

## FACTS &amp; FIGURES

## A weighty matter



12.0%

Prevalence of obesity among U.S. adults in 1991,  
according to the Centers for Disease Control and Prevention

19.8%

Prevalence of obesity among U.S. adults in 2000

61%

Percentage increase in obesity between 1991 and 2000

38.8 million

Number of American adults who met the definition  
of obesity (a body mass index of 30 or more) in 2000

\$110 billion

Amount of money Americans spent on fast food in 2001,  
according to the National Institutes of Health

4

Numbers of years of research grants awarded by the  
entire National Institutes of Health that that sum would fund

\$117 billion

Estimated cost of obesity in 2000 (\$61 billion in direct  
medical costs and \$56 billion in indirect costs, such as disability)

2,400

Estimated number of hamburgers sold in 2002  
at Dartmouth Medical School's Cafe North Cafeteria

25,584

Estimated number of turkey sandwiches sold in 2002 at Cafe North

Assessing outcomes  
of high-cost care  
at the end of life

A lot more money is spent caring for Medicare patients in some parts of the country than in others. But regions that provide more aggressive end-of-life care don't give any better care than regions with more conservative practice patterns, nor are survival rates any higher: Those were the conclusions of two DMS studies published in the February 18 issue of the *Annals of Internal Medicine*.

"People assume that more medical care means better medical care," says the paper's lead author, Elliott Fisher, M.D., M.P.H. "What this study shows us is that a large fraction—perhaps a third—of medical care is devoted to services that do not improve health outcomes or the quality of care." Fisher is a professor of medicine at Dartmouth and codirector of the Outcomes Group at the Veterans Affairs Medical Center in White River Junction, Vt.

**Variation:** Fisher's team found that in regions with nearly identical health-care needs, the overall quantity of services provided varied by as much as 60%—from an average of \$9,074 per person per year in low-spending regions to \$14,644 in high-spending regions. Patients in the latter areas visited their physicians more often, made greater use of specialists, had more minor procedures, and had more frequent and/or longer hospital stays.

Some of the most dramatic

differences were found in rates of services provided to seriously ill patients. For example, among patients in their last six months of life, intensive care unit days were twice as high and feeding tubes and emergency intubations were used more than twice as often in high-spending areas.

**Worse:** But there was no evidence of lower death rates, better functional status, or consistently better satisfaction with care for patients in the high-spending regions. On some measures—such as quality of care, access to outpatient services, and provision of preventive care like flu shots and Pap tests—higher-intensity regions actually fared worse than conservative regions.

While previous research has shown that the amount of money spent on health care and the number of medical services performed varies widely between regions, these Dartmouth studies are the first to comprehensively assess the impact of this variation on health-care outcomes.

"Our research points to the importance of controlling the capacity of the health-care system," says Fisher. "Most of the regional differences we found are due to the greater numbers of medical specialists and hospital beds in higher-intensity regions."

**Analysis:** The studies—which were funded by grants from the Robert Wood Johnson Foundation, the National Cancer Institute, and the National Institute of Aging—were based on an analysis of Medicare data from 1993 through 1995. The researchers looked at the clinical and financial data for four groups

of patients in each of 306 hospital referral regions: 614,503 people hospitalized with hip fractures; 195,429 hospitalized with colon cancer; 159,393 hospitalized with heart attacks; and 18,190 typical Medicare patients who had completed a survey.

**Implications:** Fisher says that the studies hold implications for consumers as well as for policy-makers. “For patients, our findings underscore the importance of evidence-based and conservative practice,” he explains, while “for policy-makers, our research points to the importance of controlling the capacity of the health-care system.”

Laura Stephenson Carter



ION GILBERT FOX

Elliott Fisher has shown that more care is not better—and can even be worse.

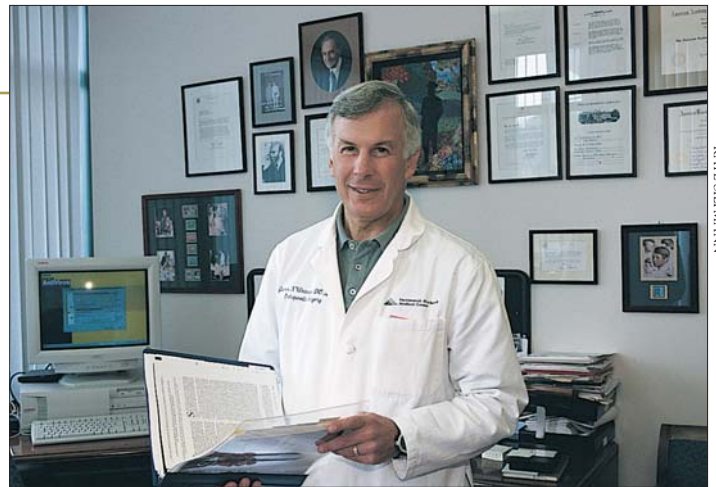
## Orthopaedics is now a department, with Weinstein as chair

DHMC is gearing up to handle what experts predict will be an onslaught of musculoskeletal illnesses over the next few decades. Orthopaedic conditions—such as back pain; knee, hip, and other joint problems; bone injuries; and arthritis—are the number-one cause of disability and physician visits in the U.S. And as the population ages, these problems will require ever more attention from medical professionals.

So Dartmouth has beefed up its resources in orthopaedics—elevating the discipline’s status from a section (within the Department of Surgery) to a department and appointing James Weinstein, D.O., as chair.

Weinstein, an advocate of evidence-based medicine and conservative treatment measures for low-back pain, is also head of DHMC’s Center for Shared Decision-Making and its multidisciplinary Spine Center.

**Concepts:** He plans to bring to the new department some of the innovative concepts behind the Spine Center: collecting real-time data, promoting shared decision-making, and bringing together doctors from different disciplines. “The Spine Center is a model for what I think health care needs to evolve into over time, where physicians work across disciplines for the benefit of patients,” he says. “We’ve been very successful in bringing multiple disciplines together in one place, when traditionally



KATE SIEMANN

Jim Weinstein, the new chair of orthopaedics, established DHMC’s Spine Center and heads the largest surgical trial ever funded by the National Institutes of Health.

people worked in their ‘towers.’ . . . Anesthesia worked in one place. Medicine worked in another place. Orthopaedics and neurosurgery worked in separate places.” Hundreds of visitors around the world have come to Dartmouth to see this system, Weinstein adds.

In the new Department of Orthopaedics, Weinstein has established teams of subspecialists—a team focused on spine problems, one for joint-replacement issues, one for sports medicine, and so on. Other plans include integrated clinical, basic, and prevention studies; coordinated teaching initiatives; new models for community and regional patient care; and development of a regional arthritis center.

**Guru:** Weinstein earned his D.O. from the Chicago College of Osteopathic Medicine and did his residency in orthopaedic surgery at Rush-Presbyterian-St. Luke’s Medical Center in Chicago. He joined the faculty at the University of Iowa in 1983, becoming director of its spine center in 1987. In the early 1990s, he met outcomes research guru

Jack Wennberg, M.D., the director of Dartmouth’s Center for the Evaluative Clinical Sciences (CECS). “We talked and he said, ‘Why don’t you come to Dartmouth for a while and do our program?’” Weinstein recalls. “I came to Dartmouth and went through . . . the second CECS class ever.” He returned to Iowa after completing the CECS master’s degree in 1995 and became codirector of the office of outcomes evaluation there—but he missed Dartmouth.

So in 1996 he came back. He was appointed a professor of surgery and of community and family medicine and was made director of the surgical outcomes assessment program. The same year, DHMC opened its Spine Center and asked Weinstein to head it, too. He is a member of the board of the American Academy of Orthopaedic Surgeons (AAOS) and a director of the American Board of Orthopaedic Surgery. In 1997, he received the AAOS’s highest award for orthopaedic research. He has also been editor-in-chief of the journal *Spine* since 1993.

In addition, Weinstein heads

the largest surgical trial ever funded by the National Institutes of Health (NIH)—a multi-site study of back pain based at Dartmouth. The five-year, \$14-million trial is comparing surgical to nonsurgical treatments for certain back problems; it is expected to have a major impact on clinical practice and the cost of medical care—a significant concern, since the annual tab for orthopaedic problems in the U.S. is over \$250 billion. Weinstein and colleagues were also recently awarded a nearly \$7-million NIH grant to study the implications of musculoskeletal diseases in America.

**Research prominence:** Moreover, Dartmouth is prominent in research to improve joint replacement techniques and to understand regional variations in the treatment of many musculoskeletal conditions.

Weinstein hopes that orthopaedics' new departmental status will help to strengthen what he deems an already strong residency program. Typically, DMS gets some 350 applicants for three available orthopaedic residency slots each year. "I think we have a chance of becoming one of the best orthopaedic programs in the United States," he says.

Will patients notice a difference now that orthopaedics is its own department? Perhaps. "Our goal is to provide better access, better patient care, better outcomes," says Weinstein.

People with orthopaedic conditions "usually get better," he adds. "We can make a difference in people's lives."

Laura Stephenson Carter

## Bariatric surgery can increase life expectancy

"There has to be an end to the madness," Lisa Driscoll-Rodiman told herself as her weight crept up to 380 pounds. There was. Gastric bypass surgery. It did for her what years of dieting had failed to do—helped her to shed more than 200 pounds.

**Staples:** DHMC bariatric surgeons performed what is known as a Roux-en-Y gastric bypass on Driscoll-Rodiman in June 2001. They opened her up; inserted surgical staples across the top of her stomach, leaving a pouch hardly bigger than an egg; and connected it directly to her intestine. She says that now when she overeats, "It hurts!"

Today, about 25% of adult Americans are obese, with 3% considered morbidly obese—at least 100 pounds overweight. And it's estimated that the obesity rate could reach 40% within five years. Meanwhile, gastric bypass surgery, also known as bariatric surgery, has been gaining in popularity. About 40,000 bariatric procedures were performed in the U.S. in 2000, and it's expected that over 100,000 will be done this year.

A recent DMS study, presented at the American College of Surgeons' Clinical Congress, has shown that such surgery can significantly increase life expectancy. John Birkmeyer, M.D., chief of general surgery, was a coauthor of the study, which concluded that bariatric surgery can add three years to a patient's

life. He points out that other procedures, like coronary angioplasty and coronary bypass surgery, "produce life expectancy benefits measured in months—3 to 12—substantially lower than gastric bypass."

**Demand:** As a result, demand for the surgery is increasing so rapidly that hospitals nationwide are struggling to meet it. At DHMC, it can be over a year from the time a patient makes initial contact with the program until surgery is done.

Everyone on DHMC's bariatric surgery team—which includes four surgeons, a nurse practitioner, a nurse, and a full-time dietician—is quick to note that bariatric surgery is only a tool to help people like Driscoll-Rodiman jump-start a weight-loss program.

Patients also need to make lifelong lifestyle changes, drastically modify their eating behavior, and engage in regular exercise. Otherwise the weight can come right back. Before patients are even considered for surgery, they must get a physical exam from their primary-care physician, attend three gastric bypass support-group meetings, be evaluated by the team, lose at least 15 pounds, undergo a psychiatric evaluation, and make a commitment to maintain contact with the program after surgery.

The operation, which can be done laparoscopically in some patients, helps to reduce many of the health problems associated with obesity, such as diabetes, heart disease, high blood pressure, stroke, certain cancers, depression, and osteoarthritis. But

the surgery is not without risk. The most common complications are pulmonary embolism, respiratory failure, and gastrointestinal leaks, which can cause serious infections. And, as with any surgery, there is a chance of dying. But "the risks of surgery are relatively low," says Birkmeyer. "Mortality is considerably lower than one percent."

Success rates were lower in decades past, however. In the 1970s, the most common operation to treat obesity involved shortening the intestine so less food would be absorbed, explains Kenneth Burchard, M.D., who recently stepped down after 12 years as director of DHMC's



Bill Laycock, head of bariatric surgery, points to a model of the stomach.

bariatric surgery program. “The procedure was abandoned by the early 1980s,” he adds, “because of acute illnesses, especially acute liver malfunction, that threatened life.”

**Better:** Today, with better procedures, Birkmeyer says bariatric surgery is also “providing a human model for the investigation of the underlying pathophysiology of obesity.” He predicts that “the surgery may advance the understanding of this illness” so a nonsurgical treatment may one day be possible.

In addition, DHMC will soon be testing a new way to perform gastric bypass surgery, explains William Laycock, M.D., the current director of the bariatric surgery program.

Dartmouth-Hitchcock is one of 12 medical centers that will be participating in clinical trials of a device called the Swedish adjustable gastric band (SAGB). Such devices, which are placed laparoscopically, have been used widely in Europe for several years. The SAGB is an inflatable band that is fitted around the uppermost part of the stomach, creating a small pouch. The physician can adjust the band’s diameter by injecting or removing fluid according to the patient’s weight-loss requirements.

**Benefits:** The benefits of gastric bypass surgery can be significant. “I feel like a normal person again,” says Driscoll-Rodiman. “I can ride a bike. I can ride a swing, run with my kids, wear normal clothes. I can even cross my legs. Little things that people take for granted.”

Laura Stephenson Carter

## DMS geneticists win prize for best paper in *Science*

Don’t tell those who celebrate the Chinese New Year, but 2003 might be the year of the worm and not the year of the sheep—at least at Dartmouth Medical School. For their breakthrough discovery of micro-sized RNAs (miRNAs) in the worm *C. elegans*, two Dartmouth geneticists have earned the prestigious Newcomb Cleveland Prize and proven that the worm offers more insight into cell biology than had been thought.

Each year, the American Association for the Advancement of Science (AAAS) bestows the Cleveland Prize for the most significant paper published in the journal *Science*. This year’s recipients, for an article titled “An

Extensive Class of Small RNAs in *Caenorhabditis elegans*,” included Victor Ambros, Ph.D., a professor of genetics at DMS, and Rosalind Lee, a research assistant. Ambros and Lee, who are married to each other, shared the award with two other research teams that also worked on miRNAs.

**Convergence:** “We converged on the discovery at the same time,” Ambros says of the three teams’ efforts. “Taken together, these three papers show that there exists a class of regulatory molecules originally thought to have only two members in nematodes. But they were found to exist everywhere. There is a lot of potential importance of this molecule to diverse biological processes. It is this potential that gets people excited.”

Although Ambros and Lee first discovered miRNAs over a

decade ago in the worm’s *lin-4* gene, they were puzzled for years about whether their discovery represented an isolated phenomenon. Ambros admits that they experienced a “low point” in their research when they felt they might be learning about a tiny part of worm development that held no broader implications for the study of genetics.

They became encouraged in 2000 when a lab at Massachusetts General Hospital discovered another miRNA with a different function in a different gene sequence. Since then, the research teams collectively have realized that miRNAs exist not only in worms, but also in other animals, including fruit flies, mice, and humans. Ambros is especially intrigued by the presence of miRNAs in human tissue and the role they might play in heart development.

**Collaboration:** The collaboration that facilitated the discovery of miRNAs will undoubtedly influence the direction of future research. Although Lee admits to now feeling more pressure to conduct further experiments and publish quickly, she is particularly proud of their role in validating other emerging research on the subject.

“People have worked for years on genes in several other species with clear phenotypes but were unable to clone them,” she explains. “It has been very exciting to hear from them that they determined that their genes were miRNAs after they saw the papers. It has opened a door that nobody noticed was there.”

Ambros, too, has been en-



Victor Ambros (left) and Rosalind Lee (right), members of the Department of Genetics at Dartmouth, recently won the Newcomb Cleveland Prize, which is awarded to the authors of the most significant paper published in the journal *Science*.

couraged that years of research have resulted in a significant scientific breakthrough. Although he has experienced moments when he “rethought” his perspective and faith in his experiments, he says he felt a rewarding “sense of amazement” with the miRNA success.

At the same time that Ambros was enjoying this climax in his research career, he was also watching teenagers beginning their journey down the path of scientific discovery.

**Expertise:** Selected as a judge in the AAAS’s Siemens-Westinghouse Competition in Math, Science, and Technology, the most prestigious national science and mathematics competition for high school students, Ambros offered his expertise in genetics to students presenting projects on that topic. Not only did judging the competition help Ambros remember how much he had loved science while he was growing up, but it also made him particularly appreciate earning the Cleveland Prize.

“Those kids really achieved something extraordinary relative to where they are in their education. . . . We are fully educated, trained, and well funded, and we just happened to make an interesting discovery,” Ambros reflects. “There was luck in what we did, whereas those kids are doing really high-level science research coming from a high-school environment, not a research environment.”

**Future:** “It’s great to think about the future they have ahead of them,” he says.

KATRINA MITCHELL

## Dartmouth alumnus scores neurosurgical success at DHMC

It’s a cold evening in December, and Boston’s Handel & Haydn Society (known as H&H) is rehearsing *The Messiah*. Among the basses, the third man from the right pulls a pencil from behind his ear, marks his score, and opens his mouth to sing. None of this seems remarkable until you consider that, less than five months before, this man was lying motionless in a hospital bed, learning how to breathe.

The third man from the right used to know how to breathe, of course. He used to know how to sing, too—he was a member of two choral groups as an undergraduate at Dartmouth and he has sung with H&H since 1994. But on July 6, 2002, Clifford Rust, a 1986 graduate of Dartmouth College, tumbled headfirst off his mountain bike in a New Hampshire ravine. Suddenly singing and breathing—not to mention talking, walking, and even being alive—were things that he could no longer take for granted.

“I landed on my head,” recalls Rust.

“You hear that awful crunching, and . . . you know.” Rust lay motionless while friends got help. Mosquitoes were swarming, but he could feel them only on his face. “I tried not to think too much,” he says.

The local hospital quickly sent Rust to DHMC. Meanwhile, a friend phoned his wife. “They might want to keep him overnight,” Judith Rust recalls hearing. In fact, Clifford Rust stayed at DHMC until July 17. He observes dryly that his injury, between the sixth and seventh vertebrae, is “very popular for sports injuries.” It leaves people quadriplegic most of the time, Judith Rust adds, though fortunately they didn’t find that out right away.

**Hope:** Fortunately, too, Rust’s spinal cord wasn’t severed. Dartmouth neurosurgeon Perry Ball cut through the front of his neck and put a plate in his spine, near

the injury. There was hope of some recovery. But no one could say how much. “The initial prognosis was that he’d be in a wheelchair for eight months to a year,” Judith Rust says. His mobility, strength, and flexibility all were question marks. The only thing certain was that a long recovery lay ahead.

Once he was stable, Rust was transferred to Spaulding Rehabilitation Hospital. He spent three and a half months there, relearning everything. At first, he focused on small goals, like putting on his socks. Gradually he made progress. He sat unsupported, he stood, he walked.

And he began to think of singing again. “Speaking was tough at first, much less thinking of singing,” Rust says. But he worked hard and soon set a more ambitious goal: to sing with H&H in their first performance of the season. “Having that goal to work toward really made a difference,” he says. “It was just incredible therapy on every level, physical and mental,” he says. “It felt great.”

**Voice:** It helped, Rust says, that “at least the singing voice felt the same.” For everything else, he has had to retrain his muscles, working consciously to do what was once automatic. But singing is still singing. “Because of that familiarity, being able to do it . . . it just has a very, very deep significance,” Rust says. “I’ve always loved music, but it was just one of the thousand things I took for granted.” He pauses, then smiles. “I’m not doing that with anything these days.”

LOUISE KENNEDY



JON GILBERT FOX

**Neurosurgeon Perry Ball, pictured at DHMC, operated last July on Clifford Rust after he broke his neck in a bike accident. Five months later, Rust was again singing Handel oratorios.**

## Preteen film fare is the subject of a Dartmouth study

Imagine this scene: A young woman, alone in her house at night, answers the telephone. The caller, a man, engages her in a series of increasingly threatening conversations. She hangs up on him every time, but he keeps calling back. Terrified, she eventually realizes that he is at her house. Then the caller, dressed as Edvard Munch's subject in the painting *The Scream*, smashes a window, grabs her, stabs her repeatedly, drags her across the lawn, and hangs her disemboweled corpse from a tree.

Now imagine that you are 10 years old and have just popped the movie *Scream* into your VCR. You are about to experience that opening scene.

**Content:** Dartmouth pediatrician James Sargent, M.D., and his research team surveyed more than 5,000 5th- through 8th-graders from New Hampshire and Vermont in a recent study to determine the reach of R-rated movies among middle-schoolers. They coded the content of 600 popular movies—many of which contain scenes depicting rape, sodomy, and cannibalism—and asked each child which movies they had seen from a random subset of 50 titles.

They discovered that the reach of these violent movies among the younger population was much larger than they had expected. According to Sargent, *Scream* was the most popular R-rated movie, seen by 66% of the



**Pediatrician Jim Sargent says preteens today see a surprising amount of violence in popular movies—such as the scene behind him of Brad Pitt in *Fight Club*, which is rated R for “disturbing and graphic depiction of violent antisocial behavior.”**

5th- through 8th-graders (including 40% of the 5th-graders). Even the movie *Natural Born Killers*, which is rated R due to its “extreme violence and graphic carnage, shocking images, language, and sexuality,” had been viewed by 20% of the study respondents and 13% of the 5th-graders.

“What we wanted to point out with this article,” Sargent explains, “is that these R-rated movies—that really are adult material—are being seen by a surprisingly high proportion of pretty young kids, starting at probably age 10.”

**Viewing violence:** What is the effect of viewing violence at that age? According to Sargent, “it scares the young children and desensitizes the older children. It makes them less responsive to violence.” In his practice, Sargent hears from parents who say that their children have returned from sleepovers afraid to go into their bedrooms. In conversation, up will pop the title to an ex-

tremely violent movie, like *Friday the 13th*. Sargent says he advises such parents to watch the movie themselves, so they can then talk to their children about the inappropriate things they’ve seen and help them process the material.

A child who perhaps only three years earlier believed in Santa Claus, adds Sargent, does not have the adult perspective necessary to understand these images. “It’s a developmental process. They’re really not ready to behave like adults until they’re 20 or 21.”

The problem, Sargent says, is that movies are everywhere now, and people don’t think carefully about all the ways in which their children might come across such fare. It used to be that theaters wouldn’t admit children under 16 to R-rated movies. That is no longer the case.

And besides, Sargent determined that about two-thirds of the study’s respondents had seen the movies not in theaters but on

TV (for which they are mildly edited), VCR, or DVD.

He feels that parental care is the solution. “The point of this paper is to cause people, especially parents, to think about what they let their kids see, and to try to hold the line as long as they can. I think it’s better to have a kid that’s relatively naive with respect to this kind of exposure than a kid that’s overexposed. It’s something that every parent has to think about.”

Sargent encourages parents to keep media “in the box.” How? Every television made since 2000 has a device called a V-chip, he explains, which allows parents to block certain channels or programs. All movies are rated, so a parent could program a V-chip to disallow anything rated TV-14 or higher.

**Champion of the V-chip:** But parents haven’t been taught how to use the chip or been educated on its importance, Sargent believes. He would like to see if active use of the V-chip could affect kids’ exposure to media.

Sargent intends to aim future research in two directions. First, he plans to conduct a regional study on interactions between parents and their kids regarding the media. About 15% of the surveyed children said their parents don’t let them watch R-rated movies. Sargent wants to know how those parents differ from those who are more lenient. And second, he hopes to survey a nationally representative sample of kids to see if the findings apply to all areas of the U.S. and to different racial groups.

KATHARINE FISHER BRITTON

## DMS students can click on CLIPP to learn pediatrics

All Dartmouth medical students doing a pediatric clerkship this year will get to know two-week-old Tyler when he and his mother come in for a routine outpatient visit. Since students work in 19 different community practices throughout New Hampshire and Vermont, this suggests that Tyler and his mom spend a lot of time on the road. Actually, thanks to the Computer-assisted Learning in Pediatrics Project (CLIPP), which is being developed at Dartmouth, Tyler stays home and the students meet him on the Internet.

When it's completed in June, CLIPP will include 31 different cases, including Tyler's, in an interactive learning program that covers the core curriculum for pediatric clerkships, as developed by the national Council on Medical Student Education in Pediatrics (COMSEP).

Clerkships put students in a clinical setting, where—under close guidance—they meet patients and take part in diagnosing illnesses and recommending treatments. While the clerkship represents a quantum leap from the classroom for students, it is limited by time and place. During their seven-week pediatric clerkship, DMS students are apt to see only illnesses and injuries common at that time of year in northern New England.

"There is a high likelihood of missing major clinical issues," says Leslie Fall, M.D., codirector



MARK AUSTIN WASHBURN

**Leslie Fall (left) and Norman Berman (right) are working to bring a comprehensive clinical pediatrics experience to medical students anywhere through the Internet.**

of CLIPP and director of medical student education in the pediatrics department. Students may, for example, never encounter a patient with HIV infection or sickle-cell anemia.

**Remedy:** Fall—with CLIPP's other codirector, Norman Berman, M.D.—came up with an ingenious remedy. In 1993 and 1994, Berman had developed a pre-Internet program containing clinical simulations, but it was available on only one computer in the DMS library. Martin Fischer, a German physician visiting Dartmouth, was very interested in Berman's work and the possibility of using it on the Web. Upon his return to Munich, Fischer started working with a software developer to come up with an interactive program so medical students could work through cases just as they would in a clinic.

In 1999, Fischer came back to Dartmouth to demonstrate the program; Fall and Berman have taken it from there. "The software incorporates an element

that challenges students to think diagnostically," Fall explains. As a case unfolds, students get a little information at a time, answer questions based on that information, and then get feedback on their answers. This simulates a clinical situation in which a student would take a patient's history, perform a physical exam, order tests, assess the information, make a diagnosis, and come up with a plan for managing the patient's condition.

"And all of this can be done in a safe environment," Fall says, where students aren't making decisions about actual patients.

Rather than simply converting Berman's original cases to the new software, he and Fall sent out a call for case authors through COMSEP. "Our goal was to spread the project content nationally," Berman explains. Each of the 31 authors worked with two COMSEP mentors—a content advisor and a technology advisor—and each case was peer-reviewed. The result is a national consensus-based curricu-

lum. "To the best of our knowledge, nothing like this has ever been done," Berman adds.

The program also provides opportunities for consultation (by clicking on an "Expert" button) and research (by clicking on "Hyperlinks"). In Tyler's case, for example, his mother is worried that he isn't gaining weight. By consulting the expert, a student discovers that newborns usually lose 5% to 10% of their birth weight but return to that weight within two weeks. Since Tyler remains below his birth weight, there may be a problem. By the time students reach the diagnosis stage, they have determined that Tyler has breathing difficulties that interfere with nursing. They then propose possible diagnoses and decide which one best fits Tyler's symptoms.

Once students complete all the cases, "they will have seen the 30 most important things," Fall says. Berman adds, however, that CLIPP is meant to supplement, not replace, actual clinical experience.

When Fall and Berman unveil CLIPP at the national COMSEP meeting in April, they will be able to present feedback from students at Dartmouth, Morehouse, Vanderbilt, and Meharry Medical Schools.

**Model:** They will also have a chance to talk about the project's broader implications. Not only can the CLIPP model be applied to other specialties, but it is available wherever there is Internet access. To meet Tyler and learn more about CLIPP, visit [www.clippcases.org](http://www.clippcases.org).

CATHERINE TUDISH

## In looking at the brain, many heads are better than one

Neuroscientists worldwide are exploring the brain: how it processes information, how the nervous system recovers from injury, how chemical signals ignite different neural responses. Dartmouth neuroscientists have long been tackling such heady topics, too. Now, the newly established Neuroscience Center at Dartmouth (NCD) links all neuroscience experts on campus under one umbrella, blending clinical neurology and neurosurgery with basic and cognitive research in the neurosciences.

"Neuroscience interests at Dartmouth have long been outstanding in many areas, but spread across many departments and sometimes fragmented," says NCD advisory board member David Roberts, M.D., a professor of neurosurgery. "Increased collaboration with our colleagues in other disciplines enhances all of our efforts to advance our understanding of the neurosciences."

Dartmouth is the last of the Ivy League schools to establish a neuroscience program. "So many of us have wanted this," says the NCD's interim director, Joyce DeLeo, Ph.D., an associate professor of anesthesiology and of pharmacology.

**Shape:** But although a late-comer to having an official program, Dartmouth is blazing ground in the way its program is shaped. Most of the 250 U.S. schools with neuroscience programs focus on basic research,



ALEXIOS N. MONOPOLIS

Joyce DeLeo (in red) is the interim director of the new Neuroscience Center at Dartmouth and one of many heads taking a collaborative approach to looking at the brain.

says DeLeo. But the NCD also encompasses cognitive research and clinical issues.

Neuroscientists at Dartmouth are spread throughout 16 departments and work in the molecular, cellular, systems, behavioral, cognitive, and clinical arenas. There are over 150 active grants in the neurosciences, totaling about \$19 million. Dartmouth is particularly strong in multiple sclerosis, epilepsy, chronic pain, neuro-oncology, and schizophrenia, says DeLeo. There is also work ongoing on prion diseases; biological clocks; sleep deprivation; traumatic brain injury; memory; neurodegenerative diseases; and neural imaging.

**Collegial:** "The NCD is a neuroscience center without walls, pulling together investigators throughout the Medical School, College, and Medical Center to work in a collaborative, supportive environment," says Gregory Holmes, M.D., chief of neurology and another of the NCD's nine advisory board members.

That collegial environment is what distinguishes Dartmouth

and the NCD, says DeLeo, who has worked at other research institutions. "Dartmouth is not a transient place, so you build relationships," which are a key to effective collaboration.

"The center has already been instrumental in increasing awareness among the investigators of opportunities to collaborate . . . through dialogue and conferences," adds Holmes.

In addition to hosting seminars and conferences, the NCD will facilitate communication among neuroscientists via print and the Web and encourage collaborative grant submissions. It's also establishing a neuroscience training program; developing new courses for undergraduates, graduate students, and medical students; creating an undergraduate neuroscience major; and aiming to recruit more neuroscientists in the next few years.

"With better integration and coordination," Roberts says, "Dartmouth can take its rightful place among institutional leaders in the field."

Laura Stephenson Carter

## Heartening news for women with cardiac problems

Although angioplasty may not be able to cure a broken heart, it does wonders in tackling blocked arteries. That became even more evident with the recent release of a DMS study about the outcomes of treating the literal kind of heart-break. David Malenka, M.D., an associate professor of medicine and of community and family medicine, has demonstrated that women who undergo angioplasty fare just as well as men in terms of their survival after the procedure.

**Risk:** This discovery eases concerns about how well cardiovascular disease is recognized and treated in women. Previous stud-



MARK AUSTIN WASHBURN

DMS cardiologist David Malenka has determined that women with blocked arteries now fare better than ever.



ies, from the early 1990s, showed that women had a higher risk of adverse outcomes after angioplasty than men and a 64% higher mortality rate than men.

**Procedures:** But by the end of the 1990s, women's outcomes had changed dramatically. Malenka and a team of DMS researchers studied data from 33,666 cases of angioplasty and other artery-clearing procedures conducted in northern New England between 1994 and 1999. Their results were published in the *Journal of the American College of Cardiology*.

Malenka found that over the course of the study, the need to perform open-heart surgery and the rate of heart attacks after angioplasty for both women and men decreased significantly.

In addition, by the end of the study, women's overall rates had dropped so much that they virtually equalled those of men. By 1999, only 0.94% of women and 0.83% of men needed a coronary artery bypass graft, or CABG. Heart attack rates after angioplasty also decreased significantly—women's rates by 30% and men's by 38%. The rate of death after angioplasty stayed roughly the same for women and men, improving slightly for both.

**Improvements:** These improvements came despite the fact that over the course of the study, doctors were intervening on a sicker population—especially in the case of the women, who on average were slightly older than the men and had more complicating conditions, such as diabetes and vascular disease.

The reason for the improve-



FIXING SQUIRREL GRAPHICS

Sandra Blake, R.N. (left), and Heather Lakin, L.N.A. (center), are a few of the many appreciative audience members for the regular informal "concerts" presented by dialysis patient Donald Jackson.

## Dialysis patient works magic with music

When we walk hand in hand  
The world becomes a wonderland,  
It's magic.  
How else can I explain  
Those rainbows when there is no rain,  
It's magic. . . .

**T**he lyrics above were made popular by Doris Day in the 1948 film *Romance on the High Seas*. Today, they (and the sweet sounds of other love ballads) are popular in a very different venue. Periodically, a velvety male voice floats above the background chatter and the whirr of machinery in DHMC's dialysis room. Patients smile. Nurses applaud. It's magic.

For the past seven years, Dartmouth-Hitchcock dialysis patient Donald Jackson has been treating people to his rendition of tunes made famous by the likes of Frank Sinatra, Perry Como, Dean Martin, and Doris Day. He's not a professional crooner. He's had no formal training. He doesn't even read music. He just loves to sing.

To everyone's delight, Jackson performs in the dialysis room three times a week. That's how often he comes in for treatment. He usually begins singing as he's finishing up his four-hour session on the dialysis machine and preparing to return to his home in St. Johnsbury, Vt. But he's been known to break into song in the middle of a treatment, too. And he can often be heard singing his way through the halls of DHMC as he travels around in his motorized wheelchair. He even admits to singing from the rooftops—but that was when he was much younger and living in Brooklyn, N.Y., he says.

Yes, indeed, music is surely magic.

L.S.C.

ment in outcomes between 1994 and 1999 is not exactly known, but Malenka believes the use of stents played a large part. Stents are wire mesh tubes which encircle the balloons used in angioplasty.

In angioplasty, a catheter with a balloon at its tip is inserted in or near a blockage in an artery, and the balloon is then inflated. That stretches the walls of the artery and cracks the plaque that is causing the blockage, thus restoring an adequate blood flow to the heart muscle. And as the balloon inflates, the stent around it also expands against the artery walls and helps to prevent restenosis—a recurrence of the blockage. Once the stent is in place, it remains there permanently.

**Stents:** In addition to stents, a few other elements have played a part in improving outcomes. "I do believe that the . . . CABG rate going down is due largely to the availability of stents, but not solely. We are better at selecting what lesions to tackle," says Malenka. Another factor is that "the catheters and balloons are . . . more reliably manufactured." And, he adds, better medications are available to help prevent clotting before and during artery-clearing procedures.

Scientists are now working on bonding medications to the stents to help heal blood vessels damaged during angioplasty. The medicated stents are expected to reduce restenosis rates to less than 5%. "That's going to be a very attractive option for people," predicts Malenka.

MATTHEW C. WIENCKE

## Helping teens with questions about sexuality

When he was growing up in rural Montana, Justin Wheeler knew he “never would have felt comfortable coming out in high school.” Ten years later, Wheeler is a second-year student at DMS and a recipient of a 2002-03 Schweitzer Fellowship. His fellowship project involves helping youths in southern New Hampshire explore their sexuality in an environment more accepting than the one he experienced as a teenager.

**Witness:** “It’s powerful to witness social change,” says Wheeler of his work with Manchester Outright, a nonprofit organization that provides support to teens who are gay, lesbian, bisexual, transgendered, or questioning their sexuality.

“The coolest thing is to see these kids going through a lot of issues that I went through as a gay man at 20,” adds Wheeler. “They are approaching these issues as young as 14. They are vocal and seen by the community, which is pretty amazing.”

**Community service:** One of seven participants from Dartmouth Medical School in this year’s Schweitzer Fellowship program, which awards grants for community service projects, Wheeler has been working with Manchester Outright since April of 2002. He has served on its board of directors; helped develop a Web site for the organization; prepared educational displays for the New Hampshire Department



KATRINA MITCHELL

**Second-year medical student Justin Wheeler has found that his year as a Schweitzer Fellow—serving in an advisory capacity with a group called Manchester Outright—has helped to solidify his belief that medicine is best practiced in a holistic fashion.**

of Health and Human Services; and designed information packets for Manchester schools and youth-service providers.

“Justin has made a lasting contribution to Manchester Outright,” says past president Tiffany Willis. “His enthusiasm, energy, and commitment to the organization and the board of directors have helped us attain our goals for the past year.”

Wheeler has found the experience educational as well as personally rewarding. He says that he learned the most from representing Manchester Outright before a graduate-level grant-writing class at Springfield (Mass.) College. The class had voted to use Manchester Outright as the community group around which the students would structure their grant-writing efforts, and Wheeler was the liaison between

the class and the organization. This past fall, he learned that Manchester Outright had secured a major grant from the Bean Foundation.

**Support:** And the role Wheeler has enjoyed the most has been facilitating a weekly group-support session for teens. He believes that although gay teens are coming out in safer environments than ever before, the encouragement they can give each other is still invaluable.

“The first time I facilitated a group, I watched the kids come in and change their demeanor and their body language in the meeting space,” recalls Wheeler. “They literally shed the defenses that they have on the street. I sat and watched their moments of realization that they can feel safe in group and find support and encouragement. They open up and

laugh more and are more vibrant individuals.”

The teens who come to the sessions feel the same way. “I first started going to Outright because I was not sure if being gay was okay,” explains a teen who wishes to remain anonymous. “When I went there, I found that everyone was friendly to me, and I felt like I was in a place where I could be myself. I knew that I would be fine, and my self-esteem slowly rose. I knew it was a safe environment.”

Wheeler says that comments like this remind him that physicians can be powerful advocates for their patients. He had previously served as a peer adviser on coming-out issues and sexually-transmitted diseases. But most of the Manchester teens are at least five years younger than he is, so Wheeler feels that he has interacted with them as a professional rather than a peer.

That has solidified his belief that medicine is best practiced in a holistic fashion. As he concludes his Schweitzer Fellowship, he pledges to remember that practicing medicine involves more than merely addressing patients’ physical concerns.

**Guide:** “When I talk to the kids, I see that they are looking for people to mentor and guide them, queer individuals they can see being active in the community. That’s why they trust us and seek our advice,” Wheeler says.

“There is strength in medicine and medical knowledge, but it is just as important for there to be people to mentor and guide these kids.”

KATRINA MITCHELL

## “Plastic firefly” gets a close look at the intestine

What is smaller than a quarter, weighs just four grams, and can be swallowed easily with a sip of water? The M2A diagnostic capsule, an ingestible “camera pill” that DHMC gastroenterologists Peter Anderson, M.D., and Steven Bensen, M.D., have found invaluable in hunting down obscure bleeding sources, gastrointestinal (GI) ulcers, and tumors in the twisted passageways of the small intestine.

DHMC was one of the earlier places in the country to use the new technology. Anderson and Bensen have now used the M2A on over 70 patients.

**Methods:** Conventional methods of examining the small intestine (including x-ray, enteroscopy, and colonoscopy) fail to detect disorders in 5% of patients with obscure GI bleeding. Barium x-rays pick up less than 10% of bleeding sources; arteriographies (x-rays involving a catheter) work only in cases of severe, steady bleeding; and push enteroscopies (the insertion of a GI endoscope from above) can only probe the first 5 to 10 feet of the 20-foot small intestine. All other patients have required intraoperative enteroscopy.

Using the new M2A capsule has proven both less invasive and much more effective. After an early European trial, researchers reported that push enteroscopy had identified a bleeding source in 9 of 32 patients, while the M2A procedure was



At right, Dartmouth gastroenterologist Peter Anderson shows off the M2A capsule that helps doctors locate problems in the intestine. At left are a pair of M2A images: an arteriovenous malformation (top) and a Crohn's disease lesion (bottom).

successful in 21 of 32 patients.

The capsule consists of a lens, two tiny LED light sources, a camera on a computer chip, and a low-power radio transmitter. It is powered by two silver oxide batteries and is wrapped in a watertight casing.

**Sensors:** After the patient swallows the capsule, it moves through the digestive system, blinking all the way like a plastic firefly and transmitting video signals—two images a second—to sensors on the patient's abdomen. The sensors send signals to a wireless receiver that the patient wears on a belt. Six to eight hours later, the capsule passes through the body naturally and the equipment is removed.

Some 55,000 images are then downloaded from the receiver into a computer program that displays each image in sequence, so that doctors can see the entire small intestine, inch by inch.



MARK AUSTIN/WASHBURN

## Study explores how students' attitudes evolve

Ask any medical student “How's it going?” and you're likely to get an earful about what an intense experience medical school is. Much of that intensity relates to the volume of hard science students must learn. But what effect does it have on the softer side of medicine—the development of students' attitudes toward patient care? Surely they are significantly shaped during the four years of medical school.

**Impact:** Documenting if that's the case would seem simple enough. You design a questionnaire, administer it, then crunch the results, and there's your answer. The problem has been that such surveys have come up with different answers. Some have suggested that students tend to become less empathetic and more cynical during medical school. Others have concluded that medical school has a neutral or positive impact on attitudes related to patient care. What accounts for the variation? Maybe the studies measured slightly different attitudes or used different assessment methods. Or perhaps the problem lay in the fact that “attitude” was usually assessed as a single element.

In a study for the spring issue of the *Annals of Behavioral Science and Medical Education*, researchers at Dartmouth's Center for Educational Outcomes aimed to overcome these problems. Virginia Reed, Ph.D., the center's associate director, and her col-

The M2A is most useful in locating arteriovenous malformations—tangles of blood vessels on the surface of the small bowel's lining. Anderson says it can also find “early Crohn's disease, a common inflammatory bowel disease that sometimes can be very difficult to pick up on all the other techniques.” In addition, it can detect early signs of cancer and small-bowel ulcers.

“The drawback of capsule endoscopy is that at this point it's only diagnostic,” says Anderson. “It can see abnormalities, but it can't do anything about them,” so some cases still require intraoperative enteroscopy. But the M2A “increases our chances of finding the culprit.”

Anderson and Bensen are now planning a study to see if the M2A can help in identifying small-bowel causes of chronic abdominal pain.

MATTHEW C. WIENCKE

leagues looked at changes in medical students' attitudes from more than one perspective. They asked students their perception of various issues in relation to them personally ("self") and their assessment of the value placed on the same issues by the entire medical system ("system"). Six issues were examined: communication, empathy, shared decision-making, whole-patient care, prevention, and teamwork.

The study is part of an ongoing Dartmouth initiative called the Medical Education Assessment Project (MEAP). It uses a tool called a "core survey"—a detailed questionnaire that assesses student personalities, attitudes, beliefs, values, and activities. It has been administered to several hundred students at a number of medical schools. The attitudinal study was based on the results from the University of Washington Class of 1999, a group that had an unusually high participation rate. They took the core survey three times—during orientation, midway through year two, and during year four.

Researchers are usually happy to explain the import of their work, but Reed would rather not be quoted about this study. She says it is up to each school to assign values to the findings.

**Findings:** What *were* the findings? From a system perspective, students' perception of the importance of communication, shared decision-making, and teamwork increased over four years; empathy and prevention were unchanged, and whole-patient care declined. And from the self perspective, communica-

MARK AUSTIN-WASHBURN



Upper Valley resident Tom Brody, a former *Sports Illustrated* columnist, was a good sport about a recent colonoscopy he had at DHMC.

## Poetry about a deep, dark subject

Tom Brody wrote the bit of poetic whimsy below for a recent course in the Institute for Lifelong Education at Dartmouth. Before retiring in 2001 to Grantham, N.H., Brody taught English for 30 years at Greenwich Country Day School in Connecticut. He also used to write a regular *Sports Illustrated* column, penning such memorable lines as "Win one for the Flipper" about the Miami Dolphins' first season—a reference to the team's mascot, the title character from the '60s TV show.

But Brody explains that there's also a serious side to the "ode" below, for it describes having a colonoscopy. "If you want to set your life in order," he reflects, "I think I would rather go to a doctor than a priest. I feel that when it comes down to the crunch, I'd rather have somebody . . . who has gone through the rigors of med school and all those gruesome things."

However, "gruesome" isn't a word Brody uses to describe his latest colonoscopy, which he received at DHMC. His verdict on the procedure? "It was one of the easier ones." M.C.W.

### *Ode to the Colonoscopy*

To get some insight into one's anatomy,  
Nothing beats a colonoscopy.  
If beauty, in fact, is only skin deep,  
Then peering into a bowel is a profounder leap.

What in the world will that scope reveal  
About a man who's had so much to conceal?  
A man who has gone at times astray  
Has much on his mind that he'll want to allay.

A priest is fine for a soul that's wavered  
But give me a proctologist if I want to be savèd.  
No doubt the pit beckons for want of redemption,  
But I'll settle for ridding my tract of infection.

tion, shared decision-making, whole-patient care, and prevention all declined in importance; teamwork was unchanged, and only empathy increased in importance. Thus there was an almost complete disconnect between the system perspective and the self perspective in the students' assessment of the importance of these six areas.

**Paper:** Reed is determined to be nonjudgmental about the results, though the paper notes that the self perspective may represent more subjective, emotional judgments, and the system perspective more objective, belief- or value-related judgments. If that's so, the paper says, maybe "different factors influence the direction of attitude change for each component."

Perhaps, the paper suggested, "students are exposed to two very different sets of value structures in medical school. . . . Behaviors that students see modeled, either intentionally or unintentionally, in clinical situations are likely to be quite salient in shaping how they act, what they see as important, and what they value personally as physicians, regardless of what they hear in the classroom environment. Thus, a potential conflict exists between what has been described as the medical community's 'stated values' and its 'lived values.'"

In other words, in medical schools as elsewhere, "Do as I say, not as I do" doesn't work.

The next step for MEAP is to measure the development of students' attitudes across medical schools as well as over time.

ROGER P. SMITH, PH.D.

## Parlez? Habla? Sprechen? Flisni? In New Hampshire?

Any hospital that accepts federal funds must provide translators for patients with limited or no proficiency in English. That's a hard enough requirement for hospitals in urban areas to meet. But for DHMC—one of the country's few rural academic medical centers—it takes more than a little ingenuity.

DHMC's Office of Care Management is regularly called on to find translators for non-English-speaking patients, says Michele Blanchard, a senior care manager. The department maintains a list of local speakers of languages ranging from Arabic, Bosnian, and Croatian to Farsi, Swahili, and Turkish. (The title above includes the second-person plural form of "speak" in French, Spanish, German, and Albanian.)

**Biggie:** "It's becoming more common for us to need a Laotian speaker," Blanchard says, "in addition to Spanish, Italian, and Polish, as well as Chinese, German, Hindi, and French. French is a biggie," she adds, due to the sizable Franco-American and Franco-Canadian population in northern New England.

DHMC recruits translators from all sorts of sources. "Usually, the care provider calls us, and I fax them a list of available translators," Blanchard says. "Everything depends on the circumstances. We first try to find an employee. . . . If that doesn't succeed, our next option is Dartmouth College—we call and ask



The views are serene both toward and from the Glasses' house, which was featured in a recent spread on riverfront houses in the *NYT*.

## A Glass house makes the news

The *New York Times* recently traveled over the river and through the woods to the house of David Glass, M.D., chair of anesthesiology at DMS, and his wife, Alice. The Glasses' 190-year-old house, which sits on the banks of the Connecticut River in Lyme, N.H., was featured in a January 2003 article about beautiful riverfront homes.

Behind the Glasses' house, the lawn slopes down 100 feet to the river, where the Glasses enjoy canoeing, kayaking, fishing off a dock, and watching a slew of wildlife—everything from great blue herons, bald eagles, and mallards to minks, beavers, and bears. One winter, they even saw an otter sitting on the ice, eating a large fish. And David Glass once caught sight of a moose swimming across the Connecticut. "The river flow just brings you energy somehow," Alice Glass told the *Times*. "It makes you feel better."

The property has some other interesting features, too. A nearby milk barn (now a guest house) once served as a children's clothing factory. The main farmhouse where the Glasses live, built about 1815, has a massive central chimney that's 10 feet by 12 feet at its base, and most of the foundation is original stacked-stone drywall. When a dining room was added about 100 years ago, the builders unearthed the bones of a Native American girl dating back to the 1500s; they're now in the collection of the Hood Museum at Dartmouth College. Legend has it that the girl's spirit still haunts the house. "I haven't yet seen any ghosts, but the dogs do bark occasionally at night and we always wonder," says David Glass.

The most intriguing aspect of living along the river is seeing the Northern Lights, a phenomenon that the Glasses witness two or three times a year. "They are incredible along the river when there's no light around," explains Glass. "We came out one night and it was turquoise and red and shimmering, and it was unbelievable."

M.C.W.

if there are any students from the patient's home country."

In one case, a DHMC employee has become an integral part of an overseas patient's health-care team. Angela Hall, a researcher in the DHMC development office, is a native of Rome. Last year, an Italian cancer patient came to DHMC to see radiation oncologist Eugen Hug, M.D., who had overseen her care at Loma Linda Hospital in California before he joined the Dartmouth faculty.

The patient "followed Dr. Hug to Dartmouth," says Hall. "Now that she's home in Italy, she has all her follow-up tests—MRIs, body scans—done there. Her doctor in Italy writes a report and sends it here. I translate the report for Dr. Hug, and then I translate Dr. Hug's response back to [her] and her doctor."

**Case:** In another case, Hall served as translator for a woman from southern New Hampshire who came to DHMC for a consultation. "The woman's husband spoke English, but the doctor thought it was very important to make sure the woman herself understood the importance of certain things," says Hall, who also speaks German.

Any other languages? "Only three," Hall responds in flawless English. When someone as linguistically adept as Hall is not available—and not even the melting pot of an academic community can provide the appropriate skills—Care Management uses a commercial language line, an 800 number that connects callers with a translator.

MEGAN McANDREW COOPER

MEDIA MENTIONS: DMS

**A writing lesson for the reading pleasure of M.D.'s and patients**

It's estimated that more than 6,000 pages of medical information are published each day. How readable are those reams of material? Not very, according to a recent study in the *British Medical Journal* (BMJ) by two DMS faculty members.

**Index:** William Weeks, M.D., and Amy Wallace, M.D., used two common measures—the Flesch formula and the FOG index—to assess the readability of the articles in six months of the BMJ and the *Journal of the American Medical Association* (JAMA). Both indexes use such factors as words per sentence and syllables per word to compute readability. On the Flesch scale, the lower the number, the harder the reading; a score of under 30 indicates very difficult material. For example, a typical car insurance policy is 10, *Newsweek* magazine 50, and *Reader's Digest* 65.

The researchers found the BMJ (at 31.5) to be slightly easier reading than JAMA (27.8). They also rated articles by the first author's nationality; British authors scored 31.9, and U.S. authors 27.7.

"Virtually all of the medical manuscripts we evaluated were extremely difficult to read," they concluded. "Improving the readability of medical manuscripts may enhance their consumption—by both clinicians and the general public." (Their article scored 34.6 and this story 48.3.)

ALAN SMITHEE

**A**mong the people and programs coming in for prominent media coverage in recent months was **Elliott Fisher**, a professor of medicine and the lead author of a major study on Medicare spending patterns. "Increased Medicare spending does not necessarily translate into superior quality of care or improved health," said the *New York Times* of Fisher's study. "On most measures, both the quality of care and outcomes of care were better in the more conservative regions," Fisher told National Public Radio's *All Things Considered*. And the *Wall Street Journal* wrote: "The federal Medicare program spends about 60% more for health care for beneficiaries in White Plains, N.Y., and Detroit than it does in Rochester, N.Y., and Grand Rapids, Mich. . . . 'The belief that more medical care is better is deeply entrenched in our system,' says Elliott Fisher." See page 3 for more on his study.



The same theme, in a different patient population, was the subject of a story by the European wire service Reuters: "When it comes to having doctors who specialize in the medical problems of premature infants, a new study suggests that more is not necessarily better. A research team from Dartmouth found that premature babies were just as likely to survive in regions of the United States where the number of specialists and special neonatal care units was below average, compared to regions where the number was high." The article quoted researcher **David Goodman**, M.D., as saying, "It's possible that babies can be harmed if they are subjected to too much specialized care." See the Fall 2002 issue for more on this study.



An *Atlantic Monthly* feature quoted DMS's pioneering outcomes researcher: "'There is a certain level of care that helps you live as long and as well as possible,' says Dr. **John Wennberg**, director of the Center for the Evaluative Clinical Sciences at Dartmouth Medical School. 'Then there's excess care, which not only doesn't help you live longer but may shorten your life or make it worse.'"


*Parenting* magazine, in an article about what makes for a rewarding birth experience, addressed the decline in vaginal births after cesareans, or VBACs: "Many medical experts are concerned that women aren't offered the option of a VBAC as often as they should be. 'Three out of four women who've had a prior C-section could probably deliver vaginally. Yet doctors and hospitals are eliminating this option because of a lack of clear national guidelines and the threat of malpractice,' says **Michele Lauria**, M.D., an associate professor of obstetrics and gynecology at Dartmouth. . . . 'Women should have a choice about VBACs.'"

Another aspect of motherhood was the subject of a feature in the *Dallas Morning News*. "An estimated 20 percent of women will experience depression sometime in life—disproportionately in the child-bearing years. And the disease underlies many of the problems families struggle with in their children, says Dr. **Ardis Olson**, a professor of pediatrics at Dartmouth. 'Mothers who are depressed report more child behavior problems in the first year of life, they report more difficulty connecting to their children . . .,' she says. Depressed mothers are also less likely to read to their children, to discipline them consistently, and to protect their health and safety with measures such as seat belts, Dr. Olson says."



A front-page story in the *New York Times* science section focused on new findings about RNA's role in the cell. "Some genes, scientists found, produce tiny RNAs, known as micro-RNAs. . . . The first such micro-RNA was discovered in the early 1990s by Dr. **Victor Ambros** and his colleagues at Dartmouth. Because the finding was so unexpected, 'there was a considerable amount of legitimate doubt,' Dr. Ambros recalled." See page 6 in this issue for evidence that there is no longer any doubt.





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

A DMS expert on the safety of the blood supply was quoted recently in the *Wall Street Journal*: “Two-thirds of the [transfusion] problems take place at the bedside,” says Dr. **James AuBuchon**, who runs the blood bank at Dartmouth.” And in the *Atlanta Journal-Constitution*: “Self-donation dropped in the '90s as the public gained more confidence in the blood supply, said Dr. James AuBuchon.” See page 26 for more on the subject.

The *Boston Globe* took a look at “the infamous Oedipal complex,” saying experts now



advise against reading too much into children's behavior. “The danger . . . is that by overreacting, we shame our sons. ‘That can deprive them of a chance to grow emotionally,’ says child and adolescent psy-

chiatrist Dr. **Robert Racusin** of Dartmouth. . . . For those moments that do look like sexualized behavior toward mom or jealousy toward dad, Racusin tells parents to deconstruct it: ‘Why would he be jealous? Does he really want to see his father displaced, or is it more likely that he's looking to fulfill the innate human need to have connection?’”

The *New York Times* got expert commentary on a new online alcohol-education program aimed at college students. “Having some



sort of basic way of educating students about alcohol makes a lot of sense,’ said Dr. **Jack Turco**, director of health services at Dartmouth College [and an associate professor of medicine at DMS]. But

with an incoming class of 1,100 students, ‘it's next to impossible to get individual classes and enough people to teach them.’”

The *New York Times* recently focused on “what some patients call ‘chemo brain,’” citing growing evidence that “chemotherapy can, in some cases, cause problems with

memory and concentration. . . . Dr. **Tim Ahles**, a psychologist at Dartmouth, said, ‘Part of the reason that this whole issue is coming more to the fore now is that we're seeing increasing numbers of long-term cancer survivors who are wanting to get back to their routines, so increasing numbers of people are having problems.’”

The world is still beating a path to the door of Dr. **Heinz Valtin**, almost a year after word leaked out that he had debunked the dictum to drink eight 8-ounce glasses of water a day. Noted *Reader's Digest*: “There's no proof we all need to drink ‘8x8’—eight 8-ounce glasses of water—each day, according to Dartmouth Medical School physiologist Heinz Valtin.” Reported *Health* magazine: “Valtin says that cotton-mouthed feeling generally kicks in before your body gets significantly dehydrated.” And *The Guardian*



of London got Valtin to reveal his own drinking habits: “The two-litres-a-day mantra has recently been challenged by a number of respectable sources. Professor Heinz Valtin (who drinks just one glass

of plain water a day, plus about five glasses of juice, coffee, milk, and other fluids), is a kidney specialist at Dartmouth Medical School in America.” See the Fall 2002 issue for more about Valtin's conclusions.

The media turned for commentary on January's space shuttle tragedy to two Dartmouth faculty members. **Jay Buckey**, M.D., an associate professor of medicine and a former astronaut, shared the perspective of someone who'd flown on *Columbia* in a *New York Times* op-ed essay: “It is important to remember that the *Columbia* crew ventured into space for a purpose, to do experiments needed for long-duration space flights.” And the *Psychology Today* Web site speculated about the state of mind of the three astronauts on the international space station: “They knew they might experience a seri-

ous personal loss while in space, and they accept that,’ says **James Carter**, Ph.D., of Dartmouth Medical School. . . . Even so, NASA is concerned about the psychological ramifications of long-duration missions—such as a possible trip to Mars. Carter is now working with NASA in developing virtual reality therapy for astronauts.” See the Winter 2002 issue for more about that project.

“How safe is your hospital?” was a recent headline in *Consumer Reports*. The magazine known for its ratings of washing machines and cars didn't rank



hospitals but did offer advice on how to determine the quality of a given hospital: “The amount of experience a hospital or doctor has with a particular health condition seems to

play a key role in the quality of care delivered. A 2002 study headed by **John Birkmeyer**, M.D., chief of general surgery at Dartmouth-Hitchcock Medical Center, found that the risk of death following surgery for pancreatic cancer—an especially difficult operation—is 360% greater at the lowest-volume hospitals than at the highest-volume ones.”

The possibility that within a decade there may be a “morning-after pill” to prevent post-traumatic stress disorder was reported in the *Milwaukee Journal-Sentinel*. Re-

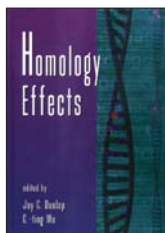


searchers have focused on the naturally occurring brain chemical neuropeptide Y, which “helps buffer the effects of stress and anxiety. ‘If we could somehow bottle it or train people to mobilize their own neuropeptide Y, that would be great primary prevention,’ said Dr. **Matthew Friedman**, speaking at the American Association for the Advancement of Science's annual meeting in Denver.” See the Winter 2001 issue for a profile of Friedman, who is a professor of psychiatry and of pharmacology at DMS.

F R O M O U R P A G E S

**New on the bookshelf:  
Recent releases by  
DMS faculty authors**

*Homology Effects*. Edited by Jay C. Dunlap, Ph.D., professor of genetics at DMS; and C.-ting Wu, Ph.D.; Academic Press; 2002. This volume in the Advances in Genetics series, with contributions from a number of



geneticists, explores the effects and impact of homology through observations of prokaryotes, fungi, nema-

todes, plants, insects, and mammals. It includes chapters on RNA-mediated gene silencing and the sensing and telecasting of the presence of homology.

*Managing Pain Before it Manages You*. By Margaret A. Caudill, M.D., Ph.D., adjunct associate professor of anesthesiology at DMS; Guilford Press; 2002. The revised edition of this practical



guide discusses the skills needed to function and cope with chronic pain, as well as with diseases such as diabetes and

heart disease. Topics covered in the book include drug recommendations for pain, maintaining an active lifestyle, anger management, nutrition, alternative medicines, and effective dialogue between pain sufferers and health-care professionals.

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

**From the Spring 1989 issue**

"I arrived for my admissions interview with Dr. Harry Savage amidst construction of what is now the Remsen medical building." So wrote Valerie Leval Graham, M.D., a member of the DMS Class of 1962. "There were construction vehicles and piles of building materials everywhere, and the surrounding area was a sea of mud.

"I could see that there was a big circular drive going up to the door of the place, but I didn't want to get in the way of the workmen. So I parked my car on the far side of the drive, got out, and tried to figure out the best route to the door. The whole area was all mud and sand, and it looked as if it was better to go across the middle than around the edges. It got muddier and muddier as I went, however, and about halfway across I lifted my foot—and my shoe stayed behind. When I leaned over to pick up my shoe, my other shoe came off. By then, both my shoes were just balls of mud.

"I looked up and there was this old fellow—he looked like a workman, in his shirtsleeves—standing in front of the Medical School. I figured he must be laughing his head off. But there was nothing to do but keep on going, and I finally got to the other side with my muddy feet. I brushed them off and asked the man if he could direct me to some water where I could clean my shoes. He didn't say much, just pointed round the corner to an outlet. I rinsed off my shoes, put them back on, and hoped nobody had been watching out the windows of the Medical School. Then I went back to the man and asked, 'Do you know where I can find Dr. Savage?' And he said, 'I'm Dr. Savage.'

"Despite that dubious start, I was accepted into the Class of '62." Graham was the first woman student at Dartmouth Medical School and the only woman in her class of 24.



The Class of 1962 contained 23 men—and DMS's first woman student.

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

**Dartmouth-Hitchcock Medical Center** was ranked as one of the nation's top 100 hospitals by Solucient, a leading health-care data firm. Solucient, which grades over 6,000 U.S. hospitals, put DHMC among the nation's top 16 major teaching hospitals. Other hospitals in the "major teaching" category included the Mayo Clinic, Massachusetts General Hospital, and the Cleveland Clinic. Solucient picked the top 100 based on four criteria: quality of care,



including clinical outcomes, medical errors, and patient-to-staff ratio; stability of operations and staffing; financial health; and adaptation to the environment. The rankings were published in *Modern Healthcare* magazine.

The **Children's Hospital at Dartmouth** was ranked by *Child* magazine as one of the nation's top 40 children's hospitals. This ranking was based on a survey conducted



by the Joint Commission on Accreditation of Healthcare Organizations; the survey examined various factors,

including treatment protocols, cancer survival rates, record-keeping, the dispensing of medication  
*continued on page 60*