A matchless result on Match Day for the DMS Class of 2000

How much can a plain #10 envelope hold? Three to seven years of your life, if you were a fourth-year medical student in Auditorium G at DHMC on March 16—Match Day.

Sealed in the envelopes in question were the names of the residency programs where the students would go for the next stage of their training. They had applied back in the fall to programs in the specialty of their choice and gone to interviews across the country. Then in February, they'd submitted to the National Resident Matching Program (NRMP) rank-ordered lists of their choices. After that, the students had to wait until Match Day to learn where they would spend the next phase of their careers—their futures quite literally out of their hands until they got those envelopes.

Tension: So the tension was understandable. Imagine getting a report card, a college admission letter, a housing assignment, and a promotion all in one envelope. The stress manifested itself in the ways classmates greeted each other as they trickled into the room a little before noon. Hugs rather than handshakes were the order of the day. And lots of voluble chatter. Everyone sought out someone with whom to commiserate. Some took the time to search out a lucky seat, but then couldn't sit still in it.

As 12:00 EST neared, the hour when the NRMP envelopes are distributed nationwide, the auditorium was brimming with students and interested observers. The tension seemed to be just barely contained, as if it were under pressure. A note on the blackboard said "Party Tonight." But clearly the celebrating was on hold until after those envelopes were handed out.

Walter Chang, a graduating senior, described the Match as an extremely anxious process. He said he "got really nervous" as he composed his rank-ordered list, but found it equally "scary" once the list was out of his hands and in the clutches of the NRMP computer.

Crescendo: The voices in the room were rising to a crescendo of speculation, worry, and anticipation, when Assistant Dean Susan Harper, M.D., and Dean John Baldwin, M.D., silenced the crowd by indicating they were almost ready to distribute the envelopes. But first, each wanted to say a few words.

Harper commended the students for all of the hard work they'd invested to reach this point. She said they had an "incredible opportunity ahead" and announced that 90% of the class would be going to one of their top three choices. And a "resounding" 73% had matched at their first-choice program. Suddenly, much of the nervous energy tipped over into excitement as the students realized that their odds were extremely good of having made a desirable match.

Baldwin commented that he was "excited for each of you individually, as a group, and for the School. I hope you remember

FACTS & FIGURES

Some Sleep Statistics

8
Minimum recommended hours of sleep per night for an adult

6.9
Actual hours of sleep per weeknight for the average American adult

33
Percentage of adults who sleep less than 6.5 hours per night

62
Percentage of adults who experience sleep problems at least two nights per week

2
Number of sleep centers in the U.S. when DHMC's Sleep Center opened in 1971

474
Number of sleep centers in the U.S. today

10,000
Approximate number of sleep studies conducted by the DHMC Sleep Center since 1971

1
Rank of sleep apnea (momentary cessation of breathing during sleep) among all diagnoses at the DHMC Sleep Center

Sources: American Academy of Sleep Medicine, National Sleep Foundation, DHMC Sleep Center

the importance of Dartmouth," he added, "as your family."

He then called out the name on the first envelope in his hand. The envelopes had been randomized so no one knew how long the wait would be. But to compensate the last one called, each student dropped a dollar in a basket on the way to the front; the accumulated prize would go to the unlucky/lucky last person. It was a DMS Match Day ritual established as one way of mitigating the stress.

Support: One by one, the students walked down the stairs to put a dollar in the basket and receive their envelope. The crowd cheered and applauded as each classmate shook hands with one of the deans. The support from 50-some other people in the same situation clearly helped, and the students seemed genuinely buoyed by it as they strode to the front of the room.

After finally getting the envelope in hand, however, almost all the students waited a minute more before opening it, walking back to their seats and hollowing out a private space first. Those who were there with a spouse, or someone else whose life would also be affected by the envelope's revelation, huddled together to take a look at their joint future. Then they turned back to their classmates to share the news and celebrate.

But a few couldn't hold back their excitement. Travis Matheney, president of the Student Government, gave out a robust "Yee-hah" upon learning that he had matched with Harvard's orthopedic surgery program.

Outgoing graduates

The DMS '00s who are doing residencies next year, and the programs that they will be going into, are:

Anesthesiology
Carlos Cream, *Geisinger Med Ctr (Penn State)*

Emergency Medicine
Matthew Collins, *Maine Med Ctr (U of Vermont)*
John Lemery, *NYU Med Ctr*
Kristina Parisien, *Brigham & Women's Hosp (Harvard)*
Kaushal Shah, *Beth Israel-Deaconess Med Ctr (Harvard)*

Family Practice
Flora Brewington, *NH-Dartmouth Fam Prac Prog*
Andrea Brown, *Maine Med Ctr (U of Vermont)*
Eric Grasser, *Northern New Mexico Fam Prac (U of New Mexico)*
Kristine Parke, *Greater Lawrence Fam Health Ctr (Tufts)*
Elisa Thompson, *Eastern Maine Med Ctr (Tufts)*

Internal Medicine
Pascale Anglade, *New York Presbyterian Hosp (Cornell)*
Mark Brauning, *Beth Israel-Deaconess Med Ctr (Harvard)*
Derik Davis, *National Naval Med Ctr*
Ross Downey, *Stanford U Prog*
Stevan Gonzalez, *New York Presbyterian Hosp (Cornell)*
Maya Mitchell, *UC Davis Med Ctr*
Khang Nguyen, *George Washington U Prog*
Kirsten Teaney, *New England Med Ctr (Tufts)*
Leah von Reyn, *Geisinger Med Ctr (Penn State)*

Internal Medicine-Emergency Medicine
Charles Wira, *Henry Ford Hosp (Case Western Reserve)*

Internal Medicine-Pediatrics
Kaochoy Saechao, *U of Southern California Prog*

Internal Medicine (Preliminary)
Karin Giordano, *Mayo Graduate Sch of Med*
Thomas Golembeski, *Mount Auburn Hosp (Harvard)*
Cynthia Stearns, *Kaiser Permanente Med Ctr (UCSF)*
Melissa Thibault, *Fletcher Allen Health Care (U of Vermont)*

Internal Medicine (Primary Care)
Andrea Cedfeldt, *Oregon Health Sciences U Hosp*
Deborah Esteves, *Cambridge Hosp-Cambridge Health Alliance (Harvard)*
Christine Mackey, *Brigham & Women's Hosp (Harvard)*
Elizabeth Wolfe, *Dartmouth-Hitchcock Med Ctr*

Obstetrics-Gynecology
Jennifer Eggers, *Maine Med Ctr (U of Vermont)*

Orthopedics
Michael Betsy, *Mount Sinai Med Ctr*
Travis Matheney, *Harvard Combined Prog*
Christopher Vinton, *U of Massachusetts Prog*

Pediatrics
Robyn Byer, *Boston Combined Peds Res (Harvard)*
Betsy Liolios, *Massachusetts General Hosp (Harvard)*
Hilary Murnane, *Wright State U Prog*
Gira Shah, *Rhode Island Hosp (Brown)*
Joseph Vitterito, *Rhode Island Hosp (Brown)*
Phoebe Yager, *Massachusetts General Hosp (Harvard)*

Pediatrics-Psychiatry
Jonathan Birnkrant, *Rhode Island Hosp (Brown)*

Plastic Surgery
Walter Chang, *Dartmouth-Hitchcock Med Ctr*
Alexandra Schmidek, *Brigham & Women's Hosp (Harvard)*

Psychiatry
Karleyton Evans, *Massachusetts General Hosp (Harvard)*
Lisa Thomas, *U Health Ctr of Pittsburgh (U of Pittsburgh)*

Surgery
David Chismark, *Albany Med Ctr (Albany Med Coll)*
James Feeney, *St. Vincent's Hosp (NY Med Coll)*
Allison Fegley, *Strong Memorial Hosp (U of Rochester)*
Keith Fournier, *Eastern Virginia Med Sch*
Eva Galka, *Geisinger Med Ctr (Penn State)*
Vladimir Grigoryants, *U of Michigan Hosps*
Rajdeep Sandhu, *U of Nebraska Affiliated Med Ctr*
Thomas Stamp, *Wright-Patterson Med Ctr (Wright State)*
Derek Woodrum, *U of Michigan Hosps*

Surgery (Preliminary)
Adrian Rossi, *Strong Memorial Hosp (U of Rochester)*

Transitional
Ricardo Aviles, *Tucson Med Ctr (U of Arizona)*
Nepenthe Fong, *Santa Clara Valley Med Ctr (Stanford)*
Jon Gilbert, *Andrews Air Force Base*
Joshua Sparling, *Walter Reed Army Med Ctr*

This year's Brown-Dartmouth graduates plan to go into the following residency programs next year:

Internal Medicine
Sarasa Kimata, *Temple U Hosp*
Tony Wong, *Kaiser Permanente Med Ctr-Oakland (UCSF)*
Annoe Yabes, *Kaiser Permanente Med Ctr-Oakland (UCSF)*

Internal Medicine (Preliminary)
Gregory Fauteux, *Brown U Prog*
John Shen, *Brown U Prog*
Internal Medicine (Primary Care)
Samuel Gurevich, *Yale-New Haven Hosp*
Danielle Marder Walker, *NYU Med Ctr*
Obstetrics-Gynecology
Suzanne Strubel-Lagan, *Women & Infants Hosp (Brown)*
Orthopedics
Eric Walsh, *Rhode Island Hosp (Brown)*
Pediatrics
Juliette Gustin, *Maine Med Ctr (U of Vermont)*
Jason Hann-Deschaine, *Thomas Jefferson U-duPont Hosp for Children*
Michele Mathieu, *Rhode Island Hosp (Brown)*
Plastic Surgery
Lenny Lu, *McGaw Med Ctr (Northwestern)*
Psychiatry
Edward Maxwell, *UCSF Med Ctr*
Radiology
Charles Shen, *Bridgeport Hosp (Yale)*
Surgery (Preliminary)
Stephen Cobery, *National Naval Med Ctr*

In addition, these students have already been accepted into advanced programs that they will start in 2001:
Anesthesiology
Thomas Golembeski, *Brigham & Women's Hosp (Harvard)*
Dermatology
John Shen, *Roger Williams Med Ctr (Boston U)*
Neurology
Karin Giordano, *Mayo Graduate Sch of Med*
Neurosurgery
Stephen Cobery, *Rhode Island Hosp (Brown)*
Ophthalmology
Ricardo Aviles, *Texas Tech U Health Sciences Ctr*
Physical Medicine and Rehabilitation
Melissa Thibault, *U of Washington Affiliated Hosps*
Radiology (Diagnostic)
Nepenthe Fong, *Stanford U Prog*
Cynthia Stearns, *Mount Auburn Hosp (Harvard)*
Urology
Adrian Rossi, *Strong Memorial Hosp (U of Rochester)*

Incoming residents

The first-year residents starting at DHMC this summer, and the medical schools from which they received their degrees, are:
Anesthesiology
Geoffrey Henson, *Med Coll of Georgia*
Scott Irvine, *Texas Coll of Osteopathic Med*
Phillip Mickelsen, *U of Colorado Sch of Med*
Brian Spence, *U of Rochester Sch of Med and Dentistry*
Family Practice
Joseph Deveau, *East Carolina U Sch of Med*
Walter Doerfler, *U of New England Coll of Osteopathic Med*
William Farmer, *Loma Linda U Sch of Med*
Melanie Lawrence, *U of Vermont Coll of Med*
Internal Medicine
John Araujo, *Loyola U Stritch Sch of Med*
Brendan Cavanaugh, *Rush Med Coll*
Gilbert Fareau, *Trinity Coll (Ireland)*
Timothy Gardner, *U of Connecticut Sch of Med*
Michael Greene, *U of Connecticut Sch of Med*
Scott Hines, *Bowman Gray Sch of Med*
Randy Hoover, *East Tennessee State U*
Gordon Juriansz, *Loma Linda U Sch of Med*
Jennifer Lee, *Tulane U Sch of Med*
Stephen Liu, *Eastern Virginia Med Sch*
Clifford Miles, *U of Nebraska Coll of Med*
Martin Rhee, *Seoul National U (South Korea)*
Brian Schwender, *St. George's U Sch of Med (Grenada)*
Tatum Simon, *Louisiana State U Sch of Med*
Michael Tamber, *Tulane U Sch of Med*
Dimitrios Tzachanis, *Aristotelian U of Thassaloniki (Greece)*
Marc Voelkel, *U of Colorado Sch of Med*
Andrew Werchniak, *U of Virginia Sch of Med*
Internal Medicine (Primary Care)
Lisa Carlson, *Johns Hopkins U Sch of Med*
Kevin Silva, *U of Texas Med Sch at Galveston*
Jennifer Wise, *McGill U*
Elizabeth Wolfe, *Dartmouth Med Sch*
Obstetrics-Gynecology
Paula Bednarek, *Northwestern U Med Sch*
Paula Miner, *SUNY Health Science Ctr at Syracuse*
Mareca Pallister, *U of Utah Sch of Med*
Margaret Scannell, *Tufts U Sch of Med*
Pathology
Oyedele Adeyi, *U of Ibadan (Nigeria)*
Cara Hall, *Dartmouth Med Sch*
Leonard Leyba, *U of New Mexico Sch of Med*
Pediatrics
Jodi Carter, *U of Arizona Coll of Med*
Stacie Colwell, *U of Illinois Coll of Med*
Leila Hall, *U of Colorado Sch of Med*
Benedikt Kurz, *U of Colorado Sch of Med*
Heather Schlott, *Brown U Sch of Med*
John Su, *U of Texas Med Sch at Houston*
Plastic Surgery
Walter Chang, *Dartmouth Med Sch*
Psychiatry
Rebecca Hirsch, *U of Chicago Pritzker Sch of Med*
Madhavi Kamireddi, *Maulana Azad Med Coll (India)*
Frank Katz, *New York Med Coll*
Naomi Mendelovicz, *Albany Med Coll*
Robyn Ostrander, *Harvard Med Sch*
Hyung Park, *Meharry Med Coll*
Surgery
Michael Bojalian, *Memorial U of Newfoundland*
Jorge Brito, *Stanford U Sch of Med*
David Brown, *UC Davis Sch of Med*
Gerald Khachi, *National U of Ireland*
Fawad Khawaja, *American U of the Caribbean*
Kenneth Kolbeck, *U of Illinois*
Kendall Lee, *Yale U Sch of Med*
Eric Marsh, *Ohio State U Coll of Med*
Erin Rowell, *Med U of South Carolina*
Thomas Schwaab, *Med Sch of Hannover (Germany)*
Freeman Suber, *U of Virginia Sch of Med*
Brent White, *Duke U Sch of Med*

Chang was pleased to learn that he was one of the great majority who got their first choice; he'll be going into plastic surgery at DHMC. "It turned out great," he said with a smile of relief.

Sixty students were expected to graduate in June. Of those, 52 participated in the Match; in addition, one student who graduated in December participated. The 73% who received their top choice was well above the national average of 62%; 13% received their second choice and 4% their third choice. The most popular specialties were internal medicine, surgery, and pediatrics. Four students entered military programs (which are handled outside the Match), three are deferring residency, and one accepted a non-NRMP position. (All the graduates who are doing residencies next year are listed in the box on pages 4 and 5.)

Dispersing: The '00s will be dispersing to 18 states, with the largest numbers heading for Massachusetts (15), New York (8), and California (5).

But they were all together for Match Day. As the ceremony continued, those who already had their envelopes stayed and cheered for those still waiting. The last few survivors began voicing the hope that theirs would be the final name called so they'd get the basket of money. The number of unenlightened dwindled until, finally, Thomas Golembeski got the consolation prize—together with the news that he'd be doing internal medicine at Harvard's Mount Auburn Hospital.

It was over. The students all knew where they'd be spending the next few years of their life. They milled about and shared their news. Rounds of "Congratulations," "Awesome," and "Go, girl" filled the room. The auditorium remained almost full for a time, as everyone savored the release of the morning's tension. Then the students slowly filtered out of the room, heading for their futures and, presumably, that party.

ALL: MARK AUSTIN-WASHBURN

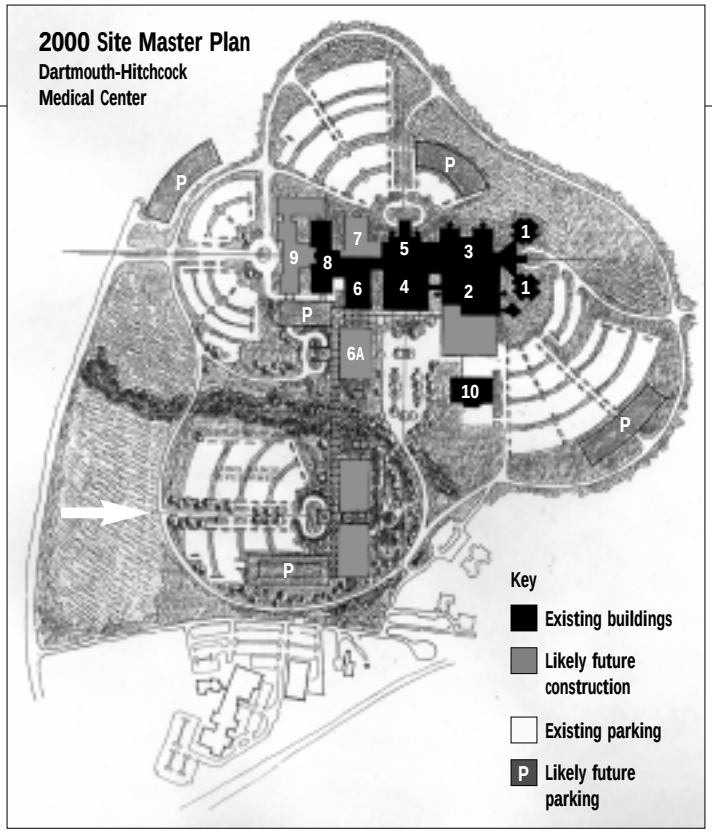
Typically, Match Day's anticipatory tension soon dissolves into celebratory relief. Top, Assistant Dean Susan Harper (left) and Dean John Baldwin (right) hand Mark Brauning the envelope telling him he matched in internal medicine at Harvard's Beth Israel-Deaconess Medical Center. Above, Derek Woodrum (center) and Robyn Byer (left) share the news that they're headed, respectively, for surgery at the University of Michigan and pediatrics at Harvard. And at right, Maya Mitchell (facing the camera) and Kaushal Shah celebrate their matches in internal medicine at UC Davis and emergency medicine at Beth Israel-Deaconess.

Incoming: The program directors at DHMC were also sweating out the Match, from the other side. Though it was a less personal process for them, they still felt some stress. Judy Csatari, who manages the Match for the Department of Medicine, likened her feelings to a heart palpitation. For her, the big moment came a couple of days before the students', when she found out whether the internal medicine residency program had attracted enough students to fill all of its positions. It did, and Csatari was "thrilled to have filled." (All the incoming residents, and the medical schools they graduated from, are listed in the box on page 5.)

In fact, 30 of the 32 programs at DHMC filled all their spots. And according to H. Worth Parker, M.D., director of graduate medical education, the other two managed to find excellent candidates outside the Match. Parker reported that the "quality of candidates remains high. They are from every region of the U.S. and several foreign nations. . . . Overall we are delighted with the March 2000 Match."

Jonathan Weisberg

DHMC updates its master plan in the face of space needs



COURTESY SHEPLEY BULFINCH RICHARDSON AND ABBOTT

The latest iteration of Dartmouth-Hitchcock Medical Center's site master plan shows the placement of various projected new buildings and of more parking (the latter most likely in multilevel structures of some sort), as well as a likely location for long-range development (indicated with the white arrow in the lower left); the loop road currently runs inside this area.

"It's no secret to anyone that we're out of space," says Susan Reeves, vice president for neuroscience, orthopedics, rehabilitation, and emergency services at DHMC. She and Frederick Nothnagel, vice president for facilities management, are working together to help DHMC address the need for new clinical, administrative, educational, and research space.

Since the 1991 move to the Lebanon campus, DHMC has experienced "major growth in outpatient volume, interventional procedures, imaging modalities, and care management," according to Reeves. She says the Emergency Department, the dialysis facility, and the infusion suite all require expansion as well and that inadequate parking is a problem, too.

Updated: The DHMC master plan is updated every five years. The new plan that Reeves and Nothnagel are working on represents a major departure from the previous plan. When the last one was done, in 1994, "there were no pressing space issues," says Reeves. It "represented a futuristic 'what do we think health care is going to look like'" view.

Some elements of the 1994 plan have been completed (including construction of a hangar for the Dartmouth-Hitchcock Air Response Team (DHART) helicopter and of an office building on nearby Mount Support Road), while other needs (like a health club and an inexpensive place for patients and family members to stay) have been met by private businesses.

But with outpatient volumes increasing two percent a year, DHMC is running out of space to handle the growing demand. And even though inpatient volumes have dropped—the number of hospital beds has decreased from 392 in 1991 to 335 today—that decline has done little to alleviate the space crunch. The overall increase is attributable to the growing number of older Americans, to population increases in the Upper Valley, and to new technology that allows procedures which once required hospital stays to be performed on a same-day basis.

In the Emergency Department alone, 20,000 visitors are expected this year, compared to 17,000 in 1993. Key reasons for that increase, says Reeves, include the addition of the DHART helicopter service; more seasonal visitors to the region; an especially bad flu epidemic this year; the aging population; and the fact that small hospitals without the resources to keep sicker patients increasingly send them to DHMC.

Focus groups: As part of the current planning process, several different focus groups met last fall. Ten provider cluster groups reviewed demographic, market, and technology trends; growth projections; preferred practice models; and space needs. Three patient focus groups—one made up of DHMC patients, another of patients of the Dartmouth-Hitchcock Community Health Center (an off-site primary care practice), and one of people who receive their care elsewhere—discussed their expectations for health care. And three academic cluster groups looked at trends in academic medicine; characteristics of the research and educational environment; and existing space deficiencies.

Timeline: Although there's no firm timeline for construction, and any plans will be subject to approval through the state Certificate of Need process, Nothnagel says the immediate priorities are to increase the space for ambulatory care near Building 6 (possibly by constructing Building 6A) and to extend Building 2 (the diagnostic and treatment building, which includes the Emergency Department and the OR and radiology areas). The plan for increasing parking capacity currently calls for building multilevel parking structures of some sort.

Future plans include more space for DMS—Buildings 7 and 9—as well as possible construction in a now-undeveloped area of the campus.

The site master plan represents a "road map for future construction," says Nothnagel. But, he adds, health care may become more centralized or more home-based. "The need [for still more space at DHMC] may never develop. We just don't know."

Laura Stephenson Carter

Resonating tattoos interest radiology researcher Swartz

MARK AUSTIN-WASHBURN

Hal Swartz works on one of his tattooed volunteers, in an effort to use the carbon particles in tattoo ink to measure the oxygen content of tissues.

"Do you have a tattoo on your lower arm or leg? Volunteers needed for a developing medical research device." So read a rash of bright-orange notices recently posted in the hallways of DMS. Any students so adorned were asked to contact Harold Swartz, M.D., Ph.D., a professor of radiology and of physiology who also has adjunct appointments in engineering and chemistry.

The bulletin boards of a medical school might seem an unlikely place to troll for what were once the hallmarks of society's fringes. Tattoos are much more common on college campuses than they used to be, however, and Swartz has found several willing subjects. But what would a radiology researcher want with college students who could audition—sans makeup—for Tennessee Williams's *Rose Tattoo* or Ray Bradbury's *Illustrated Man?*

Carbon: Swartz's interest has to do with carbon—the primary component of the India ink used for tattoos. Carbon, it turns out, allows researchers to determine the concentration of oxygen in cells, which can be valuable information because well-oxygenated tissues respond better to radiation therapy.

After earning his M.D. at the University of Illinois, a master's in public health at the University of North Carolina, and a Ph.D. at Georgetown, Swartz plunged into what is still his consuming research interest—magnetic resonance. Atoms and molecules are hotbeds of magnetic spin systems, which can absorb energy at specific resonant frequencies when placed in an externally generated magnetic field. When the external frequency is in synchrony with the natural energy levels that are separated by the external magnetic field, unique signals are generated that make it possible to study precise structural features of the atom or molecule.

For example, nuclear magnetic resonance reveals not only the presence of an atomic nucleus, but also details about its interactions with other nuclei nearby. Similarly, an electron has magnetic properties by virtue of orbital rotation about its nucleus and also due to rotation, or spin, about its own axis.

Resonance: Swartz has specialized further in the resonance of unpaired electrons, which exist in free radicals—especially reactive atoms. This area of study is known as electron paramagnetic resonance (EPR). A singular advantage of this methodology in theory is that it can ignore everything else present in a complex mixture and hone in precisely on the free radical species.

Molecular oxygen is actually a stable diradical, and therefore it will readily interact with other free radical species in the body. Measuring these radical species provides indirect measurement of the oxygen tension at various anatomic sites. Methods for measuring oxygen tension in vivo have been sought for a variety of clinical purposes for some time.

Swartz's group has experimented with several paramagnetic oxygen sensors over the years, and the one that seems to have the most desirable properties is elemental carbon in the form of microparticles. The team first performed experiments in animals, finding that carbon particles injected into various anatomic sites gave the appropriate signals for trapped oxygen free radicals and that the signals varied in intensity as the oxygen tension was modified.

In most locations in the body, however, carbon particles tend to be cleared by the immune system, so Swartz went in search of a site that would be cleared more slowly or not at all. Once the idea of skin presented itself, several other aspects of the study fell into place: India ink is an aqueous suspension of lampblack, which is basically fine particles of carbon, and one of the incidental uses for India ink is as the blue-black pigment in tattoos. Although other colors are often used in tattoos, the outline and sometimes the entire pattern is made with India ink.

Plan: The eventual plan is to implant at several sites a "medical tattoo"—a small, perhaps barely visible deposit of India ink at a slightly greater depth in the skin than a conventional tattoo. These deposits could conceivably remain in place over a lifetime, permitting measurements of oxygen tension whenever they are needed. The fact that India ink has been used extensively in human subjects, not only for tattooing but also to mark surgical fields and to trace lymphatic systems, makes it likely that approval for its use in human subjects will not be a problem. There are other, perhaps even better, sensors available, but the Food and Drug Administration would likely require more extensive and prolonged testing before

approving any new substance.

A significant application of this technique would be in the management of peripheral vascular disease. Although many different approaches are available to manage this complex condition, it has been difficult in the past to evaluate their relative effectiveness. With continuous, minute-to-minute readings of the actual oxygen tension in tissues at several sites, as opposed to measurements of the oxygen saturation of the blood, it should become much easier to identify those interventions that are truly effective.

Application: Swartz anticipates, however, that the major application of this technique will be in optimizing radiation treatment for cancer. Tumors are highly variable in their response to radiation. If one irradiates 100 tumors of similar size, a certain percentage will vanish completely and a certain percentage will not respond at all.

Tissue oxygen tension appears to be one of the major variables accounting for this difference. The higher the oxygen tension in the tumor, the more favorable is the response to radiation. This effect apparently has to do with there being more opportunities for efficient DNA repair mechanisms at low oxygen tension. If India ink were inserted directly into a tumor, the radiation therapist could deliver treatment at periods coinciding with high oxygen tension.

In the meantime, Swartz has a continuing need for highly decorated volunteers.

Roger P. Smith, Ph.D.

JON GILBERT FOX

DHMC's wooded setting inspires a poem

'I'm not really a poet, I just occasionally burst forth," says Virginia Little (pictured above), the author of "Road Map to the Hospital." She has lived in Hanover, N.H., for the past six years—at Kendal, a retirement community—but she spent most of her life in urban and semi-urban areas. She was inspired to write the poem about DHMC, she says, because "I wasn't used to approaching a hospital through a virgin forest."

When she was considering the move north from Tenafly, N.J., a friend helped her secure her apartment at Kendal. "I took it sight unseen," Little says. "I've been very glad ever since."

Little was born in England, but moved to Granville, Ohio—where her parents were from—when she was a year and a half old and lived there until she was 12. Her next move was to New York City. "It was during World War I," she says. She earned a B.A. in English from New York University, worked for 25 years as a distribution manager for the Industrial Press, a technical-book publishing company in New York, and then spent 12 years as a reference librarian in Englewood, N.J.

"I've done a little writing," she admits, and has had two or three "slightly amusing essays," published in *House Beautiful* and the *Christian Science Monitor*. When she's not writing, Little can often be found painting, and her colorful landscapes and still lifes grace her apartment walls. Maybe a painting of DHMC's forested environs will be her next creative effort . . .

Road Map to the Hospital

From Highway One-Twenty, drive off to the right
And follow the road where the woods come in sight.
There the towering oaks and the hemlocks appear—
Why, Pocahantas herself would be at home here!
The forest primeval? No, the Clinic's not far,
In the massive domain where the health-givers are.
On through thicket and glade, in the sunshine and shade,
The trees touched with sun, all golden and jade,
Past the woods to the sign for Parking Lot B:
You are there. You've arrived! You're at DHMC!

What really works? Study hopes to solve back-pain conundrum

In spite of the fact that back pain is one of the most common ailments in modern society, there is little evidence about how best to diagnose and treat it. A new study directed by James Weinstein, D.O., M.S., medical director of DHMC's Spine Center, promises to answer at least part of the back-pain conundrum: are non-surgical treatments as successful as back surgery?

Funding: The study, called SPORT (Spine Patient Outcomes Research Trial), is supported by a $14.5-million grant from the National Institutes of Health, one of the largest grants ever awarded to DMS.

According to the *Dartmouth Atlas of Health Care*, the likelihood that a Medicare enrollee will undergo surgery for back pain varies by a factor of six—from 1.4 per 1,000 enrollees in the Bronx, N.Y., to 8.6 per 1,000 in Bend, Ore. What accounts for the differences? Researchers are convinced it isn't varying rates of disease. "We believe it's more a question of where you live and what doctor you consult," Weinstein says, "and that the differences we see reflect regional differences in medical opinion about what works."

The Dartmouth-led study expects to enroll 1,450 patients (between 200 and 300 of them at DHMC) at 11 medical centers nationwide. The patients will be randomized to receive either surgical or nonsurgical treatment.

Nonsurgical options include bed rest, physical therapy, exercise, injections, oral anti-inflammatory drugs, and other non-narcotic medications.

The primary criteria for participation in the study are diagnoses of herniated disc, spinal stenosis, or degenerative spondylolisthesis; symptoms of low-back pain radiating into the buttock, thigh, or leg on walking or sitting; or loss of sensation or weakness in the leg. Those who have had previous back surgery and pregnant women will be excluded from the study.

The researchers will then collect data on participants' health status, ability to function, satisfaction with their health, and subsequent utilization of healthcare services. In addition, an attempt will be made to estimate the direct and indirect costs of each case of back pain (indirect costs include such things as days of missed work). The goal is to develop a cost-benefit ratio: how much does alleviating back pain cost and which treatment gives better "bang for the buck," according to Weinstein, a professor of surgery at DMS.

Satisfaction: Because not all patients will want to be randomized, an additional 1,800 will be allowed to make their own treatment choices but will be followed similarly. Data on how satisfied patients are with a choice they've made themselves can then be compared to satisfaction among randomized patients.

Weinstein—whose general reluctance to treat back pain surgically is reflected in the relatively low rate of back surgery locally (2.1 per 1,000 Medicare enrollees, compared to a national average of 3.1)—is also director of DHMC's Center for Shared Decision-Making. There, patients can get information about their condition, data about the likely outcomes of various treatment options, and support for being part of a decision-making team with their doctors.

"We're trying to help patients become better consumers of health care," says Weinstein, "by giving them enough information that they can participate in decision-making in an informed way. SPORT will give us valuable information about the outcomes of back surgery, so that people with low-back pain can make choices based on the best scientific evidence of . . . what the trade-offs are among the various treatment options."

Megan McAndrew Cooper

FLYING SQUIRREL GRAPHICS

Jim Weinstein makes no bones about his hope of better understanding how to treat back pain.

Economic cost of osteoporosis gains national attention

Osteoporosis, the most common of all bone diseases, affects millions of Americans and costs billions of dollars a year but is only beginning to get the attention it deserves, believes a Dartmouth researcher. Anna Tosteson, Sc.D., an associate professor of medicine and of community and family medicine, has been studying the economic impact of the debilitating disease for more than a dozen years.

Experts: Recently, Tosteson's work was factored into the recommendations of a national panel that was charged with evaluating the latest scientific information on the disease. She was one of several national and international experts brought in to advise the National Institutes of Health (NIH) Consensus Development Conference on Osteoporosis Prevention, Diagnosis, and Therapy.

Considering the economic implications of a disease is a relatively new venture for NIH consensus panels, about half a dozen of which are convened each year. But with health-care providers under pressure to maximize limited resources, there is increasing recognition of the need for informed research concerning the cost-effectiveness of different prevention and disease-management methods.

Osteoporosis—which comes from the Greek for "porous bone"—is characterized by a decrease in bone density, which results in an increased risk of fractures. Although some thinning of the bones accompanies aging, abnormal bone loss can have serious consequences. The disease itself has no obvious symptoms; it is the threat of broken bones that makes it so devastating. Fractures, especially of the hip, can result in chronic pain, disability, and even death. Studies show that 80% of women 75 and older would prefer death to a bad hip fracture that requires placement in a nursing home.

The prevalence of the disease is on the rise. Currently, at least four to six million women and one to two million men have osteoporosis. But, says Tosteson, "because the elderly population is expected to double by the year 2025, if nothing is done the number of persons affected by osteoporosis will dramatically increase.

"From a public health and policy perspective," she adds, "these projections make it imperative that we understand the overall costs of osteoporosis and identify economically sound approaches to osteoporosis prevention and treatment."

Preventable: The good news about osteoporosis is that it is largely preventable. An adequate intake of calcium and vitamin D are crucial to preserving bone mass throughout life, according to the NIH consensus panel. The National Osteoporosis Foundation recommends taking at least 1,200 mg of calcium and 400 to 600 units of vitamin D a day. Regular weight-bearing exercise can also help prevent osteoporosis and may reduce the

risk of falls in older individuals.

A widely held misconception about osteoporosis is that it only affects postmenopausal white women. Although males and non-white women are at less risk, the disease knows no racial or gender barriers.

"Osteoporosis occurs in all populations and at all ages and is a devastating disorder with significant physical, psychosocial, and financial consequences," said the consensus panel's chair, Anne Klibanski, M.D., a professor of medicine at Harvard.

In her presentation to the panel, Tosteson outlined two forms of research used to do economic evaluations: cost-of-illness studies and cost-effectiveness studies.

Studies: Cost-of-illness studies estimate the total economic burden of a disease in a defined population. For osteoporosis, Tosteson says, the cost is $16 billion per year and climbing. And, she adds, $16 billion is a conservative figure, since it doesn't consider less quantifiable costs such as diminished quality of life and increased pain and suffering. By 2025, osteoporosis could cost the nation upwards of $45 billion a year. "With the size of the elderly population set to approximately double in 25 years," says Tosteson, "the $45-billion figure is not inconceivable."

In contrast, cost-effectiveness analysis (CEA) assesses the relative value of the available prevention and treatment interventions. "The rationale for CEA is that with limited resources, each expenditure should provide a benefit worth its additional cost," says Tosteson. Although they are controversial as a method for establishing treatment guidelines, such studies can be valuable as a way to highlight the most efficient opportunities for prevention and treatment, she explains.

Resources: "Cost-effectiveness information is rarely or never used as the sole determinant for health-care resource allocation decisions," says Tosteson. "The point of cost-effectiveness analysis is to highlight our best opportunities for improving health and to allow us to make the most of our limited resources."

Tosteson, who is affiliated with Dartmouth's Center for the Evaluative Clinical Sciences, is the principal investigator of an NIH-funded study of osteoporosis. Her early work focused on the cost-effectiveness of bone density screening, and her recent research has involved the health and economic consequences of fractures due to osteoporosis.

Sara Connolly

DHMC pioneers two new treatments for chronic heartburn

A miniature sewing machine and a miniature microwave replace scalpels and needles in a pair of innovative surgical treatments for a common disorder. The two new devices are being used at DHMC to treat acid reflux, the primary cause of heartburn. They offer a permanent cure for the disorder in an hour-long, outpatient procedure.

Richard Rothstein, M.D., an associate professor of medicine at DMS and chief of gastroenterology at DHMC, was the first physician in the country to use the two devices.

Acid reflux, also called gastroesophageal reflux, affects 17 million Americans. Heartburn symptoms result when the lower sphincter of the esophagus fails to block stomach acids and digestive enzymes from leaking out of the stomach, allowing these irritating substances to flow up into the throat and mouth.

FLYING SQUIRREL GRAPHICS

DHMC gastroenterologist Richard Rothstein was the first physician in the country to use this device, which offers a permanent cure for heartburn in an outpatient procedure.

Until recently, the only recourse for people with chronic heartburn was either laparoscopic surgery—repair of the defective sphincter through a small incision in the abdomen—or acid-suppressing medication. Although these treatments show success rates of 90 to 95%, the impermanence and ongoing cost of antacids and the high cost, side effects, and physical pain of surgery prompted the invention of the new devices.

Stitches: The miniature sewing machine, called Bard Endoscopic Sewing System, was developed in 1991 by a British gastroenterologist, Dr. Paul Swain. Swain attached a sewing device to the tip of an endoscope—a tube equipped with fiberoptics that can be snaked through the body's own natural openings and cavities. This allows doctors to operate on the esophagus through the mouth.

During the procedure, several stitches are placed just below the stomach's junction with the esophagus. The procedure takes about an hour, and patients can go home the same day with no restrictions on activity or diet.

In March 1998, Dartmouth became the first place in America to test endoscopic sewing on a human. Subsequently, seven other medical centers became involved in a cooperative study

to assess the safety and utility of the procedure as a treatment for heartburn symptoms. The study included 64 patients, and endoscopic sewing proved to be safe and effective for over two-thirds of them.

The procedure has now received FDA approval, and demand for it has grown. "There have been 30 to 50 patients who have already called in the first week after the FDA approved it," says Rothstein.

Heat: The microwave device, called Stretta, was created by Dr. David Utley, an instructor of surgery at Stanford, and is produced by Curon Medical, Inc. The technique uses radio-frequency heat and microwave energy to tighten the lower esophageal sphincter. This thickens the muscle, scars it, and ultimately stiffens it to prevent stomach acid and digestive enzymes from flowing back into the esophagus.

With both techniques, the relief from heartburn is fairly quick, says Rothstein—usually within a month and often sooner. In fact, the sewing procedure can have an effect within several days and sometimes immediately following surgery. Patients can go home and eat anything they want, some for the first time in years. Most no longer need antacids, he adds.

Dartmouth will also be involved in teaching these procedures. Rothstein and his nurse, Cindy Darling, have already demonstrated them in France and Portugal and soon will be touring through Brazil. "We believe that training needs to happen in an organized fashion," Rothstein says, "and the original investigators are now busy training the other folks who will do the rest of the studies."

Since both devices are still being investigated, comparisons between them and predictions for the future must await further trials. However, Rothstein is hopeful that the devices will find a permanent place in the treatment of heartburn. "If there is a benefit of some durability, then I think that we will see endoscopic therapy for reflux disease fit into our armamentarium between medical therapy and surgical therapy," he says.

Rothstein, who is a consultant for the company that manufactures the sewing device but does not own any stock in either firm, explains that "I am trying to use my expertise to help [Bard] design the best product that they could design, and also think about designing the best studies that would answer some of the . . . questions about what we're doing.

"I don't necessarily see it as a conflict," he adds. "Our patients who enter the studies do become aware that this is an investigational device."

Orifices: He adds that both of these devices are consistent with the trend toward doing surgery without any incisions—the aim being to turn long, painful operations and recuperations into short, outpatient procedures. "It is an exciting time," says Rothstein. "I think more and more we will be using nature's own orifices to operate."

Sara Connolly

ABIGAIL MALSIN

Spreading the joy of gumboots

Six second-year medical students—all women—are part of a fairly new tradition at Dartmouth: gumboot dancing. The style of dance, which originated in South Africa, was performed by mineworkers, "who used it as a way to relieve boredom and entertain themselves during their breaks," according to DMS student Ogochukwu Okpala, who is known as "Ogo." A Nigerian, Okpala learned gumboot dancing from a South African friend at McGill, where she did her undergraduate work and was president of the African Student Society.

"No background music is used—instead, the beats and rhythms come from the slapping of hands against the gumboots and stomping of gumboots on the ground. It's really quite a fun dance both to watch and perform," Okpala explains. She even taught gumboot dancing one semester as a Dartmouth College FLIP (Fitness and Lifestyle Improvement Program) class—part of a series of fitness courses open to anyone in the Dartmouth community.

The DMS Gumboots were founded last year by then-second-year student Kamel Addo, who is now completing his third year at Brown. "I also started teaching some people in my class the dance," says Okpala, "so that when Kamel left for Brown, and with most of the dancers going into third year, DMS would still be able to continue this tradition." She is now hoping that someone else will take up leadership of the gumboot group, since she's also about to leave to do her third- and fourth-year work at Brown.

The Koop Institute's Healing Arts program invited the gumboot dancers to perform in the rotunda at DHMC this year. They have performed in other Upper Valley venues as well, including for the children of the Lebanon Housing Authority and at DMS Visiting Days, a weekend for students accepted to the next year's class. "When we perform it for people, they say, 'Wow!'" Okpala reports.

For the moment, though, the members of the group have hung up their gumboots to mine their books as they prepare for end-of-the-year exams and boards.

Palm-sized computers put medical evidence into doctors' hands

JON GILBERT FOX

Blair Brooks shows a patient how he can pull up a variety of relevant information digested from medical journals onto his palm-sized organizer.

If your doctor plucks an electronic device out of a pocket and starts pressing buttons, he or she certainly isn't playing a video game and probably isn't making a cell-phone call. In Dartmouth's Department of Medicine, such a doctor is likely part of a concerted effort to incorporate handheld computers into daily practice. Blair Brooks, M.D., an associate professor of medicine, is leading the charge.

Palm-sized electronic organizers—also called personal digital assistants—are a popular way to store schedules, addresses, and phone numbers and to run simple programs. But Brooks hopes to harness their power to improve the decisions that doctors and patients make together. He also sees them as a tool to help residents learn how to apply evidence-based medicine.

Currently, all of the residents in DHMC's primary-care program have been given Palm IIIx organizers, and Brooks estimates that half of the general medicine faculty have taken them up too. They use the devices for all the things everyone else does—in place of pocket calendars and address books. In addition, Brooks is building a database of what he calls "second-order distilled information" that can be accessed on the Palms.

Key: The devices are key to getting information to providers at the right time. As Brooks sees it, the first challenge of improving medical decisions is "trying to figure out what the evidence is for particular treatments and particular diagnostic testing strategies." If there is no data on the outcomes of a particular treatment, that is one obvious hindrance. But even when data does exist, it can be time consuming, sometimes prohibitively so, for a doctor to retreat to an office or library to look up an applicable study, then bring that information back to the patient. Some medical centers have placed desktop computers that can access such information at strategic locations through the institution. But the Palm organizer fits into doctors' pockets and goes everywhere with them.

Brooks's database is designed to be useful in the specific DHMC practice setting. It is organized by general categories—such as cardiology—then by subcategories that represent conditions a doctor would be looking to treat—high cholesterol, for instance. A doctor can select one of these subcategories and see actual data from a study or group of studies.

Each entry lists the type of study and the types of patients included in the study. The doctor can assess the reliability of the study and decide if it is appropriate for a given patient. The entry also describes the positive outcomes of the study and the number of interventions needed to attain those outcomes, as well as the negative outcomes and their frequency. The entries are also dated, so doctors can be sure they're working with timely information.

Risk: "One of the risks of this is if you put the wrong information in," Brooks adds. To avoid that pitfall, every entry is reviewed in a multilayered process. First, residents select studies that they think are important and relevant to DHMC's patient population. The residents review the study, summarize it, and put it into the correct format for the database. They then present the topic at a department meeting, giving faculty a chance to go over each entry. This is why Brooks calls it second-order distilled information: it is taken out of journals that have often already summarized and collated data, then it is distilled again. Brooks plans to add six entries a week to the database by this method.

Value: This makes for a lot of work for Brooks and the others involved with the project, but, he says, "there's a value to it being homegrown." First, the department gets to apply consistent standards to the information that they will later use. "It's also asking the questions and putting in the information that's relevant to our patient population," he adds. This creates a role for the instincts and knowledge that the doctors have developed in their years of practice. The project is not aiming to create unfiltered data or to allow machines to make medical judgements. Brooks's hope is that the devices will help physicians to better understand the medical basis for their decisions.

For the residents, simply participating in the data-development process serves an educational purpose. "They've learned a lot, we've learned a lot, and then it's in [the database] and everybody can use it," Brooks says. He also hopes that using the Palm organizer will teach the residents to seek out appropriate evidence and apply it to their patients rather than equivocating or acting solely on instinct. The computer will function like a mentor, reminding the young doctors to base their decisions on hard evidence and pointing them toward the best studies.

"I had been thinking a lot about how to get the information to the bedside, where doctors make their decisions," he says. The hand-held devices were just the way to do that, he decided.

The Palm's strong points are its portability and its readable display. It also has the advantage of a technology called HotSync, which allows each user to download data from a central computer at regular intervals; this enables everyone in the department to easily obtain the most up-to-date version of the database. Its downside is limited memory, so it can't carry a whole library of data or sophisticated applications.

Flexible: Brooks points out, though, that the hand-held computer is in some ways not a huge leap over "handing out a little sheet of paper and putting it in a notebook." But the Palm is easier to handle and more attractive. And the data is better organized, as well as easier to update and cross-reference, than it would be in a notebook. The Palm also has potential for future expandability and flexibility. Brooks hopes to develop ways of reporting which entries are used most often and of helping with physician evaluations.

Brooks began the program as a way to encourage patients and physicians to make more informed medical decisions. Now, to accomplish that very patient-focused goal, he's promoting electronic devices. "I'm sort of chuckling at the fact that I'm the gizmo-pusher," he admits.

Jonathan Weisberg

J.D. DENHAM

From tiny infants, big artists grow

As DHMC's Neonatal Intensive Care Nursery (NICU) has known for some time, good things often come in very small packages. Twenty-five years ago, when the unit consisted of four bassinets in a corner of the adult ICU at the old hospital in Hanover, Jesse Blanchard was a very small package indeed—900 grams, or less than two pounds. He spent the first 10 weeks of his life in intensive care.

He's grown considerably, and so have his artistic gifts. Blanchard, now a professional artist who has had shows in New Hampshire, Vermont, Massachusetts, California, and the Caribbean, recently visited the new NICU (which has grown itself, to more than 30 beds) to present the staff with one of his bright and bold abstract paintings. "I wanted to give something back to the unit," Blanchard explains. "I wanted to thank them, especially since I was one of the earliest."

He hopes, he says, that others will feel the same need to give back to a place that gave them so much.

Remarkably, four of the people who cared for him when he was a newborn still work in the NICU and were on hand to celebrate the gift of Blanchard's canvas: George Little, M.D., his neonatologist; Carol Little, M.D., who at the time was a resident; and two of his nurses—Linda Brown and Kathy Allbright (pictured above with Blanchard). Even more remarkable is the fact that George Little can remember him—as a baby who was "challenging," needing almost constant care.

When Blanchard was born, babies of his size and gestational age had only a 15% chance of living. Today, preemies weighing 900 grams face vastly improved odds—better than 90% of them survive.

He was surprised, Blanchard said during his visit to the unit, to see just how tiny the babies in the NICU are. "I'd never seen one before," he remarked. "I couldn't believe the tininess." Having shown Blanchard a baby the size he was at birth, Allbright then presented him with a gift: a tiny plaster cast of an infant's hand, the size that Jesse's was when he was born.

Assisted reproduction survey fills a void in the literature

With nearly half a million biomedical journal articles published worldwide every year, it's pretty rare for a researcher to find a topic on which there is not a single scrap of published data. But that's just what happened recently to Judy Stern, Ph.D., director of DHMC's Human Embryology Lab.

Stern and several colleagues were teaching a multidisciplinary undergraduate course on the ethics and science of assisted reproduction—the provision of services to individuals or couples who are infertile or face some other difficulty getting pregnant. The team believed that access was an important area in the field and one that presented numerous ethical quandaries. For instance, should clinics be able to deny services to people who are HIV positive, who use illegal drugs, or who have a history of abusive behavior? To accept only married couples? To limit how many times a given patient can use their services? Stern, an associate professor of obstetrics and gynecology and of pathology, knew that the DHMC program was already grappling with questions like these.

Void: As she and the other faculty for the course—psychologist Catherine Cramer, Ph.D.; education professor Andrew Garrod, Ed.D.; and ethicist Ronald M. Green, Ph.D.—were developing the syllabus, however, they found no published information

MARK AUSTIN-WASHBURN

Judy Stern was amazed to find not a single journal article on access policies at assisted-reproduction centers—so she and colleagues set out to fill the gap.

on the topic of access. "There was absolutely nothing out in the literature on it," says Stern. She has since been working to fill the void.

She feels the issue of access deserves special attention in the context of assisted reproduction, because it is different from other areas of medicine. "First of all, infertility care is elective, so you're dealing with a situation where . . . [patients] are not in a state of being critically ill." This changes the physician's obligation to treat regardless of the behavior of the patient. Second, Stern points out, "what we're doing results in the birth of a baby." This sounds simple, but it creates a complicated obligation for the provider of assisted-reproduction services. Stern likens it to adoption and argues that providers have a responsibility to be aware of the family dynamics they are helping to create.

The first step, Stern and her colleagues decided, should be to assess the current state of practice, so they designed a survey and sent it to 324 assisted-reproduction clinics nationwide.

Survey design: The survey was broken into five parts. The first asked whether the clinic had a written policy covering access and if so how it had been formulated. The second queried their actual handling of various types of cases—for example, whether they treated unmarried women, lesbians, people with a history of drug or alcohol abuse, or women over a certain age. The next section explored the individual provider's personal feelings on these same issues. The fourth presented a series of case studies. And the last section covered demographics.

Variation: Stern and her colleagues garnered a 57% percent response rate, with wide geographic distribution. They found that many clinics do not have formal policies on access to service. In fact, only 44% had any kind of written policy at all, and 30% of those that did said they don't always follow their own policies.

As for actual practices, Stern found little consensus. Seventy percent of respondents do provide services to unmarried couples, unmarried women, and lesbian couples. But this was the closest to unity that the respondents came. "Many of the questions had a lot of disagreement, where some clinics will treat, some clinics won't treat, and some clinics throw up their hands and say, 'We don't know what to do with these patients,'" Stern reports.

"One of the things this [variability] means to us," she explains, "is that clinics need to do a little more talking as a profession . . . and bring some of these kinds of cases out into the open." Stern hypothesizes that the profession has avoided discussing access because it is a "socially frightening" topic. But, she points out, clinics are already making de facto decisions.

"The other thing we found that was very interesting," Stern adds, "is that pretty much on a question-by-question basis . . . the opinions of providers were more restrictive than their clinic policy." This means that a number of doctors are practicing in ways that they are not personally comfortable with. Stern believes that this is because our society has a history of "really [respecting] autonomy and telling people they can do what they want" and is one reason why there's resistance to even discussing limits on patient choice. In addition, these are issues about which people have strong and often opposing feelings.

Discussion: Stern is adamant, however, about the need to bring a broad spectrum of people into the consideration of these issues—including patients, providers, ethics experts, legal experts, and members of interest groups. The profession itself is very homogeneous—the respondents to the survey were 79% male, 87% Caucasian, and 85% Judeo-Christian—and this concerns Stern. The providers "are coming from a very similar perspective," she says, "and other perspectives are needed." She hopes that more discussion will facilitate the development of ethical and legal standards, even if it doesn't bring unity. "I don't think we'll ever get consensus in this society on these issues. But the goal is to have enough discussion to be aware that there are other opinions out there and to be aware of what they are."

The survey has led to at least one improvement at DHMC. Stern and her colleagues have since developed a written policy for the DHMC assisted-reproduction program. The policy serves as a guideline that a committee applies to specific cases. The policy is also shared with interested patients. This openness is another important step, says Stern; she feels patients should be made aware that clinic policies may vary and that they have a right to choose among different clinics.

"Right now what's happening is individual clinics are sort of making their own little decisions without input from anywhere," says Stern. "If there's a more general discussion, we can really talk about what the ethics of this are and what the legal side is."

Jonathan Weisberg

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

Robert Porter, M.D., an associate professor of anatomy and of surgery, was presented with the

Federation of State Medical Boards' Distinguished Service Award at the annual meeting of the organization. His contributions to the federation include serving as national president in 1995-96.

James Barrett, M.D., a research professor of psychiatry emeritus, recently received the Distinguished Service Award of the American Psychopathological Association at the group's annual meeting. He has held a number of leadership posts in the association.

Heinz Valtin, M.D., the Vail and Hampers Professor of Physiology Emeritus, was this year's recipient of the Roy G. Daggs Award of the American Physiological Society "in recognition of distinguished service to the society and to the science of physiology." The award was presented at the annual meeting of the Federation of American Societies for Experimental Biology.

MEDIA MENTIONS: DMS

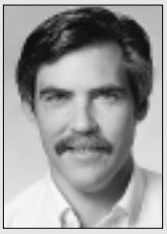
Among the people and programs coming in for prominent media coverage during recent months was DMS researcher **Michael Sporn.** The Yahoo!News Web site reported on the use of "a form of vitamin A [to] help prevent or treat cancer by reactivating a tumor-suppressing gene." However, the story added, "according to Dr. Michael Sporn of Dartmouth Medical School . . . the drug used in the study to switch the gene back on is too toxic to use in people."

Dr. **Joseph O'Donnell,** a professor of medicine and senior advising dean for the Medical School, was the subject of a recent feature in *Hope* magazine. The story explored his efforts to "employ unusual methods to nurture a new generation of kinder, gentler doctors. . . . O'Donnell believes that doctors can learn much from literature, that it is a bridge between the technical science of medicine and the elusive realm of morality. The work of a doctor is to listen to stories; literature, he says, teaches how to listen for stories."

Numerous publications from coast to coast carried the news that "Chemotherapy may cloud memory," as a headline in *USA Today* put it. *USA Today* went on to explain that "cancer patients who get ordinary doses of chemotherapy often experience lingering memory problems, says a study by Dartmouth Medical School. Psychologist **Tim Ahles** says that many years after treatment, some cancer survivors still have trouble remembering and concentrating." Ahles studied 128 survivors of breast cancer and lymphoma; 71 of them had had chemotherapy and 57 had had only surgery or radiation therapy. "Doctors say the findings suggest that aggressive treatment with chemotherapy may be unwise . . . unless the drugs can substantially improve the patients' chances of survival."

Working Mother magazine had some suggestions on how to "help your teen stop smoking—now. . . . Above all, 'Don't bother reciting long-term health risks,' advises **James Sargent,** an associate professor of pediatrics at Dartmouth Medical School. 'A teen can't see that far ahead, and most can't believe they could be addicted.'"

An Associated Press story looked at a "tricky question"—whether there should be an upper age limit for routine cancer screenings. "It's such a murky issue," the story said, "that most cancer guidelines don't even mention it. 'It hasn't gotten that much attention,' says Dr. **William Black** of Dartmouth Medical School, who analyzed federal health statistics to conclude the life-saving benefits of cancer screening fall to a startling low around age 75 and continue dropping with each birthday. . . . Giving up mammograms or the fecal occult blood test for colon cancer will cost the average 75-year-old only nine days of life, Black reported."



"A drug that showed promise against the common cold and viral meningitis in early tests has produced disappointing results in the latest study," according to a recent report in *USA Today*. However, the article went on, "**John Modlin** of Dartmouth Medical School, who heads the American Academy of Pediatrics committee on viral illnesses in children, notes that even the latest work shows some benefits against meningitis."

"Exploring the enigma of prostate therapies" was the title of a *New York Times* story that cited a Dartmouth authority. "What makes [patients'] decisions about treatment so difficult is that doctors do not know which one is most effective," noted the article. "Dr. **John Wasson,** an expert on health-care delivery at Dartmouth, said there was no proof from scientifically controlled trials 'that any treatment is better than watchful waiting' and then, if

& DHMC IN THE NEWS

cancer spreads, prescribing drugs to block the male hormones. . . . Rigorously controlled trials for prostate cancer have been difficult to do 'because everyone felt they knew the answer,' said Dr. Wasson."

Another *New York Times* story looked at the benefits and drawbacks of testing for prostate cancer, in connection with New York Mayor Rudolph Giuliani's disclosure that he had been diagnosed with the disease. Some of the physicians quoted in the article felt that men should get regular screenings for prostate cancer. But "some skeptics, like Dr. **Harold Sox,** chairman of the department of medicine at Dartmouth, remain unconvinced. . . . Dr. Sox was chairman of the United States Preventive Services Task Force when it recommended against routine prostate cancer screening several years ago. 'There isn't any evidence that screening has any benefits,' Dr. Sox said. 'But there's quite a bit of evidence that the consequences of screening for some patients, namely radical prostatectomy, have some harms. Unproven benefits and proven harms—that's why we recommend against it as a routine practice.'"

A silver lining to the cloud of a stroke for California artist Katherine Sherwood proved to be newfound artistic success, despite the fact that she's still paralyzed on her right side. The *Wall Street Journal* related her saga and interviewed a Dartmouth expert who agreed that "the stroke, by injuring part of Ms. Sherwood's brain, [might] have enhanced her powers of creativity. . . . **Paul Corballis,** a neuroscientist at Dartmouth, offers a startling hypothesis, yet one grounded in the latest research on the human mind: that Ms. Sherwood's stroke, by damaging or disconnecting the part of her brain responsible for logical reasoning, may have freed up the rest of her mind to think more creatively, unencumbered by normal neurological constraints. 'The thinking now is that all our great human intelligence comes with a hidden cost in other arenas,' says Dr. Corballis."

The Associated Press reported recently on a "rough draft of the genetic makeup of rice" that was recently completed by researchers at Monsanto. "**Mary Lou Guerinot,** a professor of biological sciences at Dartmouth, said the work represents 'a very significant development' and will help speed efforts to sequence the entire rice genome. 'Rice is such an important crop,' she said. 'Over half the world's people eat rice every day.'"

The *Pittsburgh Post-Gazette*'s "Health Briefs" column cited a study which showed that "left-handed women appear to have a higher risk of breast cancer than right-handed women. Researchers suggest that hormone exposure during fetal life may make a woman left-handed—and, more important, may increase her breast-cancer risk. Dr. **Linda Titus-Ernstoff** of Dartmouth-Hitchcock Medical Center and colleagues examined whether exposure to steroid hormones before birth increases the risk of breast cancer."

"Vets still conflicted over Korea" was the headline on a recent *Los Angeles Times* feature that delved into the angst suffered by "those who served in America's forgotten war. . . . **Paula Schnurr,** a professor of psychiatry at Dartmouth Medical School and an official at the Veterans Administration's National Center for Post-Traumatic Stress Disorder, says the post-combat emotional problems of Korean veterans were neglected by the government and by research scientists alike. 'It's unfortunate that a number of Korean veterans have suffered,' she says. 'If they haven't talked about it and they have the sad memories, the nightmares after all this time, they may think they're going crazy. If they're sitting there in a chair and start weeping, they need to know it's normal.'"

John Baldwin, M.D., the dean of Dartmouth Medical School, was recently elected vice chairman of the executive committee of the Harvard University Board of Overseers. He has served as a member of the board since 1995.

John Wasson, M.D., the H.O. West Professor of Geriatrics, was a member of the PSA Best Practice Policy Task Force of the American Urological Association. The panel recently released a report on PSA (prostate specific antigen) testing.

Glenn Johnson, M.D., an associate professor of surgery, was a recent recipient of the Honor Award of the American Academy of Otolaryngology-Head and Neck Surgery, in recognition of his volunteer efforts in behalf of the academy and its associated foundation.

Diane Harper, M.D., an assistant professor of obstetrics and gynecology, headed a research team that was honored with the "Best Research of the Year Award" at the annual meeting of the American Society for Colposcopy and Cervical Pathology. The work looked at screening for human papilloma virus as an augmentation of

or replacement for Pap smears.

Robert Harbaugh, M.D., a professor of surgery, has been appointed to the board of directors of the American Association of Neurological Surgeons.

James AuBuchon, M.D., a professor of pathology and of medicine, has been elected a member of the Royal College of Physicians. Established in 1661, the Edinburgh-based organization is the oldest college of physicians in the world.

Peter Klementowicz, M.D., an adjunct assistant professor of medicine, was a recipient of this year's "Gold Heart Award" of the American Heart Association. He is vice chair of the state Advisory Panel on Cancer and Chronic Diseases.

Mary Brunette, M.D., an assistant professor of psychiatry, recently received a Young Investigator Award from the National Alliance for Research on Schizophrenia and Depression for her work on parenting rehabilitation for women with severe mental illness.

Thomas McAllister, M.D., an associate professor of psychiatry, has been elected a fellow of the American Neuropsychiatric Association.

Joseph O'Donnell, M.D., a professor of medicine and senior advising dean for DMS, was recently appointed a member of the Healthy New Hampshire 2010 Leadership Council.

Robert Keene, D.M.D., an adjunct assistant professor of surgery emeritus, is vice president of the American Academy of Gold Foil Operators.

Sarah Freemantle, Ph.D., a research associate in pharmacology and toxicology, received a Lance Armstrong Foundation Award.

Emma Gutierrez-Cirlos, Ph.D., a postdoctoral fellow in biochemistry, was presented with the Young Investigator Award of the Biophysical Society.

Eugenia Hamilton, vice president of strategic planning for the Dartmouth-Hitchcock Alliance, has been appointed to the New Hampshire Workforce Opportunity Council.

Richard McClintock, director of security at DHMC, was named to chair the Healthcare Security Committee of the American Society for Industrial Security.

Kathleen Golden McAndrew, M.S.N., director of occupational medicine, was elected to the national board of directors for the American Association of Occupational Health Nurses.

Ronald Sliwinski, vice president for surgical, diagnostic, and cardiology services at DHMC, serves on the board of trustees of the New England Organ Bank.

Jil Shangraw, M.S., R.D., a dietician at DHMC, is president-elect of the New Hampshire Dietetic Association.

Evelyn Fleming and **Pamela Kunz,** third-year medical students, were awarded first prize for the best oral presentation by a student or resident at the joint annual meeting of the Association of Professors of Gynecology and Obstetrics and the Council for Residency Education in Obstetrics and Gynecology.

Eric Grasser, a fourth-year medical student, won first prize in the research poster category at this year's meeting of the International Health Medical Education Consortium.

Jennifer Vines, a second-year medical student, received a Certificate of Merit in the Arnold P. Gold Foundation's Humanism in Medicine Essay Contest.

Matthew Brady, a second-year medical student, has been selected to participate in the Howard Hughes Medical Institute Research Scholars Program in 2000-01.

Two recent features in Dartmouth Medicine magazine won the Will Solimene Award of Excellence from the New England Chapter of the American Medical Writers Association: "Warp and Weft" in the Spring 1999 issue and "The Making of a Medical Skeptic" in Summer 1999. "Warp and Weft" was excerpted from the recently published autobiography of **Lori Arviso Alvord,** M.D. (pictured above); she is associate dean of student and minority affairs at DMS and the nation's first Navajo woman surgeon. "The Making of a Medical Skeptic," written by **Catherine Tudish,** former associate editor of Dartmouth Medicine, explored the work of Dartmouth physicians Elliott Fisher, M.D., M.P.H., and Gilbert Welch, M.D., M.P.H., codirectors of the outcomes group at the VA Medical Center in White River Junction, Vt.

The DMS-student-run Upper Valley Wilderness Response Team was presented with the "Hero's Award," given annually by the *Manchester Union Leader.* (See page 19 for more about the organization.)

Dartmouth Medical School was ranked 36th among all 125 U.S. medical schools and 26th among schools that send a high percentage of their graduates into primary-care specialties in the annual *U.S. News & World Report* ranking of medical schools.

The rankings are based on reputation (as measured by surveys of deans, faculty, and residency program directors); the total dollar amount of National Institutes of Health research grants; admissions selectivity; and student-faculty ratio.

Dartmouth-Hitchcock Medical Center was named one of the "100 Most Wired Hospitals" in the country in a recent survey by *Hospitals & Health Networks* magazine.

Mary Hitchcock Memorial Hospital was presented with the Governor's Safety Award by the Safety and Health Council of New Hampshire. MHMH was recognized in the category of "other businesses" with over 500 employees.

Correction: **Jack Singer,** M.D., listed in the Spring issue's "Worthy of note" column as an assistant professor of surgery, is actually an associate professor. ■