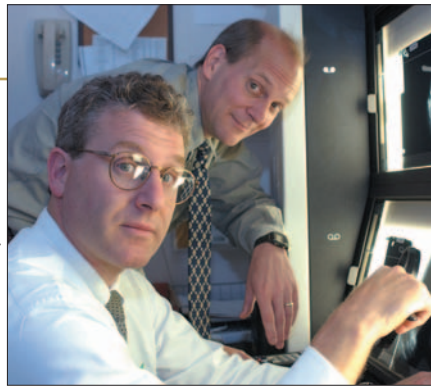
Unlike mammography, NIR, EI, and MI do not involve ionizing radiation—which in theory may harm the breast, though no studies have shown this conclusively. (A fourth method, magnetic resonance elastography, is also being explored by the research team but was not included in this study.)

"We don't really know if radiation at a very low level . . . truly causes cancer in the breast," explains Poplack. "We think that it might, and I should add that the risk-benefit of mammography is far in favor of doing mammography. But, having said that," he adds, "it would be nice to have an option where you didn't have to expose the breast to ionizing radiation."

By operating in other regions of the electromagnetic spectrum, these modalities detect differences in a tissue's electrical properties—its permittivity (its capacity to store an electrical charge) and conductivity—and in its light-scattering and -absorption properties. Certain tissue characteristics can indicate if cancer is present or not. For example, NIR spectroscopy, which measures light scattering and absorption, allows researchers to map the total hemoglobin concentration and saturation in a section of tissue. This is of "particular clinical interest," states the *Radiology* article, since high hemoglobin concentration is associated with angiogenesis in a tumor—the process by which it develops blood vessels to feed its voracious appetite.

Clinical trials: The initial clinical trials of NIR, EI, and MI appear promising. The research team has already encountered some subtle breast cancers that are "very conspicuous" when using one or more of the new modalities. But many larger trials will be needed to determine whether the techniques have significant value in breast cancer detection and diagnosis.

Paulsen notes that one of the challenges facing the group "is that the mammogram is done in a completely different geometry." Mammography requires compression of the breast, whereas the new procedures do not (and that's a plus, since the compression is very uncomfortable for many women). But that means researchers must calculate how regions of the breast correspond among the various procedures in order to judge the sensitivity of the modalities. "We can estimate that reasonably well," says Paulsen. "But in this next round, we want to do more accurate so-called registration between the alternative images and . . . conventional imaging." This will allow for refinement of the equipment before the next tests.



JOSEPH MELINGS

Radiologist Steve Poplack, left, and engineering professor Keith Paulsen, right, are collaborating to find more effective alternatives to mammography.

Poplack and Paulsen are also nearing completion on another study of 150 women. Half of the women have breast abnormalities and are slated for biopsies, while the other half, of corresponding ages and breast densities, are a control group. These results should indicate whether there is a difference in the way the techniques work in diseased and in healthy breasts.

The team hopes, says Poplack, in five years to be able to make "some pretty definite recommendations about which of these modalities, either alone or in combination, should be tried in a multi-institutional trial as the next big step."

For the time being, their most recent published study remains a "small step but an important step," adds Paulsen.

Jennifer Durgin

Doctors' Office Building contains more space and appealing features

After more than three years of planning, construction, and anticipation, the new DHMC Doctors' Office Building opened to the public in August.

The 160,000 square-foot addition, together with the new 90,000 square-foot East Mall, which connects the new facility to the old, boasts an abundance of natural light, stunning works of art, much-needed new space, and many functional details. For example, a sound-deadening structure known as a "cloud" floats above the service desks in the relocated DHMC Pharmacy to provide more privacy when patients order medication.

Larger: The new exam rooms are about 10 percent larger and incorporate accent walls painted in soothing colors instead of the standard institutional off-white. And lower counters at reception desks and enlarged waiting areas aim to accommodate wheelchair-bound patients.

The most appealing features lie on the sixth floor, the new home of the pediatric specialties and the Children's Hospital at Dartmouth (CHaD) Outpatient Center. Adorned with holograms, kaleidoscopes, and brightly colored glass fish dangling from the ceiling, the sixth floor feels more like an interactive children's museum than a pediatric clinic.

To the right is a photographic sampling of the new space.

Jennifer Durgin

ALL: MARK WASHBURN

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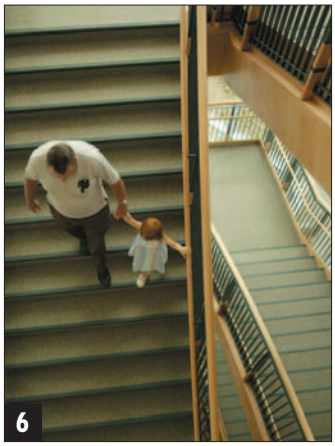
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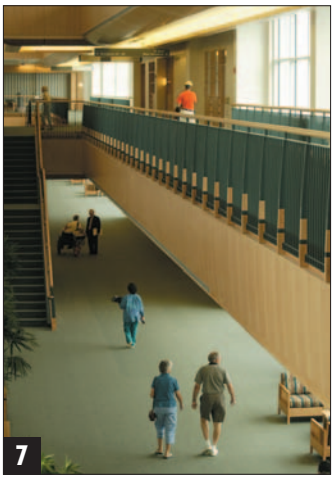
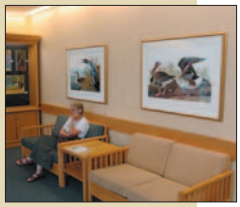


1 Patients who need assisted parking can drive right up to the entrance of the new Doctors' Office Building. **2** Inside, a dramatic three-story mobile by Seattle artist Koryn Rolstad softens the stairwell linking levels four, five, and six. **3** Six panels of translucent odds and ends inspire children in the CHaD Outpatient Center to play "I Spy," while **4** binoculars stimulate their curiosity in the world outside. **5 & 6** Expanses of windows, sage-green accents, and lightly stained wood trim help unite the new East Mall with the natural landscape surrounding DHMC. **7** A massive yet warm architectural space, the East Mall connects the new clinical offices with the existing outpatient clinics, the inpatient towers, the Cancer Center, and the still-under-renovation Emergency Department. The Norris Cotton Cancer Center, featuring a 100,000-square foot addition that opened in late 2003, includes **8** a redesigned Garden of Hope, providing a quiet place for healing and reflection. **9** The new parking garage, right next to the Doctors' Office Building, accommodates 540 vehicles and provides patients with convenient access to their appointments. Upon completion of the Emergency Department expansion in October, **10** the new East Entrance will offer a comfortable waiting area and an easily accessible pick-up and drop-off site for patients.

BIRD-WATCHING AT DHMC

When Laurance Rockefeller died at age 94 in July, he merited a full-page obituary in the *New York Times*. It described his illustrious family (including his late brother Nelson, a 1930 graduate of Dartmouth College and vice president under Gerald Ford). It noted Laurance's successful career in finance. And it detailed the philanthropic causes to which he was devoted—including conservation and ecology.



What the *Times* didn't mention was an especially creative gift that he made to DHMC upon the opening of its Lebanon campus in 1991: 47 framed Audubon prints of birds of North America. It wasn't the gift's size that set it apart—Rockefeller and his wife, Mary, gave large sums to any number of causes, including others at Dartmouth. It was its inventiveness. The new building's soaring spaces and wooded setting were a perfect foil for the striking images—a yellow-crowned heron, a white ibis, a barred eagle. And the gift grafted the Rockefellers' concern for nature and love for art onto their interest in the Upper Valley—where Mary Rockefeller had deep family roots on land that is now the Marsh-Billings-Rockefeller National Historic Park.

Thousands of patients, visitors, and staff walk past DHMC's Audubon prints every day, but probably few realize that they're the real thing—the work of noted naturalist John James Audubon himself. Or that they're there to be enjoyed by all thanks to the generosity of another noted nature lover. A.S.

LOTS OF BIKES AND BANANAS

Sometimes, a few numbers tell the whole story. Here are some from the 23rd Annual Prouty Bike Ride and Fitness Walk, a benefit for Dartmouth's Norris Cotton Cancer Center: 1,087 (people who biked or walked in the event); 820 (bikers); 306 (bikers who did the full 100-mile course); and 205 (volunteers).

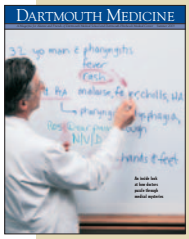
Then there's the donated food that fueled the effort: 1,000 (bananas); 750 (apples); 2,900 (chocolate and energy bars); 2,500 (bottles of water); and 3,050 (burgers and sandwiches). And of course there are the results: 52,250 (miles covered); 62 (teams entered in someone's memory or honor); and 101 (sponsors and donors). Not to mention 362,000 (dollars raised).

But the most important numbers are these: 132 (Norris Cotton researchers); 194 (clinical trials run under Cancer Center auspices); and 3,300 (new patient visits annually) A.S.

LAURELS FOR THE MAGAZINE

Dartmouth Medicine was the recent recipient of two national awards in the Association of American Medical Colleges (AAMC) Awards for Excellence Competition.

A feature by Associate Editor Laura Stephenson Carter titled "Puzzling Over Medical Mysteries" received the AAMC's highest writing award in the General Staff Writing category—the Robert G. Fenley Award of Excellence. An inside look at the Department of Medicine's weekly M&M, or morbidity and mortality conference, it was the cover article in the Summer 2003 issue. The AAMC judges called the story "a fascinating look at physicians working together to figure out a vexing case." This is the second award for the article, which won a Will Solimene Award for Excellence a few months ago from the New England chapter of the American Medical Writers Association.



In addition, the magazine as a whole received an Award of Distinction in the AAMC's External Audience Periodicals category. The judges commented that "it's interesting to see that such a variety of content is put together so professionally for the small cost." Both awards will be presented at the AAMC's annual meeting in Boston in November. A.S.

A DIFFERENT KIND OF CAMP

In early August, 15 New Hampshire high schoolers gave up a few precious summer days to attend the first annual Dartmouth Health Careers Camp. There were no s'mores or sing-a-longs, but the participants enjoyed the four-day camp all the same. It featured tours of DHMC and its research labs; talks by specialists in family medicine, epidemiology, radiology, and nursing; and a picnic where campers got a chance to mingle with Dartmouth medical students.

Donald Kollisch, M.D., an associate professor of community and family medicine, received a particularly warm response from the teens for his talk about rural health-care careers. "They were able to relate to that and see the promise in that," says second-year DMS student Stewart Mackie, who organized the camp under the auspices of the New Hampshire Area Health Education Center (AHEC). Increasing awareness about careers in health is one of AHEC's primary goals. Over the next year, AHEC officials will also help the campers work on their college applications. J.D.

"Student for a Day" program hopes to recruit rural physicians

When three undergraduates from New Hampshire state colleges were invited to be Dartmouth "Medical Students for a Day," they discovered that medical school was not as scary as they'd expected it would be. Now there's a good chance that they'll apply to medical school. And, as an added bonus, they may choose to practice medicine in rural areas that are desperately in need of physicians.

Studies have shown that students from state institutions are more likely to enter rural practice than students from private colleges, according to Donald Kollisch, M.D., and Susan Linsey, M.A., codirectors of DMS's Rural Health Scholars Program, which prepares medical students to be leaders in providing medical care to rural and underserved populations. They dreamed up the "Medical Student for a Day" initiative as a way to entice qualified students in the state college system to consider attending medical school. The participants came from Keene State, Plymouth State, and the University of New Hampshire (UNH).

Observe: Several DMS Rural Health Scholars—medical students who are interested in rural health care—hosted the visitors, who got to observe doctor-patient interactions at outpatient clinics, accompany physicians on rounds at DHMC, attend classes, and spend time with small groups of medical students.

"Suddenly medical school seemed a lot less intimidating," said Keene State student Allen Wellington. Less intimidating, perhaps, but very busy. Like real medical students, the visitors hurried from rounds at DHMC in Lebanon to classes on the DMS campus in Hanover and back to Lebanon for afternoon clinics. UNH student James Wylie shadowed an ophthalmologist, who let him look into patients' eyes and then explained what he was seeing. Steve Skinner of Plymouth State enjoyed going on rounds with the internal medicine team. "We all met in front of each patient's room and discussed the patient, then entered the room and checked up on the patient," he explained. Wellington attended rounds and clinics in psychiatry.

While seeing patients was a

FLYING SQUIRREL GRAPHICS

The DMS Rural Health Scholars at left showed a good time to the visiting "medical students for a day" at right.

new experience for the visitors, the classes didn't seem all that different from the undergraduate courses they're used to. "The depth that the class went into did not seem like it was hard," said Skinner, who attended a lecture on infectious diseases and sat in on some small problem-solving groups.

The Dartmouth students pointed out, however, that while each lecture isn't that difficult to comprehend, there is a lot more material to learn in medical school than in college. "You have to find a way to keep it all in your head," Rural Scholar Christine Castro advised during a debriefing session at the end of the day.

Balance: But most of all, the visitors were impressed with how friendly the DMS students were and how they seem able to balance work with play. "There was clearly a great deal of camaraderie among students," said Wellington. "They were tossing Frisbees, playing wall ball, and shooting hoops. My conception of medical school life was one of all business and no play, but here were students taking time away from the library and the laboratory to enjoy a beautiful day with friends."

DMS student Castro agreed, saying the premeds seemed "surprised about how active med students are outside the classroom with things like volunteering and outdoor activities."

Kollisch and Linsey plan to host Medical Students for a Day several times during the coming academic year.

Laura Stephenson Carter

Cyber noms de plume reveal a sense of humor

For better or for worse, e-mail is the modus operandi of communication these days. But that doesn't mean electronic correspondence has to be void of personality. Consider the e-mail aliases that the following DMS faculty have chosen for communicating within the Dartmouth e-mail network:

Happy Hal: Allergist Harold Friedman, M.D., acquired his nickname during his residency at the University of Michigan, where he was a self-professed "charter member of the 'Walking Depression Club.'" Today, Friedman, an associate professor emeritus of medicine, admits to cracking the occasional smile.

EoE, Q: "'EoE' stands for 'Expert on Everything,'" says Timothy Quill, M.D., a professor of anesthesiology, "a title conferred by my wife. I think she was being sarcastic, but I sort of liked the implication anyway." Quill also goes by "Q," after the James Bond character Q—the ultimate gadget guy.

Swimbikeraptor: The mantra for triathletes is swim-bike-run. Though a devoted triathlete, Anna Adachi-Mejia, Ph.D., a research coordinator in pediatrics, would rather bike than run, so she's adjusted the usual slogan. "The word raptor makes me think of adventurous high-flying energy," she says. Her mountain bike, Velociraptor, provided the inspiration.

SkyNMR: Jeffrey Dunn, Ph.D., an associate professor of radiology, doesn't like "living as a mole in a dark tunnel," a reference to the fact that many radiology facilities are underground because of the shielding they require. But Dunn managed to get DHMC's nuclear magnetic resonance (NMR) equipment located on the seventh floor of Vail. "The system is sited higher off the ground than any other that I know of," he says. "It's closer to the sky, so we called it 'SkyNMR.'"

Massimiliano: In an attempt to escape a "chronically low" self-esteem and the burden of a "short, unusual, and perhaps even somewhat odd name," Roy Fava, Ph.D., a research associate professor of medicine, created an alter ego, Massimiliano. The name was borrowed from a concert pianist in Ravello, Italy. "But it doesn't seem to have changed a thing!" laments Fava.

Yet whether they're inspired by irony, innovation, or an alter ego, these and other cyber noms de plume suggest that a sense of humor is alive and well at DMS and DHMC.

Jennifer "Junipertrails" Durgin

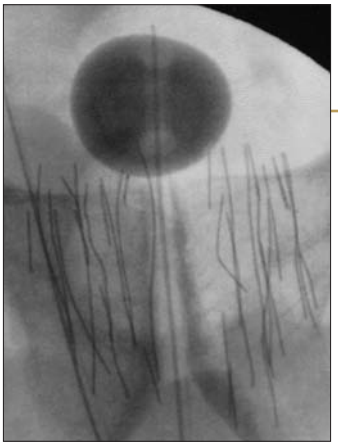
Palladium coils show promise in treating cancer of the prostate

Prostate cancer, like many cancers, can be treated with surgery, chemotherapy, radiation, or various combinations thereof. The implantation of "seeds"—small radioactive particles—into prostate tumors is one common and often effective treatment.

Twist: But a new twist—quite literally—improves on the concept of delivering radiation internally by using a coil instead of seeds. It targets the radioactivity more precisely and thus delivers more to the tumor and less to surrounding tissues. The device was developed with significant input from Dartmouth investigators, and DHMC patients were the first anywhere to receive the new coils.

The implantation of conventional seeds involves placing radioactive palladium seeds in a hollow hypodermic needle. Under local or spinal anesthesia, the needle is inserted in the perineal area, the space between the anus and the scrotum, and positioned as carefully as possible using transrectal ultrasound and fluoroscopy visualization. Then the seeds are "planted" in the target area. Scans are taken both before and after implantation to confirm that the seeds have been correctly placed.

This internal approach to delivering radiation is called brachytherapy; the radiation is delivered continuously, over a prolonged period of time, in close proximity to the target tis-



This fluoroscopic image shows a prostate implanted with palladium microcoils (the fine gray lines)—a brand new technology developed at Dartmouth.

sue. External radiation, by contrast, is delivered in short bursts, at much higher doses, daily over a period of several weeks.

In brachytherapy, however, it is hard to position the radioactive source to both maximize radiation to the tumor and minimize the exposure of adjacent normal tissue. And even with the best positioning techniques, there is always some uncertainty about the precise placement of the seeds; for example, the procedure results in some swelling of the prostate gland, which can change the geometry of the seeds relative to the tumor. And even if the seeds are placed precisely in the beginning, they have a tendency to migrate within the prostate tissue over time. Still, there is a far smaller risk of damage to the urethra, rectum, and bladder with brachytherapy than with external radiation.

So a Boston medical-device company called RadioMed Corporation recently decided to see if there was a better internal option than seeds. The firm turned to DMS to help it develop the concept. From an array of possible shapes—many of them tested experimentally by DMS faculty members Jack Hoopes, D.V.M., Ph.D., and David Gladstone, Sc.D.—RadioMed finally settled on a coil made of palladium.

The device looks like a very fine wire but is actually a microcoil. According to Hoopes, "Coils had two potential advantages over seeds: greater stability after placement in the tissues and improved dosimetry from the long strand versus that of a small sphere."

Testing: First, extensive testing for safety was done in animal models. Hoopes says that dogs suffering from enlargement of the prostate were chosen. "Purebred beagles have a prostate much like humans," he says.

The human first patient received an implanted coil in May 2004, and four of the procedures have been done since then. DHMC is still the only institution in the world using the new microcoils. The coils' availability, however, limits the number of patients who can receive them for the time being, for they must be produced in an experimental reactor in Belgium. RadioMed has plans to build a reactor in the United States, but that solution is several years away.

Future: Also in the future is testing of the coils with other cancers; as is the case with seeds, it is likely that palladium coils can be used to treat tumors in organs other than the prostate. When that happens, DHMC is ideally positioned to carry forward both the experimental and the clinical evaluations of these new applications.

Roger P. Smith, Ph.D.

Two DMS researchers establish and endorse drug information box

"The clams were the only ones that benefited from my arthritis," says the clam digger in a Vioxx advertisement.

The first page of the magazine ad is a splash of color. The flip side, however, is a sea of black-and-white text, known as the "brief summary," detailing the side effects of the drug (the brand-name version of rofecoxib). Even if average consumers read and understood this summary, they would still not gain a realistic sense of how well the drug works, according to Drs. Lisa Schwartz and Steven Woloshin. They are both DMS associate professors of medicine based at the VA Medical Center in White River Junction, Vt.

"[Direct-to-consumer drug advertisements] talk about benefits in these vague ways, but it's rare that you'll find data," explains Schwartz. "If you do find data, it's rare that it's in a balanced, understandable format. How can you decide whether it's worth exposing yourself to harms, if you don't know what you are getting?"

For the past few years, the husband-and-wife research team has been urging the FDA to ask pharmaceutical companies to include efficacy data—information about a drug's benefits, not just its side effects—in all printed direct-to-consumer ads. (See the Spring 2002 issue of Dartmouth Medicine for details of their earlier study on the subject.) While the FDA expressed strong interest in Schwartz and Woloshin's proposal, the agency wanted to know if patients could understand and make use of efficacy data.

Box: To answer the FDA's inquiries, Schwartz and Woloshin collaborated with Dr. H. Gilbert Welch, a DMS professor of medicine, to adapt three real-life advertisements for the drugs Vioxx, Pravachol, and Plavix. They changed the names of the drugs and created two versions of each ad—one with a benefit box and one without it. (See below for the pseudonymic Vioxx ad and information box.)

The efficacy data for each information box was gleaned from the randomized trials conducted to gain FDA approval of the drugs. After viewing each version, participants were asked to rate the effectiveness of the drug; they were also asked how useful and understandable they found the benefit box. In addition, participants' ability to understand the facts in the box was evaluated with a test.

The results were dramatic—

93% of respondents preferred the benefit box to the "brief summary," and 95% to 97% answered the test questions accurately. But perhaps the most intriguing finding was that the box changed participants' perceptions of how well a drug works.

Lower: "Perceptions of drug effectiveness were much lower for ads that incorporated the benefit box than for ads that did not," wrote Schwartz and Woloshin in their article, published as a Web exclusive by the journal *Health Affairs*. For example, the percentage of participants rating Vioxx as "extremely or very effective" dropped from 65% to 28% after they saw the benefit-box version of the ad. "The presence of the benefit box also caused many more respondents to correctly rate the effectiveness of [Vioxx] as being 'about the same' as that of ibuprofen," the authors continued.

But Schwartz and Woloshin noted that participants failed to understand the significance of certain data. For example, when study respondents looked at the 3% mortality rate in people taking Pravachol, a cholesterol-lowering drug, and the 4% mortality rate in people taking a placebo, they underrated that one-percentage-point difference, not recognizing that the drug actually reduced deaths by 25%.

"The paper by Woloshin and colleagues makes some intriguing suggestions," wrote Pat Kelly, a vice president of Pfizer, in an opinion piece in the same issue of *Health Affairs*. "But it also shows that many consumers lack the context required to judge if a medicine that reduces overall mortality over five years from 4% to 3% is a medical miracle or a waste of money."

Interpret: Schwartz argues that lay individuals can and will be able to interpret such data, if they are exposed to it. "When [the nutrition facts label] came out, a lot of people wondered whether people could make sense of this information," she says. "There has to be a learning curve," she insists.

So which is worse: overestimating or underestimating the benefit of a drug? "It's hard to know which direction is more harmful," says Woloshin. "The idea here is to help [people] get accurate estimates."

The team presented its findings to the FDA in September 2003, but the agency has taken no steps to incorporate drug benefit data into direct-to-consumer ads nor to conduct a national test of the more detailed drug information box that Schwartz and Woloshin originally proposed.

So the pair are making plans to conduct a larger study on their own, while also doing their best to raise public awareness about the issue.

Jennifer Durgin

Everything in the ad at left is real except the name of the drug. Two DMS researchers would like to see the information box below be a part of such ads.

Benefit of OFECOX (Ofecoxib)*

In a study, people with arthritis either took OFECOX or Ibuprofen
Here are the percents of people who said the following **after 6 weeks**

Patient's rating of the medication on their arthritis symptoms	Given Ibuprofen	Given OFECOX	Effect of OFECOX
Excellent effect	9 %	9 %	Same
Good effect	43 %	50 %	More
Fair, poor or no effect	48 %	41 %	Fewer

*Arch Med 2002;50:79-87

Faculty members join the ranks of the "retired"

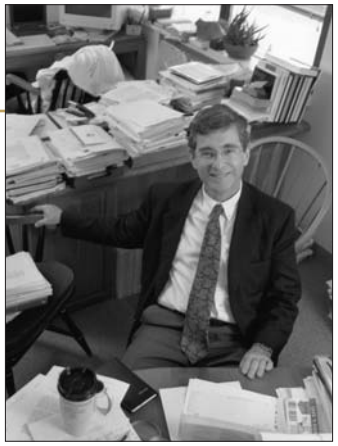
What do a psychiatrist, a pathologist, an anesthesiologist, and a biochemist have in common? They are DMS's newest emeritus faculty members and are now embarking on one degree or another of retirement.

Peter Silberfarb, M.D., chair of psychiatry from 1984 to 2003, joined the faculty in 1973 after completing his residency in psychiatry at DHMC. In 1974, he became the first psychiatrist in the U.S. to work full-time for a cancer center. He cofounded the field of psycho-oncology, the study of the emotional effects of cancer and its treatment, and made many contributions to the literature on the subject.

He's past president of the American Board of Psychiatry and Neurology and of the American Association of Chairs of Departments of Psychiatry, and past chair of the National Psychiatry Match Review Board.

During his tenure, DMS contracted to supply psychiatric care to the New Hampshire psychiatric hospital, the state prison system, and the Augusta Mental Health Institute in Maine. And on Silberfarb's watch, the sections of behavioral medicine, sleep medicine, child psychiatry, and neuropsychiatry-imaging became nationally recognized.

He plans to continue his research in psycho-oncology and spend more time working for the conservation nonprofits he loves —the Nature Conservancy, the Vermont Institute of Natural Science, and the Norwich, Vt., Conservation Commission.



FLYING SQUIRREL GRAPHICS

Emeritus status means no more paperwork for psychiatrist Silberfarb, above.

Walter Noll, M.D., a pathologist, is widely known for his research in diagnostic molecular genetics and predictive gene testing. Less well known may be his work on a task force that reorganized DHMC's pediatric services and invented the acronym CHaD for the Children's Hospital at Dartmouth.

Before coming to DMS in 1973 to run the Clinical Chemistry Laboratory, Noll ran a U.S. Army research lab in Bangkok. In 1985, he established DHMC's Molecular Genetics Diagnostic Laboratory. His work in molecular genetics was stimulated by his interest in a family affected by familial thyroid cancer.

In "retirement," Noll is serving as medical director and vice president of medical services at Myriad Genetic Laboratories in Salt Lake City, Utah. He still has a home in Etna, N.H., however, and gets back to the Upper Valley as often as he can.

Kenneth Travis, M.D, an anesthesiologist, was in private practice in Massachusetts before coming to DMS in 1992. He trained under several legendary

figures in anesthesiology and respiratory care at the University of Virginia and Massachusetts General Hospital. He contributed to describing the association of upper airway obstruction and pulmonary edema in children and focusing attention on the aging anesthesia workforce.

His retirement plans include hiking, biking, and visiting family. He is an amateur photographer and writer, too. "I keep pecking away at a short-story sequence for the grandchildren," he says. He also serves on a task force on aging for the American Society of Anesthesiologists and hopes to teach part-time.

Oscar Scornik, M.D., Ph.D., a biochemist, began his career in the 1960s at the National Research Council of Argentina, then did a postdoctoral fellowship at Harvard under noted biochemist Mahlon Hoagland, M.D. When Hoagland became chair of biochemistry at DMS in 1968, he convinced Scornik—by that time back in Argentina—to take a job at Dartmouth. Scornik has been at DMS ever since.

His research has focused on protein synthesis and the regulation of protein content in mammalian cells. His lab's studies of ways to minimize the requirements of dietary protein in mice have implications for humans in situations when food is scarce or when protein intake should be restricted, as in kidney or liver disease.

Scornik will keep teaching and writing but isn't sure what else he'll do—yet. "It's too early to be more specific," he says.

Laura Stephenson Carter

Cancer biologist and cancer survivor is named to Carroll Chair

Nancy Speck, Ph.D., has studied the biological mechanisms of cancer for years. She has mentored many young cancer researchers. She is associate director of basic sciences at DHMC's Norris Cotton Cancer Center. And she is herself a cancer survivor. All those threads of her life came together with her appointment on July 1 to Dartmouth's James J. Carroll 1948 Professorship in Oncology.

Being named to an endowed chair is one of academe's highest honors. Speck, who has been on the DMS faculty since 1989, is known internationally for naming and describing core-binding factors, as well as for more recent work with hematopoietic stem-cell development and mutation. Hematopoietic stem cells are precursor cells that develop into blood cells. Mutations within these cells, as a result of mutated genes and altered proteins, can cause some types of leukemia.

In addition to contributing to the study of leukemia, Speck's research on gene mutations has provided strong supporting evidence for the hypothesis that hematopoietic stem cells develop from endothelial cells.

Speck is also devoted to sharing her love for the lab with others. Her passion for mentoring young researchers is evident from the way her eyes light up when she talks about her graduate students. "I love it," she says, when a student "comes into the lab with ability but is clearly very green . . . to watch them grow scientifically over the next several years, to the point where they understand the details of their project probably better than you do." She especially enjoys mentoring women because of the tough choices women scientists have to make when balancing career and family.

"[Nancy] arrived at a crucial moment in my career, when the decision to go for it, 'it' being an independent position as a scientist, had to be made," says University of Oxford researcher Marella De Bruijn, Ph.D., who first met Speck at Erasmus University. Speck was studying hematopoietic stem-cell emergence in mouse embryos as a Fogarty Fellow, and she encouraged De Bruijn to come work in her lab at Dartmouth. "What influenced me most was, I think, the personal exchanges we had about her own career and how she succeeded in her work."

Genes: Trained as a basic scientist, Speck did not intend to become a cancer researcher but stumbled into the field when the two genes she was studying were found to have a direct link to human cancer. Basic scientists often view clinical science as a bit mundane, Speck admits.

But her perspective changed dramatically in 2001, when she was diagnosed with breast cancer and experienced the anxiety and fear that accompany such a diagnosis. "When you are in the position of being a patient and reliant on the information that's gained from those trials, you come to realize how important

FLYING SQUIRREL GRAPHICS

Nancy Speck, second from right, was recently appointed to Dartmouth's James Carroll Professorship in Oncology.

they are," she says. "It has certainly made me more dedicated to the Cancer Center."

Speck has also made many contributions in the administrative realm. She cochaired the committee for the recent Cancer Center expansion, chaired the committee for wet-lab space allocation in the addition, and is the founding director of the Cancer Mechanisms Research Program at Norris Cotton.

She has received numerous national honors and grants, including a prestigious Leukemia and Lymphoma Society grant. She also helped her department secure a National Institutes of Health predoctoral training grant, a benchmark of quality in graduate programs.

A graduate of Western Maryland College, now McDaniel College, and of Northwestern University, Speck trained as a postdoctoral fellow at the Massachusetts Institute of Technology's Whitehead Institute before joining the DMS faculty.

Endowed: The Carroll Professorship was endowed in 1979 in James Carroll's memory by his Dartmouth College '48 classmate Samuel Noble. Speck is the third incumbent in the chair.

Jennifer Durgin

Highlights from the Class Day Addresses

Judah Folkman, M.D.
Julia Dyckman Andrus Professor of Pediatric Surgery and Professor of Cell Biology at Harvard Medical School

From now on, patients will continue to be your teachers. . . . There is a debt that we owe our patients for our education. . . . How does one give back to one's patients? Well, first by trying to become the best physician or medical professional you can. . . . One sure way to achieve this is to find a mentor, as soon as you can. . . . Secondly, a little later in your development, try to become a mentor yourself. . . . And then when you become really good at something—whether it's a central intravenous line or diagnostic understanding—try helping others to achieve the same expertise. . . . Finally, you know, I'm sure, how important it is to avoid destroying a patient's hope. Physicians have such power to destroy hope without even being mindful of it. . . .

And for those of you who will do research . . . remember that it is you who will arm your fellow clinicians with new ways to relieve suffering and with an increased understanding of the scientific basis of medicine.

Gary Maslow
DMS 2004 M.D. Graduate

The white coat is important to our teachers. . . . Their white coats were symbols of their competence, but what they taught me was not so much about the power of the coat as a symbol, but instead about the value of what was inside—both inside their hearts and inside their heads.

It is what is inside the white coat that counts, namely ourselves, all of our experiences, what we have learned here on these hallowed grounds. . . . We have also learned that which is most important from our patients. They have taught us about their diseases, they have shared their stories of illness, they have sat before us naked physically and emotionally and asked for our help. We carry each of their stories with us, somewhere beneath the breast pocket of our white coats. It is what is inside these stories and relationships that is important.

What is inside our white coats is ourselves, our minds, and our bodies, which have been trained over these past few years to carry out the work of medicine.

Margaret Ann Crane-Godreau
DMS 2004 Ph.D. Graduate in Physiology

Our nation has an aging population and there is political pressure to change the way we deliver and pay for medical services. Also, there is pressure to reduce the cost of medical care. We are challenged by emerging diseases such as SARS and Ebola and by the worldwide HIV pandemic, with its social and economic consequences. . . .

In contrast to these challenges, we have technology, medications, and insight that might have seemed more like science fiction a relatively short time ago. We have a real prospect of personalizing patient care, where practitioners will have detailed genetic information providing insights into the metabolism and physiology of the individual patient. Such new technologies will allow physicians to tailor treatments with far greater precision than is possible today. Funding is increasingly available for integrated investigations, supporting multidisciplinary teams . . . of physicians, researchers, public-health workers, and educators. . . . We will face challenges and over the course of our collective lives, will make thousands of decisions that will influence the lives of individuals and, in some cases, perhaps whole nations.

Voices are raised in celebration of graduating students

"The one voice missing is that of the people whom we will serve some day soon," said M.D. graduate Gary Maslow during his Class Day speech. So he supplied the missing voice by reading aloud a letter from grieving parents whose daughter had died in DHMC's Pediatric Intensive Care Unit. They thanked Maslow and others for "kind words," "cheerfulness," and "time spent at just being there in support to all of us."

Those voices—Maslow's and the parents'—were among the many heard on Class Day, held on June 12. Dean Stephen Spielberg, M.D., Ph.D., welcomed the graduates and their families and friends to the event. Keynote speaker Judah Folkman, M.D., who has made significant discoveries in angiogenesis, reminded students that patients would be their most important teachers. Maslow talked of the white coats that symbolized what he and his classmates had learned. And graduate student speaker Margaret Ann Crane-Godreau spoke of how well Dartmouth had prepared students to meet the challenges ahead. (Excerpts from the three main speeches are in the adjacent box.)

Later, the voices of DMS faculty members announced the names of this year's degree candidates: 49 M.D.'s; 27 Ph.D.'s plus two M.S.'s in the biomedical sciences; and 20 M.S.'s, 32 M.P.H.'s, and one Ph.D. in the

evaluative clinical sciences.

Then came the presentation of the student awards. Symeon Missios earned the Dean's Medal as the M.D. graduate with the best overall record of achievement, and Sergio Quezada was awarded the John W. Strohbehn Medal for Excellence in Biomedical Research. All the student prizes presented during graduation week are listed in the adjacent box.

Teachers: Students handed out some awards, too. The Basic Science Teaching Award went to anatomy professor Matthew Heintzelman, Ph.D.; the Clinical Teaching Award to general internist Roshini Pinto-Powell, M.D.; and the Thomas P. Almy Housestaff Teaching Award to chief surgery resident Christopher Alessi, M.D. In addition, the College's honorary-degree recipients included Janet Rowley, M.D., known for her work on leukemia and lymphoma.

As Class Day came to an end, the deep, rich voice of Dartmouth language professor John Rassias sang the Hippocratic Oath in Greek. And in closing, Dean Spielberg led a chorus of voices as the M.D. candidates recited the oath in English.

Still, the voices of those parents who wrote Maslow echoed silently with a message for all the graduates: "When we think of you and your future that you'll have in the medical field, we know that many lives will be touched by your life because of the caring way you have in connecting with people. Continue on. You're doing a great job!"

Laura Stephenson Carter

Student Prizes & Awards

Dean's Medal
Symeon Missios

John W. Strohbehn Medal for Excellence in Biomedical Research
Sergio Quezada

Department of Anesthesiology Outstanding Graduating Student Award
Kirsten Redborg

Saul Blatman Award for Excellence in Maternal and Child Health
Sarah Pitts

Harte C. Crow Award in Radiology
Leila Khorashadi

Dartmouth-Mosenthal Surgical Society
Danielle Adams, Todd Burdette, Jason Kemp, Symeon Missios

French Distinguished Student Award in Pathology
Joren Keylock

Dr. Freddie Fu Orthopaedic Surgery Medical Student Award
James Ames

American Medical Women's Association Glasgow-Rubin Achievement Citations
Sarah Pitts, Fremonta Meyer, Danielle Adams

Good Physician Award
Leigh Strauss

Hitchcock Foundation Student Research Prize
Gary Maslow

Julian and Melba Jarrett Memorial Prize
Wendy Osterling

Frederic P. Lord Award in Anatomy
Joren Keylock

Department of Medicine Award
Emily Demetriou

Merck Manual Awards
Todd Burdette, Angela Sanchez

Arthur Naitove Surgical Scholar Award
Danielle Adams

American Academy of Neurology Prize for Excellence in Neurology
Fremonta Meyer

New England Pediatric Society Award
Gary Maslow

Department of Psychiatry Award for Excellence in Clinical Psychiatry
Gary Maslow

John F. Radebaugh Community Service Award
Andrew Smith

Rural Health Scholar Awards
Jason Kemp, Victoria Martin, Gary Maslow

Hilda Weyl Sokol Award
Leigh Strauss

Rolf C. Syvertsen Scholars
Danielle Adams, Joren Keylock, Fremonta Meyer, Simeon Missios, Sarah Pitts

Leonard Tow Humanism in Medicine Award of the Arnold P. Gold Foundation
Gary Maslow

John and Sophia Zaslow Prize
Jason Kemp

Douglas P. Zipes, M.D., Research Prize in Medicine
Robert Nutt

ALL: FLYING SQUIRREL GRAPHICS

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The sun shone on **1** Wendy Osterling and 130 other DMS graduates as **2** Dean Stephen Spielberg presided over his first Class Day. Among the proud grads were **3** Katie Chatfield, **4** Margaret Thompson, **5** Nesochi Igbokwe, **6** Brian Livingston, and **7** Chunbai Zhang.

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Cancer Center hosts visitors from top German cancer center

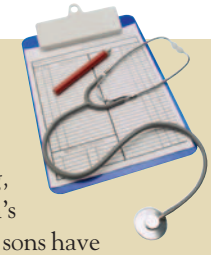
In June, a group of renowned German cancer scientists made a visit to Dartmouth's Norris Cotton Cancer Center. The group had been charged with establishing Germany's first comprehensive cancer center (CCC), and they'd selected Norris Cotton as their model.

The visitors represented two organizations: Deutsches Krebsforschungszentrum (DKFZ), an internationally recognized research institute, and the University of Heidelberg, one of the oldest and most highly regarded German universities and medical schools. Their aim in forming a CCC is to provide a kind of oncological patient care new to Germany and a new foundation for translational research—creating a partnership under one roof between DKFZ and the university medical center.

Objectives: According to Dr. Mark Israel, Norris Cotton's director, the visit had two objectives: to show the Germans how an American cancer center is organized and where the areas of greatest challenge are, and to begin the process of building personal interactions between leading scientists there and investigators and physicians here.

"We're expecting a lot to come out of this," said Israel at the end of the Germans' visit. "Numerous e-mail addresses and telephone numbers have been exchanged. That was really my goal—not only to help them, but

CLINICAL OBSERVATION



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

Charles Carr, M.D.
Associate Professor of Orthopaedic Surgery

Carr, a graduate of both Dartmouth College and DMS, joined the faculty in 1989. He is medical director of DHMC's Sports Medicine Clinic and director of the orthopaedic residency program. His clinical interests include arthroscopy, knee and shoulder disorders, and trauma.

What made you decide to specialize in orthopaedics and, in particular, sports-related injuries?

Orthopaedics offers the physician a sense of quick gratification compared to other specialties. And sports-medicine patients are very motivated to recover quickly from their injuries so they can return to their sport. I have a great deal of respect for physicians who care for patients who are chronically ill or have incurable diseases. It would be very difficult for me to be a bystander to irreversible diseases. We're fortunate in orthopaedics that we don't have to deal with that form of illness very often.

Did you play sports yourself growing up?

I played football, baseball, track, and golf all through high school. At Dartmouth, I was on the varsity track team.

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

I wanted to be a veterinarian. If I had become a vet I would have probably chosen to care for large animals rather than just family pets.

What's the last movie you saw?

I have three sons—ages 8, 13, and 15—so I get to go to a lot of action movies with them. The last one that I saw was *Spiderman 2*.

What's the last book you read?

The Fellowship of the Ring, the first book in Tolkien's *Lord of the Rings* trilogy. My sons have become obsessed with the story, and that has sparked my interest in it.

What's your favorite nonwork activity?

Spending time with my family is number one, and playing golf is number two.

What about you might surprise most people?

I think people are surprised that I'm a southern Californian. I've been told that I act more like a native New Englander.

Of what accomplishment are you most proud?

My number-one accomplishment is raising three kind, caring children with my wife, Carol.

What bores you?

Filling out insurance and disability forms.

What is stressful for you?

Taking exams and speaking in front of large groups.

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

Sports medicine is sometimes seen as a "glamour" specialty. People think that sports medicine physicians primarily take care of the acutely injured, elite, competitive athlete. But that's only a small part of what we do. Most of our patients are middle-aged weekend warriors or people with chronic overuse problems that require nonoperative treatments. We spend most of our time taking care of the bumps and bruises and musculoskeletal aches and pains that everyone gets.

Is there anyone who was a mentor for you?

Leland "Pete" Hall, who was chief of orthopaedic surgery when I was at DMS and during my residency. He is now retired and remains active in department conferences. He was enthusiastic about and truly enjoyed his profession. I hope I can remain as committed to the field and as excited about the care of patients as he was.

also to create this personal contact that would lead to future interactions."

The visit was a tightly scheduled two days of presentations, discussions, tours, and group meals. According to Dr. Hans-Ulrich Kauczor, head of DKFZ's radiology department, the visit was a success. "It was wonderful. Very busy. We learned a lot about how the comprehensive cancer center is set up. Most important for us was to see how you are trying to initiate the collaboration between clinicians and research scientists."

Protocols: Dr. Volker Diehl, the acting head of the new CCC, noted that currently in Germany each researcher has his or her own protocols. "I think for the sake of the patients, it is extremely important to have common protocols so the patients get the best treatment," he said during the visit. "People here [in the U.S.] like to work together. That is not true in Germany."

Diehl has known Israel for some years and has visited Dartmouth before. It was Diehl's decision to use Norris Cotton as a model. "We are enchanted by the friendliness and the high scientific standard," he noted. "We are very happy to be here."

The visit concluded with closing presentations over a working lunch. While the group munched on cold cuts and salad, Dr. Andrew Gettinger, whom Israel introduced as the inspiration and brains behind DHMC's electronic patient information and record system, gave the group a virtual tour of these systems. "The information needs to be

JON GILBERT FOX

Several German visitors listen intently as white-coated DMS faculty members Jay Buckey, right, and Eugen Hug, left, explain the integration of hyperbaric and radiation therapies at Dartmouth's Norris Cotton Cancer Center—one example of work at a comprehensive cancer center.

available where it's needed," said Gettinger, noting that most physicians use laptops to enter and retrieve data. German heads nodded vigorously.

How expensive are the computers, they wanted to know, and how do you control access? Gettinger responded that the system was restricted by an internal name-recognition device. "Ah, like an internal firewall," said Dr. Otmar Wiestler, chair of the DKFZ management board. "Exactly," responded Gettinger. In the international language of computers, jargon such as "firewall," "reboot," and "IP" needed no translation.

Knuckles: As Gettinger concluded his presentation, the visitors rapped their knuckles appreciatively on the table—a tradition in Germany.

Israel then invited Dr. Wiestler to give an overview of the progress to date in Heidelberg. Wiestler pulled out an Apple PowerBook and fired up a Powerpoint presentation entitled "Comprehensive Cancer Center—NCT Heidelberg."

At the core of their venture is interdisciplinary oncological care—including central monitoring of data, interdisciplinary tumor boards, and centralization of information and counseling. The concept of shared governance, noted Wiestler, will perhaps be their toughest sell. As Israel gave advice on how to structure the governance of this new entity, Wiestler moved boxes around on his electronic organizational chart. "There is fierce competition for funding," explained Wiestler. "Forging collaborative partnerships will not in all cases be easy."

"First we want to bring the partners together," said Dr. Josef Puchta, administrative chairman of the DKFZ management board. "Maybe in a few years we will come under one legal structure."

"I think you're destined for success," commented Israel.

"We will do it. That's for sure," asserted Puchta.

"We have learned a lot," added Wiestler. "I think in the not-too-distant future, we should have you in Heidelberg." As Wiestler shut down his PowerBook, the Americans initiated a round of enthusiastic knuckle-rapping.

"This is something we should borrow," declared Ralph Czachowski, the director of financial services for Norris Cotton, as the visitors and their hosts filed noisily from the room.

Katharine Fisher Britton

"HELLO, DOLLY!" AT DHMC

She's known as the "fairy grandmother" of Dartmouth-Hitchcock Medical Center's Pediatric Intensive Care Unit (PICU), but she prefers to remain anonymous. Communicating through Elizabeth Stanton, a lawyer in the DHMC risk management department, the PICU's fairy grandmother handcrafts dolls for sick girls who are having an especially difficult time.

"Last week, we gave a doll to the sister of a young patient who died here," says Stanton. Since the dolls are typically given to patients, Stanton had called the doll maker to ask if she could give one to a sibling. "I knew her answer would be an enthusiastic 'yes,' and the very next day there was a new, beautiful doll sitting on my chair."

Over the last couple of years, the unknown benefactor has provided more than a dozen dolls, each of which has individualized hair and skin coloring and elaborate handmade clothing and accessories to match the season. "She is the kindest, sweetest, most accomplished woman," says Stanton of the doll maker. "Our fairy grandmother embodies the generosity of spirit—the very heart—of who we are at DHMC." J.D.

TOUCHED BY MEDICINE

When medical student Sai Li decided to launch a student-run DMS literary magazine, he had no idea it would develop into a project that almost no other medical school was doing. With a large staff of his fellow '06s, Li has edited, designed, and published a magazine called *Lifelines*. It contains submissions from people whose lives have been touched by medicine—students, caregivers, patients, and patients' families.

"As you flip through *Lifelines*," says Meghan McCoy, the artwork editor of the publication, "you are greeted with poetry and stories that examine life in all its forms as well as illness." For example, the issue contains a short story describing a DMS student's memorable but difficult experience caring for a patient on a rotation in Germany. "The spirit of both the patient and the student really permeates through you after you read it," says Li.

To obtain a copy of the first issue, or for more information about the project, e-mail Lifelines@Dartmouth.edu. M.C.W.

DMS is a finalist for national community service recognition

Minutes before this year's Class Day celebration was to begin, Dean Stephen Spielberg, M.D., Ph.D., got word that DMS was one of three finalists being considered for a national award—the Outstanding Community Service Award of the Association of American Medical Colleges (AAMC). He quickly revised his welcoming speech so he could share the good news with the assembled multitude.

Site: Soon after, the AAMC began scheduling site visits to the finalists. In July, it was DMS's turn. Three representatives from the organization spent a whirlwind day at DMS hearing presentation after presentation about student-run community service projects; making a visit to the Good Neighbor Clinic, the local free clinic in White River Junction, Vt.; and meeting with people from several community agencies.

Spielberg told the AAMC guests that he was impressed by DMS's community service program before he even accepted the position of dean last year. "I saw here at Dartmouth, embedded in the psyche, a sense of community outreach," he said. "I wanted to be a part of that."

"We've intentionally tried to embed community service in our culture," noted Joseph O'Donnell, M.D., director of community service programs. He loves to talk about the wonderful volunteer work that DMS students do.

INVESTIGATOR INSIGHT

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

Bill Roebuck, Ph.D.
Professor of Pharmacology and Toxicology and Adjunct Professor of Environmental Studies

Roebuck joined the faculty in 1979 after completing a four-year research fellowship at DMS. He studies the role of aflatoxin in causing liver cancer and teaches medical students as well as an undergraduate course on global public health.

How did you decide to become a scientist?

I did not *decide* to become a scientist, rather it just happened. In college, I enjoyed chemistry and biochemistry and was very interested in agricultural issues. In the late 1960s and early 1970s, the so-called green revolution was in full tilt. It looked as if hunger might really be eliminated from the world. In graduate school, opportunities opened to combine these interests with the field of toxicology and to contribute to public health.

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

Learn as much chemistry and biology as possible. Find an area in which you can become an expert, and then work very hard at becoming a generalist.

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

Engaging in this fantasy today, I should love to be a teacher in some small village somewhere off the beaten path—oh, perhaps in the Canadian Arctic. Engaging in this fantasy on another day, I might wish to be a photographer collecting images of less-traveled lands.

What's your favorite nonwork activity?

Without a doubt sea kayaking. My favorite destination is the Arctic, especially Hudson Bay.

What's the last book you read?

Sweet Thursday by John Steinbeck.

What kind of music do you enjoy?

I don't listen to much music, but lately I've been listening to the Johnny Clegg Band, a South African group.

If you could travel someplace you've never been, where would it be and why?

Greenland would be one location. The coastal lands are lush with vegetation, the sea is full of life, and there is a big sky—one is not hemmed in by tall trees. Nature is mostly in control, and humans have to adapt to the ways of nature.

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

The greatest joy is easy—having a manuscript accepted for publication, followed by seeing it in print. The frustration is the slow pace at which quality experiments can be completed.

Do people have misconceptions about your field?

Toxicology is the study of the adverse consequences to an organism that has been exposed to a particular chemical or chemicals. It is very hard for people to understand that it is the dose, or amount of chemical to which one is exposed, that determines if a toxic event occurs. The dose is the difference between a drug and a poison, or a chemical with no adverse effect and a terrible toxin. We all understand this from chemical relationships of which we have personal knowledge—such as coffee and the jitters. But it's not common for people to use this principle in expecting adverse chemical actions for the wide range of substances—such as drugs, pollutants, and natural toxins—to which we are exposed.

Do you always have a working hypothesis in the lab?

Yes, I do. Sometimes the hypothesis is finely developed and carefully constructed and at other times it is much more general. It is the expectation of an experiment that is critical for me. However, I try not to become too attached to any particular hypothesis such that I cannot reject it or make a new or modified hypothesis.

"The stories take your breath away," he says.

DMS's dedication to community service can be traced all the way back to the School's founder, Dr. Nathan Smith, who recognized the importance of meeting community needs. In 1991, the DMS Student Government formalized the concept by founding the Community Service Committee, which still exists as a student-run organization that sponsors projects to meet community health needs, provide community education, and promote social justice. In 1995, DMS received the American Medical Student Association's Paul Wright Award for outstanding community service. Back then, nearly 80% of the first- and second-year students were involved in one or more volunteer projects. Today it's almost 100%.

Endless: The projects are many and varied: students work in free medical and dental clinics; volunteer with community agencies such as Planned Parenthood and a local home for unwed mothers; help people with AIDS and victims of domestic violence; befriend children with chronic illnesses or special needs; teach high-school and college students about substance abuse; volunteer on wilderness response teams; work with underserved populations internationally . . .

The list goes on.

One of the longest-standing programs is Partners in Health Education, which grew from the vision of former U.S. Surgeon General C. Everett Koop, M.D., after he joined the DMS faculty in the early 1990s. The program pairs medical students with area elementary-school teachers to provide age-appropriate health education to local schoolchildren. Another important initiative is the Albert Schweitzer Fellowship, which provides a mechanism for students from Dartmouth Medical School, the University of Vermont, and Vermont Law School to develop projects that address unmet health-care needs in their communities.

Better: Although the community service program has been a success by any measure, DMS wants to make it even better. Recently, O'Donnell, student leaders, faculty members, and community advocates undertook a formal review of students' community service experiences. The group's recommendations include improving messages about service during the application process, emphasizing community service more at matriculation and orientation, fostering leadership skills, improving faculty mentoring, connecting better to community needs, and disseminating information about the experiences to inspire others.

The AAMC's Outstanding Community Service Award, established in 1993, recognizes community service programs that go beyond the historical role of academic medicine to reach communities whose needs are not being met through the traditional health-care delivery system. The winner of the award will be announced at the 2004 AAMC annual meeting in Boston in November.

Laura Stephenson Carter

TOUR OF HOPE

Highhouse (left) is pedaling hard at the head of this practice peloton.

DHMC oncology nurse hits the high road

"They have this great spirit and optimism—a real passion for life," says Brian Highhouse, a DHMC oncology nurse for the past 15 years. He's referring to his patients, who, he explains, have inspired him to stay in nursing. "I said, 'Hey! That's for me! I agree. Let's live every day to its fullest.'"

For Highhouse, living every day to its fullest usually involves a bicycle and miles and miles of pavement. In October, Highhouse will join 19 other experienced cyclists in the Tour of Hope—a 3,500-mile cross-country relay, sponsored by the pharmaceutical firm Bristol-Myers Squibb, to promote participation in clinical trials for cancer research. Leading the team will be six-time Tour de France winner Lance Armstrong, who survived advanced testicular cancer in the mid-1990s.

Along the route from Los Angeles to Washington, D.C., the team will stop at various rallying sites, where team members will share their personal experiences with cancer. Armstrong will join the team for the start, the finish, and selected segments along the way. The riders, who range from age 32 to 66 and include cancer survivors and caregivers, will ask people to "make the promise." The promise is a personal pledge, outlined at *www.tourofhope.org*, to be proactive about cancer screening, to support loved ones with cancer, to help make cancer a national health priority, and to consider, if diagnosed with cancer, participating in a research study.

"Hopefully, studying new treatments is going to speed the process toward better treatments and cures. Without [clinical trials], we're not going to make advances," says Highhouse, who has come to understand the importance of such research on a personal as well as a professional basis. Two years ago, his wife, Paulette Buchholz, a dietitian at DHMC, was diagnosed with lobular carcinoma in situ, meaning that she has a high risk of developing breast cancer. But Buchholz—who is also an avid cyclist—is receiving a new tamoxifen-based treatment, recently tested in a clinical trial, and is doing well. J.D.

FOCUS ON RECENT RESEARCH

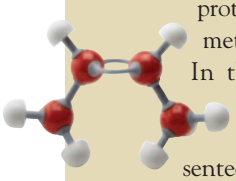
This section includes brief accounts of selected Dartmouth research projects on biomedical and health-policy issues.

Revealing patterns

Magnetic resonance imagining (MRI) may one day play a key role in the early diagnosis and treatment of Alzheimer's disease. Using repeat MRI scans to track changes in the brains of 90 older adults, DMS researchers, led by Andrew Saykin, Psy.D., found a strikingly similar pattern of brain activity and gray-matter loss in patients who have only perceived cognitive deficits and in those diagnosed with mild cognitive impairment, a precursor condition to Alzheimer's. Saykin presented the findings at the International Conference on Alzheimer's Disease and Related Disorders.

Structural insight

Dartmouth computer scientist Bruce Donald, Ph.D., and his students are working to make structural genomics—the study of proteins' three-dimensional, geometric structures—less onerous. In the *Journal of Biomolecular NMR* (nuclear magnetic resonance), his team presented new algorithms that require less data and deliver more accurate results. Most NMR experiments measure a protein and report the distances between molecules and the angles of chemical bonds, but can't indicate which atoms or bonds the measurements correspond to. "It's a little like taking all the heights and weights of everyone at a cocktail party, but you don't know which height goes with which person," says Donald. The new techniques assign the measurements to the correct nuclei, unveiling the architecture of proteins more accurately.



Calcium does a colon good

"Previous studies have demonstrated an association between calcium intake and moderate decreases in the risk of precancerous colorectal tumors, but this is the first randomized trial to evaluate the effect of calcium on different types of colorectal lesions," says DMS epidemiologist John Baron, M.D., about his recent study with DMS graduate student Kristin Wallace. The researchers analyzed data from 913 patients and found that supplemental calcium slightly decreased the risk of all types of colorectal polyps; the effect was greatest for the most advanced lesions. The results were published in the June 16 issue of the *Journal of the National Cancer Institute*.

Same relief, lower dose

Tacrolimus, a topical, steroid-free ointment often used to treat eczema, is effective in a lower concentration than is commonly prescribed, according to a DMS study. The ointment, which also goes by the brand name Protopic, proved successful in adults and children ages two and older at only a 0.03-percent concentration. The results were presented at the annual meeting of the American Academy of Dermatology. In a report on the study in *Dermatology Times*, DMS's Shane Chapman, M.D., the study's principal investigator, said that in his own practice he used to prescribe 0.1-percent ointment to his patients regardless of their age or the severity of their condition. "I suspect a lot of other dermatologists also favor the higher-strength product," he said, noting that these findings will allow dermatologists to prescribe the lower dose with confidence.

A matter of some sensitivity

A Phase I clinical trial at Dartmouth's Norris Cotton Cancer Center is testing a new drug, gefitinib (also known by the brand name Iressa), to see if it can restore sensitivity to tamoxifen in breast-cancer patients who have become resistant to the popular antiestrogen therapy. For more than 20 years, tamoxifen has been a staple treatment for the two-thirds of women with breast tumors that express estrogen receptors. But the vast majority of metastatic tumors eventually become resistant to tamoxifen and other endocrine therapies, explains Gary Schwartz, M.D., the principal investigator of the trial. The results of the study are due out in early 2006.

Unlocking metabolic mysteries

Thanks to a recent DMS study, energy regulation in mammalian cells has become less mysterious. DMS endocrinologist Lee Witters, M.D., and colleagues at Harvard have shown that a gene known as LKB1 is responsible for the activation of an important cell-energy mediator, AMP-activated protein kinase (AMPK). AMPK regulates cellular metabolism and proliferation and protects against cellular death. It has been known that LKB1 is a tumor suppressant, yet cells lacking LKB1 are more likely to die. Witters' team proposed a model to explain this paradox and a way that strategic manipulation of LKB1 and AMPK may help combat certain cancers and type 2 diabetes. The work was published in the *Proceedings of the National Academy of Sciences*.

Helping to stub out smoking

Parents, take note: a new DMS study, led by pediatrician James Sargent, M.D., shows that children whose parents restrict them from viewing R-rated movies are much less likely to try smoking than their peers. In the study, only 3% of adolescents who were never allowed to watch R-rated movies had lit up, compared to 14% of those whose parents let them view such flicks sometimes or all of the time. For a list of actors who light up and films that glamorize tobacco use, visit *www.scenesmoking.org/whyitsimportant.cfm*, an American Lung Association site that mentions Sargent's ongoing research. His new study, which received a lot of press, appeared in the July issue of *Pediatrics*.

Match legislation was championed from Dartmouth

When a federal class action lawsuit charged that the National Resident Matching Program (NRMP) has been violating antitrust laws, DHMC's governmental relations director, Frank McDougall, set out to help preserve the system that has long "matched" medical-school graduates with residency positions at academic medical centers.

Working with the American Hospital Association and the Association of American Medical Colleges (AAMC), as well as with the Vermont and New Hampshire Congressional delegations, McDougall lobbied for legislation that would exempt the Match from antitrust laws. Academic medical centers and teaching hospitals have relied on the Match for over 50 years.

"If the Match was dissolved . . . was ruled to be an antitrust violation," explains McDougall, "then we'd have a whole new system that would cost a whole lot of money and not be as effective as the one we have."

The NRMP, established in 1952, uses a computer algorithm to match medical school graduates to residency programs. Prior to the 1950s, medical students had to seek out residency positions on their own, program directors often pressured students to make decisions before they were ready, and students who "knew someone" were apt to land the better positions. Commitments were often broken—by students as well as programs—resulting in further confusion.

Choices: Now, after they interview at the programs they're interested in, students list their choice of programs in rank order, and program directors likewise rank the applicants; the computer then matches students with programs—maximizing a high choice for each side. About 24,000 students from U.S. and foreign medical schools compete for some 20,000 positions annually; 85% of U.S. medical students get into one of their top three choices.

In 2002, three medical residents filed an antitrust class action lawsuit against seven nonprofit organizations and 29 teaching hospitals, charging that the Match violates antitrust laws by limiting competition and preventing medical residents from negotiating for higher pay, shorter hours, and better working conditions. Typically, residents

Medical technologist Betty Ward is a walking history of DHMC's clinical laboratories

One might expect an 80-year-old woman who's lived her whole life in Hanover and worked at the same place for 52 years to be misty-eyed about the past. Meet Elizabeth "Betty" Ward, currently the longest-serving DHMC employee: she exhibits the laconic speech and telltale "ayuh" of the archetypal New Englander, but walks faster than she talks and is not one to glorify the past.

When Ward started working in the clinical labs in 1952, "everyone had to do everything," she recalls. "Now we are all departmentalized. . . . You don't come into contact with the other folks in the laboratory the way you used to." But, she adds, "I find it better to be specialized. It's very difficult to keep on top of things if you have so many different areas you have to deal with."

For Ward, change has been a constant. As has the good humor with which she's embraced it. For example, midway through her career, "we went to disposable everything. . . . It took a while to get used to, like using plastic petri dishes after using these big clunky glass ones. They were always flying!" Ward laughs as she pantomimes handling the lightweight plasticware but adds that disposable equipment "is ever so much safer of course."

A graduate of the now-defunct Mary Hitchcock School of Medical Technology, Ward has served over the years as technical director of MHMH's clinical lab, as educational coordinator of the medical technology program, and as an instructor in the medical students' parasitology labs. Today, she continues to offer informal tutorials for medical students and residents who want more background in parasitology. "Occasionally," says Elmer Pfefferkorn, Ph.D., a longtime professor of microbiology, "students will find something puzzling during their microscopy of a clinical specimen. When I'm puzzled, too, it's a relief to be able to appeal to a higher authority."

Ward's matter-of-fact attitude toward change pervades her personal life as well. An avid outdoorswoman who once built her own frame backpack out of oak and canvas, she says that "when I first started doing backpacking, the pack would weigh about, oh, I don't know, 48 pounds." But for an expedition she was planning in the Big Horn Mountains, she notes, "I'm hoping for like 35—or 32 would even be better." J.D.

FLYING SQUIRREL GRAPHICS

Betty Ward goes the distance on the trail—still with a full pack at age 80—just as she has for 52 years in the clinical lab.

earn $40,000 a year and work up to 80 hours per week.

"The system in place, although not perfect, is better than the chaos that existed before," according to Peter Chin, M.D., who graduated from DMS in 1999, recently completed a residency in neurology at the University of Washington in Seattle, and is now a Robert Wood Johnson (RWJ) Clinical Scholar at UCLA.

System: There are, however, some drawbacks to the current system. For one thing, "residents barely make minimum wage," points out Kavita Patel, M.D., who is also an RWJ Scholar at UCLA as well as a former president of the American Medical Student Association, the nation's largest independent medical student organization.

But teaching hospitals are facing a number of financial challenges—such as cutbacks in Medicare and Medicaid reimbursements, soaring premiums for malpractice insurance, rising medical costs, and higher patient demand for expensive services—and are not eager to assume additional expenses.

Furthermore, a court battle over the Match could cost tens of millions of dollars in fees and legal costs, which would be shared by all academic medical centers and ultimately passed on to patients and taxpayers.

Legislation: To help the nation's academic medical centers—including, of course, DHMC—deal with the challenge presented by the lawsuit, McDougall approached New Hampshire's senior U.S. senator, Judd Gregg,

MEDIA MENTIONS: DMS

Among the people and programs coming in for prominent media coverage in recent months was Professor of Psychiatry **Matthew Friedman**, M.D., Ph.D. When the *New England Journal of Medicine* published a study showing that, as *USA Today* put it, "nearly one out of five combat soldiers are leaving Iraq with a mental health problem, such as post-traumatic stress disorder," newspapers nationwide turned for expert commentary to Friedman, the executive director of the Veterans Affairs National Center for Post-Traumatic Stress Disorder. "Today's returning soldiers may recover more easily than Vietnam veterans," continued *USA Today*, "because the latter were more vilified at home, says psychiatrist Matthew Friedman." He was quoted in the *Atlanta Journal-Constitution*, too: "'The most disturbing thing, in my opinion, is the stigma, and people who are most severely affected are the ones least likely to seek treatment,' Friedman said." The *New York Times* and *Wall Street Journal* were among the other papers seeking his insight.

"Nothing to cough at" was the headline on a story on ABC.com about the "alarming resurgence" of whooping cough. "Whooping cough, or pertussis, is a highly contagious bacterial infection characterized by violent coughing fits. . . . 'Whooping cough is the only vaccine-preventable disease that has not been completely controlled by routine childhood immunization,' according to Dr. **John Modlin**, chair of pediatrics at Dartmouth. And officials now realize the need for added measures against the disease." Modlin recently stepped down after many years as chair of the federal Advisory Committee on Immunization Practices.

A faculty member who is coeditor of the *Journal of Vascular Surgery* found himself, and his journal, in the public eye recently. Here's what happened: Several researchers at the Food and Drug Administration (FDA) submitted a study about a stent graft—a device used to treat aneurysms—that was published in the journal's online edition. Then the device's manufacturer raised objections about the paper, and the FDA asked the journal to withdraw it. In the August issue of the journal's print edition, the editors refuted the manufacturer's claim that the paper contained confidential commercial information. The controversy was then explored in a long feature in the *Wall Street Journal:* "The paper concluded that by three years or more after treatment, the mortality rate for patients getting the AneuRx [stent graft] probably exceeded that for surgical patients. . . . 'As editors, we are responsible for preserving the rights of authors to communicate appropriately reviewed scientific information and for preventing corporate influence of this process,' said **Jack Cronenwett**, a professor at Dartmouth and one of the editors of the journal. 'In this case we were unable to do so.'"

As many as 10 million women who have had their cervix removed are still getting routine Pap smears—the test used to screen for cervical cancer. The irony of the finding caught the attention of the Associated Press, the *New York Times*, the *Today Show*, and *USA Today*. Dr. **Brenda Sirovich,** an assistant professor of medicine who is based at the VA Medical Center in White River Junction, Vt., was the lead author of the paper. Reported *USA Today*: "While these tests are relatively inexpensive, these women are undergoing uncomfortable exams, doctors are being distracted from more important matters, and lab specialists are spending needless time analyzing specimens, Sirovich said." (See page 3 for more on her study.)

An opinion piece in the *Boston Globe* questioning the wisdom of a technological solution for every medical problem buttressed its argument with research from Dartmouth. Dr. Darshak Sanghavi, a clinical fellow at Harvard, urged expectant mothers to "decide whether EFM [electronic fetal monitoring] is right for them" rather than simply accepting it if it's offered. Then he gave a case in

AND DHMC IN THE NEWS

point: "At Dartmouth, for example, researchers had some patients who were considering back surgery watch a video about the operation's risks and benefits. Presumably better informed because of the video, the patients had 30% fewer surgeries. That doesn't mean that surgery was totally unnecessary—but that education empowers people to make personalized choices based on their own risk tolerance. Similar innovative strategies are needed" with EFM, he said. "Otherwise many mothers may choose an ounce of prevention—without sometimes realizing it can cause a pound of hurt."

In June, Dr. **Gilbert Welch**, a professor of medicine, faced off on NBC's *Today Show* against Dr. William Catalona of Northwestern University regarding the benefits and harms of prostate-cancer screening. Welch, the author of *Should I Be Tested for Cancer? Maybe Not and Here's Why*, recommends caution when it comes to cancer testing. Catalona, however, advocates widespread use of the prostate specific antigen (PSA) test, which has been shown recently to be less accurate than once thought. "It's important that we understand that cancer testing in general is a double-edged sword," Welch said on *Today*. "Tests like the PSA have made us rethink the nature of the word 'cancer.' We all think of cancer as sort of an aggressive disease that will kill you if you're left untreated. But there's another type of cancer, small collections of abnormal cells that will never bother patients in their lifetime. And the problem with cancer testing is we identify and treat these cells and subject [people] to the dangers of treatment."

"The dirty little secret about Social Security is that it's too small to transform the fiscal future. For all the books and seminars devoted to the subject, it is a side show" to the growth in the economy and in spending on health care, concluded the *Washington Post* in an editorial on current federal fiscal policies. "The United States currently spends 15% of GDP on staying well, fully six percentage points more than the average rich economies," wrote the *Post*. To support its argument that health care presents the greatest opportunity for economic reform, the *Post* noted that "**Elliott Fisher** of Dartmouth Medical School has demonstrated that some parts of the country spend twice as much as others per Medicare patient, even after adjusting for regional differences in patients' health status and the cost of medical care. Moreover, Dr. Fisher has shown that low-spending areas produced health outcomes at least as good as those in high-spending ones. If all regions could emulate the most efficient fifth of the country, the cost of Medicare would fall by 30%."

In 2001, pediatricians were urged by the American Academy of Pediatrics "to relieve needless suffering by better anticipating and assessing pain, creating soothing environments in their offices, and getting parents more involved," explained a recent story in the *Los Angeles Times*. "A generation ago, many health-care providers bought into the misconception that children don't feel pain as adults do. But youngsters deserve—and parents now expect—better, said Dr. **Joe Cravero,** [director of the PainFree Program at the Children's Hospital at Dartmouth]. 'There's no reason a kid needs to be crying and screaming in the hospital,' he said. 'If you or I come in for an appendectomy, we get the anesthesia we need.'"

A DMS study showing a correlation between adolescent smoking and R-rated movies received sweeping press coverage this summer, including in the *New York Times*, the *International Herald Tribune*, and the *Wall Street Journal*. "The results are striking. Parents really can make a difference," pediatrician **James Sargent,** M.D., the lead author of the study, told the *Toronto Star*. The *New York Times* also reported on a substance abuse symposium that featured Sargent and research he's conducting on a similar correlation between movies and alcohol. "Dr. James Sargent . . . said his research shows that middle school students in Vermont and New Hampshire who watched lots of movie scenes depicting alcohol use were more than three times as likely to try drinking than those with little exposure. Although previous studies had looked at whether advertising affected teenagers' drinking behavior—with conflicting results—no one had ever looked at the impact of the entertainment industry, Sargent said."

Associated Press reported recently on "a hormonal disorder that some experts estimate affects as many as one in 10 women in this country" but that is often misdiagnosed—polycystic ovarian syndrome (PCOS). "It affects not only the body's reproductive function, but also many metabolic processes. . . . 'It's been around for a long time,' said Dr. **Neal Mahutte,** a reproductive endocrinologist at Dartmouth-Hitchcock Medical Center. 'But during the last 10 years it's become clearer that this is more than a reproductive disorder.' . . . According to Mahutte, weight management is often the linchpin in treatment. But he stressed that one-size treatment does not fit all: Not every woman who suffers from the syndrome is overweight. Not every woman will benefit in the same way from treatment, he said. 'It's easy to miss the syndrome.'"

and asked him to cosponsor retroactive protective legislation. Gregg, who chairs the Senate Health, Education, Labor, and Pensions Committee, and Massachusetts's senior senator, Edward Kennedy, cosponsored an amendment to a major pension bill that Congress passed and President George Bush signed into law in April.

Provision: Under the amendment, the Match cannot be considered an antitrust violation nor can it be used as evidence in an antitrust case. In August, a federal district judge in Washington, D.C., dismissed the residents' lawsuit, citing the amendment's provision that the Match cannot be used as evidence in an antitrust case.

That may not be the end of the story, though. The *New York Times* reported that one of the lawyers for the residents who brought the suit "said the plaintiffs would 'certainly continue their fight for fair wages and safe work hours.'"

Chin and Patel would not be surprised to see changes that address some of the concerns raised in the lawsuit. After all, the Match and residency programs have undergone a number of changes since the 1950s. In fact, a 1950 graduate of Dartmouth Medical School, Harvard pediatric surgeon Hardy Hendren, M.D., was instrumental in refining the algorithm in the year the Match was inaugurated.

Changes: The algorithm has been modified a few times since, including in 1984 to accommodate married or partnered students who wished to train in the same institution or region. In the mid-1990s, then-DMS Dean Andrew Wallace, M.D., chaired a national committee that instituted an electronic instead of a paper system for handling the residency application process. In the late 1990s, the algorithm was tweaked again when it was discovered that it was subtly biased in favor of programs' choices over students'. And last year, a change was made in the length of residents' workweek, when the Accreditation Council for Graduate Medical Education mandated a reduction in resident work hours from more than 100 hours a week in many cases to a maximum of 80.

Role: Meanwhile, McDougall, who has received national congratulations for his role in saving the Match, is working on a number of other issues—on the federal level as well as in both New Hampshire and Vermont—that could have substantial financial ramifications for DHMC.

Still, changes to the residency system "may cost more in the short term, but [be] better solutions in the long term," says Chin, who has experience in public policy. He is a member of the American Academy of Neurology's legislative committee; he served two terms on the national administrative board of the AAMC's student section; and he was one of two student members on the Liaison Committee on Medical Education, the accrediting body for U.S. medical schools.

"The issue is not going to die down," agrees Patel.

Laura Stephenson Carter

Massage is a modality now offered at Norris Cotton Cancer Center.

A holistic approach to healing

Massage and meditation are not modalities that would jump to most people's minds if they were asked to name services offered by a cancer center. Yet Dartmouth's Norris Cotton Cancer Center has begun a one-year pilot program to introduce cancer outpatients and their families to these and other complementary and alternative medicine techniques. The Haelan Program—the word "haelan" means "to make whole" in Gaelic—encompasses a variety of noninvasive procedures that are intended to improve patients' quality of life and allow them to feel like they are a part of the healing process.

The core services of the program so far have been massage and mind-body workshops. Massage services are offered (at no extra charge) to patients in the infusion suite, where chemotherapy is delivered, as well as in the hematology-oncology and radiation therapy areas. The first mind-body workshop ran for six weeks in the spring and included classes on stress management and meditation techniques, plus a visit from a Tai Chi master. A second such workshop will run for eight weeks from September through November.

Deborah Steele, the Cancer Center's patient supportive services coordinator, says these classes are different from the drop-in cancer support groups that Norris Cotton also offers. "Some of the dialogue and interaction may be similar to what you would talk about in a support group," explains Steele, "but because you are learning and experiencing techniques and then sharing them . . . you walk away with something tangible that you can use."

The Friends of the Norris Cotton Cancer Center funded the Haelan Program's pilot year. The hope is that the program can eventually be self-sustaining, with support from some combination of fees and underwriting, and that services such as yoga and acupuncture can be added. G.C.C.

New pancreas club is putting the spotlight on a challenging organ

The pancreas, a fist-sized organ tucked behind the stomach, is rarely talked about by the lay public. People may mention the function (or dysfunction) of their lungs, heart, and intestines. But they pay little heed to the out-of-the-way pancreas.

Its location means that even for medical professionals, it's a challenging organ. At DHMC, though, the pancreas is not getting overlooked. The Dartmouth Pancreas Club (DPC), a newly established collaborative, aims to improve the diagnosis and treatment of pancreatic diseases. The DPC was created earlier this year by Dr. Murray Korc, chair of medicine, and Dr. Hans Fromm, director of DHMC's Hepatopancreaticobiliary Disease Center.

Consisting mainly of cells that make digestive enzymes, the pancreas also contains cells that produce hormones, most notably insulin. This varied function, as well as the organ's location, complicate the diagnosis and treatment of pancreatic disorders. "It's a relatively unique kind of situation," says Korc, a former president of the American Pancreatic Association, because the pancreas "can be affected by so many different conditions and it can mask what's affecting it."

There are similar groups at other medical centers, but "Dartmouth is ideal for fostering programmatic, interdisciplinary interactions," says Korc.

Jennifer Durgin

MARK CORLISS

Cynthia Huntington is New Hampshire's newly named poet laureate.

Dartmouth poet explores illness and self

The scattered scar tissue that blurs Cynthia Huntington's MRI reveals one thing to a radiologist but quite another to Huntington herself. A professor of English at Dartmouth, she describes the sclerosis—in a poem called "A Picture of My Brain"—as "where something that is not me / remakes me from within." The poem appears in her newest collection, *The Radiant*, which contains poems about multiple sclerosis (MS) as well as about the dissolution of a long marriage. Both subjects, says Huntington, address feelings of inadequacy and crisis of identity: "What do you do when all the things you consider to be your identity are stripped from you?"

Huntington, who was named New Hampshire's poet laureate a few months ago, has had relapsing-remitting MS for 15 years. During relapses, new symptoms appear or existing symptoms become more severe. But the disease can also be inactive for months or years. This unpredictability often leads her to distrust her own perceptions.

In her poems, however, she has been able to "get past the angle of the personal problem" with her disease and instead explore the question of self—a universal concern. Huntington says people with an illness want to know not just "'What do I have?' [or] 'What can we do?' but 'What does it mean?'"

Poetry is more about asking such questions than answering them for Huntington. She is fond of a comment made by critic John Berger, who observed that poems "bring a kind of peace. Not by anaesthesia or easy reassurance, but by recognition and the promise that what has been experienced cannot disappear as if it had never been." When she writes or teaches, Huntington explains, she considers "how language can work best to give that shelter to experience, to tend the wounded, as Berger later says, through presence of awareness and the transformation of form." She plans during her five-year term as poet laureate to hold readings and workshops in and out of the state. G.C.C.

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

Alan Eastman, Ph.D., a professor of pharmacology and toxicology, was elected chair of the 2006 Gordon Research Conference on the Molecular Therapeutics of Cancer. He will also be vice chair for the 2005 Gordon Conference on the same topic. Gordon Research Conferences, founded in 1931, are a prestigious international forum in which the most well-known scientists in the world discuss their work. Participants come from academia, industry, and government.

Michael Whitfield, Ph.D., an assistant professor of genetics, was named a V Foundation Scholar; the V Foundation for Cancer Research was funded in memory of famed basketball coach Jim Valvano, who died of cancer. Whitfield is the third V Scholar at DMS in four years: Lawrence Myers, Ph.D., was chosen in 2001 and James DiRenzo, Ph.D., in 2003.

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

William A. Nelson, Ph.D., an associate professor of psychiatry, was recognized by the Veterans

Health Administration with the establishment of the William A. Nelson Award for Excellence in Health Care Ethics.

Jay Buckey, M.D., an associate professor of medicine, was appointed team leader for the Technology Development Team of the National Space Biomedical Research Institute.

Dean Seibert, M.D., an associate professor of medicine, was selected by his alma mater, Albany Medical College, as the recipient of its 2004 Humanitarian Award.

Geraldine Rubin, M.D., an adjunct assistant professor of pediatrics, received a Special Achievement Award from the American Academy of Pediatrics for development of the New Hampshire Health Professionals for Healthier School Nutrition Coalition.

The New Hampshire Pediatric Society presented its Pediatrician of the Year Award to **Charles Cappetta,** M.B.B.S., an adjunct assistant professor of pediatrics, and its Franklin Norwood Rogers Award, for contributions to pediatric causes, to **John Brooks,** M.D., a professor of pediatrics.

Joyce DeLeo, Ph.D., a professor of anesthesiology, received the 2004 Dartmouth Graduate Student Council Teaching Award.

Hussein Samji, a fourth-year medical student, received the François-Xavier Bagnoud Health and Human Rights Essay Award for a paper he wrote on the health impact of incarceration at the United States prison in Guantanamo Bay, Cuba.

DHMC was again ranked among the **Top 50 Hospitals** in the nation by *U.S. News & World Report*—35th in cancer and 39th in urology. The rankings are based on reputation, mortality ratios, nursing proficiency, and availability of key technologies.

For the fifth year in a row, DHMC was included in the list of **Most-Wired Hospitals and Health Systems** by *Hospitals & Health Networks* and was also listed in the journal's **Most Wireless** category.

DHMC received an award in recognition of its excellent organ transplant results from the **Organ Donation Breakthrough Collaborative.**

The American Academy of Family Physicians presented its **Program of Excellence Award** to the DMS Family Medicine Interest Group, for its efforts to stimulate student interest in family practice.

A few facts in a piece on page 11 of our Summer issue bear correction or clarification. The story was about the role played by Dartmouth's Dr. Benita Walton in the creation of Casting for Recovery, a program that runs fly-fishing retreats for breast-cancer survivors nationwide. The name of one of Walton's early Dartmouth supporters was misstated—it was oncologist Letha Mills, M.D., who helped Walton get the program off the ground. And Walton's residency at DHMC was in general surgery, not plastic surgery; she did her plastic surgery training in Madison, Wisc., and Glasgow, Scotland. Finally, Gwen Perkins—whose role in gaining support for the program from the Orvis sporting goods company was noted in the article—"must be considered a cofounder of the program," says Walton. We strive hard for accuracy (dare we say "reel" hard?), and apologize for the errors. ■

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 1979 issue

Exactly 25 years ago, the magazine ran a feature—titled "Horse and Buggy Medicine"—drawn from a collection of letters in the DMS archives. They'd been written during the early 1880s by a recent graduate of the Medical School, Dr. John Henry, to his fiancée; Henry, who'd been valedictorian of the Class of 1880, had taken over a small-town practice in West Fairlee, Vt., and his wife-to-be was located in Winchendon, Mass.

"September 11, 1881: Last night I was called out to attend a broken leg about 10:00 in the evening, then routed out at 6:00 this morning to see another patient, and I have just come in from a case that has kept me since 4:00.

"September 18, 1881: My work is getting the best of me. I have several new cases of typhoid and one of typhoid-pneumonia on my hands. Also plenty of others. Last night I did not get to bed till nearly midnight and did not have one spare minute either. Today has been the same—I started at 6:30 and rode six or seven miles before breakfast and made three or four visits.

"September 25, 1881: I think that I shall get about $100 cash for September from all my work—about half of that from my monthly payroll and the rest from my side business. . . . I have got the handsomest set of tooth forceps that you ever saw. I had them all nickel plated last week. . . . There are seven pairs, and they are all beauties.


Dr. Henry, ca. 1880

"October 16, 1881: I caught cold last Thursday. Friday I had a hard day's work—much more than I wanted. Was called up at 6:00 and did not get to bed until just past midnight. Yesterday I rode all night in the rain, and that didn't improve my cold.

"October 23, 1881: They have kept me too busy for the past week to give any time to letter-writing—or to anything else, in fact. I have been about half-killed with work. There has been a constant stream of sickness for the last seven days, so much that I have been obliged to neglect someone every day.

"November 6, 1881: I don't know how much longer I can manage to exist if this run of work continues at the present rate. I now have 10 cases of fever. . . . One day last week I saw and prescribed for almost 50 patients and I guess the average for the past three weeks has been 20 per day. . . . I never realized before what a dog's life a physician must lead."