

FACTS & FIGURES

Glove compartment

Make mine purple neoprene, please!



1758

First report of medical gloves (made from sheep intestines)

1890

First use of latex (rubber) gloves during surgery

10 billion

Estimated annual use of latex gloves in the U.S. since the introduction in 1987 of universal precautions against infectious diseases

8-12%

Estimated percentage of health-care workers allergic to latex

4,073,267

Pairs of medical gloves used annually at DHMC

\$585,602

Annual cost of those gloves

90

Number of different sizes and kinds of gloves (sterile and nonsterile; latex, vinyl, neoprene, nitrile; etc.) that DHMC stocks

6

Number of different colors those gloves come in (natural latex, clear, blue, green, yellow, and purple)

SOURCES: KCHEALTHCARE, U.S. DEPARTMENT OF LABOR, MEDICINENET.COM
DHMC FIGURES APPLY TO THE FEBRUARY 2004-JANUARY 2005 PERIOD

Training physicians to help patients take ownership of their care

For much of her 35-year career, Dr. Martha Regan-Smith has investigated ways to improve physician education. Now, paradoxically, that interest has her focusing on patient education. She will soon complete a Helmut Schumann Fellowship—designed for mid-career professionals seeking new approaches to problems—and begin training doctors how to teach their patients better self-management of chronic disease.

Care: “Most illness and most cost in the [health-care] system is chronic disease,” says Regan-Smith, a rheumatologist and a professor of medicine at Dartmouth. Patients with diseases like arthritis and diabetes, which require careful monitoring of symptoms and adjustments in behavior, could assume more responsibility for their own care. And yet, Regan-Smith explains, many do not—either because they don’t know how or because their doctors don’t know how to encourage self-management.

Believing strongly that care should be designed both for and with patients, Regan-Smith applied for the two-year Schumann Fellowship with the goals of learning more about patient self-management and finding or creating a curriculum to train doctors in using this technique.

Her quest took her from nearby Springfield, Mass., where she learned the basics of self-management; to Stanford, where she

took a course with Dr. Kate Lorig, a pioneer in self-management for patients with arthritis; and ultimately to Flinders University in Adelaide, Australia, where all the pieces of the puzzle came together as she learned how physicians can promote self-management using a method called the Flinders Model.

Developed by Dr. Malcolm Battersby, the Flinders Model is based on a structured way of interviewing patients. First, patients take a short self-assessment test to determine their current level of self-management skills. Next, a doctor or another health professional asks a series of questions to get at patients’ understanding of their diseases and medications, as well as their involvement in monitoring symptoms and adjusting behaviors. Finally, patients are asked about the impact of the disease on their daily life. During the interview, Regan-Smith explains, the doctor’s role is to listen and let the patient talk.

Goal: Then the doctor will ask, “What is your biggest problem in life and how do you feel about it?” Often the disease itself is the biggest problem and the patient’s goal is to reduce its symptoms, but not always. Regan-Smith says patients of hers have identified goals such as “I want to be able to renovate the bathroom in our house” or “I want to be able to put my children to bed at night.” When they are working toward a realistic goal chosen by the patient, it is easier for the patient and the doctor to come up with a care plan together—and for the patient to stick with it.



Martha Regan-Smith became one of the first Americans to train in the Flinders Model of patient empowerment.

One of Regan-Smith's patients, James Cote of Etna, N.H., was diagnosed with rheumatoid arthritis about 10 years ago. Now 56, Cote had to retire from his job with the phone company earlier than he'd have liked and to curtail activities he enjoyed, such as gardening and hunting.

Flare-up: "The thing about rheumatoid arthritis," Cote says, "is that you feel like you can still do things. But if I went out and hunted all day, I wouldn't be able to move the next day." Not surprisingly, the disease made him despondent, especially when he gave in to his urge to behave "normally" and then paid for it with a flare-up that brought days of pain and near-immobility.

A little over a year ago, Regan-Smith invited Cote to accompany her to Springfield for

the patient self-management seminars. That changed everything, Cote says. Instead of fighting his disease and its treatment, he has learned to work within its limitations. Now, if he wants to go hunting, he goes out for a few hours. He might work in his garden for an hour at a time. "You can still do things," he says. "You just have to do them in moderation. If people could learn how to do this," he adds, "they could take better care of them-

selves and they wouldn't have to run to the doctor all the time."

While she was in Australia, Regan-Smith observed medical students being trained to use the Flinders Model; she hopes that American students will soon have the same opportunity. In fact, she says, she hopes that training in patient self-management will be mainstreamed into American medicine within the next five years.

Regan-Smith will be doing her part to bring that about. She was recently invited to present two workshops with Malcolm Battersby at the International Conference on Patient Self-Management, in British Columbia. "This is a big honor for me," she says, "with less than two years' work in self-management."

CATHERINE TUDISH

Students address big needs behind bars

Prison health care is a really, really, really big public-health problem," says Olga Lemberg, a second-year student at DMS. Lemberg and her classmate Maricruz Merino—two of several Albert Schweitzer Fellows at DMS this year—are doing their part to address the problem. They are organizing health-awareness workshops at the New Hampshire State Prison for Women, in Goffstown, N.H., where such services are desperately needed.

Anger: A December 2004 report from the New Hampshire Commission on the Status of Women (NHCSW) makes it clear just how big the need is. "Outside of chaplaincy services, the New Hampshire State Prison for Women has no state-funded life skill programs," the report notes. In contrast, the New Hampshire State Prison for Men has 11 state-funded programs in areas such as anger management, domestic violence, and parenting, as well as Alcoholics Anonymous and Narcotics Anonymous meetings. At the women's facility, similar programs are run only by volunteers, like Lemberg and Merino.

"For us, the main goal is that we are providing these women with skills, practical skills, life skills, to productively live out their time in the prison and then, when they get out, in their lives outside of the prison," says Lemberg. Working with the prison's mental-health director, Lemberg and Merino decided to focus on seven topics: nutrition,

substance abuse, oral health, HIV and AIDS, other infectious diseases (especially tuberculosis and hepatitis C), mindfulness and meditation, and patient-doctor communication.

So far, the prison workshops have been well received by the inmates who have attended them. "They were more receptive to us than I thought they would be," says Merino. "I really felt like they might write us off as two medical students who know nothing about what they've been through. Just going there made me realize that these women, for the most part—the ones that we've met—they want to better themselves."

Lemberg and Merino are not teaching the sessions themselves but have recruited specialists from DHMC and DMS. Clinical dietician Jil Shangraw led the session on nutrition. "It was 100% better than I thought it would be," says Shangraw. The women had done some research about nutrition before the session and asked good questions, she explains, such as how much vitamin C they should take and whether powdered eggs are as healthy as regular eggs. "Their interest was one of the best I've ever seen," says Shangraw.

"That workshop was basically to make sure they had the information to make the best choices they possibly could given what they are provided at the prison," Lemberg explains. For example, they may decide to drink plain water instead of "juice" that could be essentially sugar water.



BABY STEPS: Cheryl Boyarsky of Bedford, N.H., ran the New York Marathon last fall as a benefit for DHMC's In Vitro Fertilization Program. The mother of triplets born by assisted reproduction, she raised \$8,327 for the cause.

Since volunteers run the health- and life-skills programs in the women's prison, those programs tend to be "sporadic and [the] quality may be inconsistent over time," according to the NHCSW report. In an effort to avoid that trap and ensure that their program continues, Lemberg and Merino are compiling curriculum and contacts for each of the sessions. In addition, they're recruiting first-year DMS students to take their places.

Active: Sustaining projects is also a core objective of the national Albert Schweitzer Fellowship program, which funds community-service projects run by graduate students.

Merino adds that she and Lemberg hope the presenters they've recruited will also be part of the effort to keep the program going. "They get to see what it's really like" for women behind bars, she explains. "And if they get excited about it, they may spread the word."

JENNIFER DURGIN



Olga Lemberg, left, and Maricruz Merino have been bringing health education to imprisoned New Hampshire women.

ERIC VILLENUEVE

Learning to confront physician substance abuse

We are incredibly selfish people. We make family and colleagues suffer," said a doctor who coped with a longtime drug addiction while in practice. He was speaking to an auditorium filled with rapt DMS students as part of a class on physician substance abuse; it is one session in a fourth-year course for medical students called Health, Society, and the Physician. "It will happen at one time for all of you—that you will have to confront a colleague about this," continued the doctor. That was the reason he and two other doctors were willing to share their stories.

Struggle: Talking to someone about their addictive disorder can be extremely hard, Dr. Seddon Savage told the students. Savage, the director of the Dartmouth Center on Addiction, Recovery, and Education, had put together the two-hour class. People still struggle, she said, with the idea that substance abuse is a disease. Other caregivers can be afraid to confront a colleague because they may think they'll be perceived as pushing some kind of moral message. "I think that doctors are generally pretty strong and independent people, and it's difficult for nonphysicians especially to bring up issues that suggest they're less than full, whole, and strong," explains Savage in a later interview.

Medical researchers, physicians, and the public are starting "to understand and believe that addiction is a chronic medical condition" and to treat it that

way, says Savage. Likewise, medical schools are "just beginning to educate young, evolving physicians—medical students—in addiction medicine and in the chronic medical illness that is addiction. And until that infuses medical education, the perceptions of the general public and the operations of the health-care system are not going to optimally address addiction in any one, including physicians."

A 1992 study in the *Journal of the American Medical Association* found that addicted physicians are most likely to practice anesthesiology, followed by emergency medicine, family practice, and general surgery, and that alcohol is the most common substance of choice, with opiates and benzodiazepines close behind.

Stress: For physicians, says Savage, substance use can look like an easy way to relieve the stress of their work—the responsibility for others' health; the privilege and burden of knowing intimate details of others' lives; the long hours; and the competing demands of work, family, and self-care. Some medical professionals hike, listen to music, or exercise to let off steam, while others, Savage says, "kick the dog" or turn to substances.

Addiction is tricky to treat, she explains, since addicted individuals often deny the hold the drug has over them. They crave it because their brain tells them they need it—a phenomenon called the "hijacked brain," since the craving can disorder thinking. The manipulation and de-



JON GILBERT FOX

Seddon Savage is helping to open medical students' eyes to the complexities of substance abuse among physicians.

nial addicted individuals engage in to protect or regain their use of a drug "are sometimes pretty onerous," says Savage.

One way they can seek help, she told the soon-to-be doctors in the class, is through the committee dealing with physician health that every hospital is required to have. Such committees don't provide direct treatment but make treatment referrals. Physicians can seek help directly; more often, referrals come from friends, colleagues, or hospital administrators. The committees make sure addicted individuals follow the treatment protocol. "The physician health committee is a wonderful concept because it allows us to address health problems as health problems, not as disciplinary problems," says Savage.

MATTHEW C. WIENCKE

Celebration serves as a foundation for \$250-million campaign

Today we are faced with an enormous explosion of new knowledge,” Dr. Stephen Spielberg, DMS’s dean, told a crowd of people who gathered at DHMC at the end of November to celebrate medicine at Dartmouth. “The challenge then is how to integrate this new knowledge into our curriculum—the teaching of medical students—and into the care of patients.”

The “Celebrating Dartmouth Medicine” event featured a dinner for DMS and DHMC supporters, plus panel discussions and presentations the next day by prominent faculty members. Held just a few weeks after Dartmouth College’s announcement of a Collegewide campaign to raise \$1.3 billion by 2009, the DMS event laid a foundation for the official launch of DMS and DHMC’s portion of the campaign, which has a goal of \$250 million; that launch is scheduled for late May.

Session: A session titled “Are We Better Off Today than 200 Years Ago?” was a reprise of a panel offered at the College launch in New York City. Once again, Dartmouth alumna Susan Dentzer—health correspondent for the PBS *NewsHour*, as well as a DHMC Trustee, a DMS Overseer, and a former College Trustee—moderated a provocative discussion between Dr. Mark Israel, director of Dartmouth’s Norris Cotton Cancer Center, and Dr. John Wennberg, direc-



ALL: JON GILBERT FOX



Friends of DMS and DHMC came from near and far for a celebratory event in late November. A day of insights into medicine at Dartmouth was preceded by a gala dinner enjoyed by 1 Susan and Peter Williamson; 2 Mimi and George Bennett and DMS Overseer Al Mully; 3 Sheila Tanzer and Kathy and David Clem; 4 Cynthia Blake (getting her copy of the new DMS history autographed by author Constance Putnam); 5 Al Griggs and Dartmouth President James Wright; 6 DMS Dean Stephen Spielberg and Susan Dentzer; 7 Peg Thomson and Jack Wennberg; 8 Peggy Vail; and 9 DMS alum Norm Payson (see page 13 for more about Payson).

HI, TECHNOLOGY: Incoming Dartmouth medical students are now, as of the current first-year class, required to have a personal laptop computer (a computer was recommended before this year but not required).



tor of the Center for the Evaluative Clinical Sciences (CECS).

“I think there’s no question that the future is extraordinarily bright,” said Israel. He described several advances, including new drugs, that have been made in medicine. “The beginning of the end of cancer is today and the things that we do today.”

Wennberg, however, pointed to problems in the health-care system—variation in health-care utilization across the country; inequitable distribution of resources; and the fact that too much health care can be worse than too little. He also noted that medical innovations should not be rushed to market but must be thoroughly evaluated to see what works best. And, he added, providers should encourage patients to weigh the risks and benefits of health-care choices so they make informed decisions about their own care. “Most of the decisions are being made by the providers and not the patients,” he said.

Productive: At another session, titled “Rehabilitation of People with Severe Mental Illness,” Dr. Robert Drake talked about his success achieving what everyone else had assumed was impossible—helping the severely mentally ill find employment and reestablish productive lives. Drake is director of the New Hampshire-Dartmouth Psychiatric Research Center.

The final session, on “Pain, Suffering, and Opportunity,” featured presentations by Dr. Joyce DeLeo, director of the Neuroscience Center at Dartmouth; Dr. Joseph Cravero, director of

the PainFree Program at the Children’s Hospital at Dartmouth; and Dr. Ira Byock, director of palliative medicine at DHMC. DeLeo described her research on the mechanisms of chronic pain and her efforts to help biotech companies translate lab discoveries into drugs. Cravero, who has been evaluating sedation safety and efficacy, explained how the PainFree Program, created in 2002, helps children undergo medical procedures without undue anxiety or pain. And Byock, an internationally renowned advocate for high-quality end-of-life care, talked about what DHMC is doing to ensure comfort and dignity for people who are dying.

Attendees also had a chance to interact with Dartmouth medical students to learn about student-run community service projects. And the *Dermatones*, an *a cappella* singing group made up of first- and second-year DMS students, treated everyone to a special performance.

“We shared with you just a very small fraction of what goes on” at DMS and DHMC, Spielberg said in his concluding remarks: basic sciences, applied sciences, clinical care, and community outreach. During the campaign, he said, “we’ll talk about our goals for the future . . . in terms of the things that we really feel committed to doing for the Upper Valley, for New England, for our country, and for our world. It will be great fun and joy for all of us to continue that dialogue as we’re going forward in trying to transform medicine.”

Laura Stephenson Carter

DMS alumnus gives his alma mater \$2 million toward scholarships

It all started with Dr. Norman Payson scratching his head and thinking, “What’s going on? This is crazy.” As a young family physician in a California hospital in the 1970s, Payson noticed major pitfalls in the way health-care payments were made. At the time, most insurance companies did not cover outpatient care—so people who were not very sick were often admitted to the hospital for routine procedures. If unnecessary hospitalizations could be avoided, he reasoned, “you could that much more afford to pay for immunizations, prenatal care, for medications, which normally were not covered by insurance plans.”

Economic model: This was the “basic economic model” of early health maintenance organizations (HMOs), he explains.

Gradually, Payson, who is a 1973 graduate of DMS, became more involved with the delivery of health care and less directly involved with patients. One hospital committee led to another, family priorities led to a move to New Hampshire, and, in 1985, Payson founded Healthsource in Concord, N.H.

Quickly: The HMO grew quickly, spreading throughout New Hampshire and into Maine and the Carolinas. By 1989, Healthsource was generating revenues in excess of \$40 million. And in 1997, it was sold to Cigna for \$2.2 billion.

Payson says that he learned the business of HMOs by happenstance, but he’d like to help formalize that process for future DMS graduates. So he’s donated \$2 million to the Medical School to do just that. “Dartmouth took care of me,” says Payson, who grew up in New Jersey as the son of a welder and attended DMS on scholarship. “I



NARR WASHBURN

Norm Payson, who learned the business side of medicine on his own, has given DMS \$2 million to help future medical students, including any who want to get an M.B.A.

owe Dartmouth everything for my education.”

Payson’s gift will be divided equally: half will provide scholarships for New Hampshire students to attend DMS and half will sponsor a select group of DMS students who wish to pursue an M.B.A. at Dartmouth’s Tuck School of Business, in addition to their medical degree. “It’s very expensive to go to med school and to go to business school, and to do both is really a hardship,” he says.

By helping to train physicians in business, Payson hopes to bridge the “disconnect between what really happens in the marketplace, how health care is delivered, how it’s financed, and medical science.”

Marketplace: He explains further: “They’re different fields really. So physicians don’t necessarily understand, nor should they understand, the marketing of health insurance, or what goes on in the marketplace, or what are the economics of drug development, or how hospital economics work. It’s not their field to understand that. But Tuck students, on the other hand, are well groomed in business and they understand markets, finance, and business, but obviously they don’t have the health-care background.”

Payson attributes his own success in building Healthsource—and later saving New York-based Oxford Health Plans from financial collapse—to his knowledge of both medicine and business, as well as to his professors at DMS. “I got a truly healthy sense of skepticism . . . about how



MARK WASHBURN

There are lots of flower beds, as well as sickbeds, at Dartmouth-Hitchcock.

Spring bulbs light up the DHMC campus

Poets discovered the daffodil long ago: “And then my heart with pleasure fills, and dances with the daffodils,” enthused William Wordsworth in 1807. Health-care professionals have more recently become devotees of the cheery spring flower. In 1970, the American Cancer Society adopted the daffodil as a symbol of hope. And daffodils—as well as tulips and daylilies, all planted by volunteers—have brightened the grounds of DHMC since the 1991 move to the Lebanon campus.

More recently, in 2000, the Friends of the Norris Cotton Cancer Center sponsored the creation of a Garden of Hope, featuring winding stone walkways, secluded benches—and lots of flowers. During the past two years, however, as DHMC’s Project for Progress expansion was under way, more tools and construction equipment than blooms and greenery were in evidence. But this spring, the Garden of Hope will be a garden once more—a quiet refuge where patients, visitors, and staff can slow down and pay attention to their spiritual health amidst the therapeutic beauty of nature.

The Garden of Hope was inspired by the Zen gardens in Kyoto, Japan. Dr. O. Ross McIntyre, former director of the Cancer Center, recalls observing visitors there “sit quietly on a bench alongside the garden and stare at it, while strength to face what comes flow[ed] from the garden into them.”

DHMC has now taken over ongoing maintenance of the Garden of Hope, while the Friends plan to revive the twice-yearly planting parties they used to host to encourage local residents to take part in the improvement of the flower beds. “People would bring sandwiches and share a few hours of their day,” recalls Judith Rocchio, a former NCCC staff member.

Paul Goundrey, grounds engineering supervisor for the Medical Center, looks forward to having even more flowers around DHMC. The daffodils, daylilies, and tulips, he says, truly make the Medical Center “complete.” G.C.C.

health care is delivered,” he says. He was introduced to the ideas “that our medical records are run amuck; that there’s no communication between physicians; . . . that one should be more skeptical about how health care is delivered; that we can do better—provide better care [that is] more affordable, more responsive to patients.” These are among the concepts that later became embodied in Dartmouth’s Center for the Evaluative Clinical Sciences (CECS).

Dartmouth now has the opportunity “to be a model for how health care can be delivered better. And the glue is CECS, because CECS is such a national leader in studying variation of practice patterns and outcomes,” says Payson, who has served on the DMS Board of Overseers since 2001. He also teaches health-care finance to Tuck and CECS students and is part of a workgroup—led by Dr. Paul Batalden at CECS—that is focused on reducing costs within the health-care system.

Formalize: Ultimately, Payson hopes that his gift will help to train some of the future leaders of the health-care marketplace. “Who’s going to be the CEOs of the big pharmaceutical companies?” he asks. “Who’s going to run the big biotech companies? Who’s going to help run the insurers of the world and all the rest? We should train some of those people, rather than people just randomly learning and doing it. That’s good, too,” he adds, “but it’s good to really formalize the educational pathway.”

ANNE VILLENEUVE

\$2 million grant will aid in the fight against AIDS in Africa

The DARDAR Health Project at DMS has been fighting AIDS in Tanzania—one patient, one scientist, and one student at a time. The project began in 2000 as an ambitious but single-focus study of tuberculosis (TB) in AIDS patients. Now it encompasses a health clinic in Dar es Salaam, an elective for DMS students, a fellowship underwritten by the National Institutes of Health's Fogarty International Center, and studies related to HIV, TB, and hepatitis C. Next on the horizon is the establishment of a pediatric program in Dar es Salaam, thanks to a \$2-million grant from the Foundation for the Treatment of Children with AIDS (FTCA).

"The new grant actually provides money for a number of different projects," explains Dr. Fordham von Reyn, principal investigator for DARDAR. "The most important of these is a comprehensive HIV-care program for HIV-positive children of the mothers in our DARDAR study. We have done a survey of approximately 1,200 women in the study and have estimated that they have about 100 HIV-positive children, none of whom are in treatment."

Antiviral: "Many of the women in the study have already lost children to AIDS," continues von Reyn. "A major part of this grant will be to build a facility, hire . . . staff, provide the purchase of the expensive antiviral



These satellite dishes on DHMC's roof are fostering international connections.

Teleconference connects collaborators

"Can you hear us?" Pause. "Can you hear us?" Finally, the Albanian translator, whom everyone in the DHMC conference room could see on the television screen in front of them, replied, "Yes, we can hear you. Can you hear us?" So began the first telemedicine conference between DMS and Kosova's only medical school, at the University of Prishtina.

Though the two schools have been collaborating and hosting each other's students and faculty (in the flesh) for several years now, the December teleconference marked a major advance in the collaboration. For the first time, many representatives from each institution were able to sit (virtually) face-to-face to ask questions of each other and exchange ideas, without taking the time to cross an ocean. Dr. David Nierenberg, senior associate dean for medical education at DMS, gave the main presentation, outlining the structure, approach, and goals of the DMS curriculum and of U.S. medical education in general, which differs greatly from the Kosovar system.

The first two years of medical school at DMS are primarily in the classroom, while the last two are primarily clinical. But in Kosova, the curriculum is lecture-based "right up until graduation," explains Dr. Ellis Rolett, an emeritus professor at DMS who has visited the Prishtina school several times and was one of the participants in the teleconference. "Probably the first time they get hands-on experience with a patient is when they are in their . . . internship."

In the second teleconference, which took place in late February, Prishtina medical school administrators presented an overview of their curriculum in an effort to gain feedback from Nierenberg and others who have made DMS a national leader in medical education.

"If this works," says Dr. James Strickler, also an emeritus professor, who helped organize the teleconferences, "maybe we'll try this with some other medical schools." J.D.

drugs for HIV, and then begin a treatment program."

The grant will also fund a study aimed at keeping pregnant women with HIV and TB from transmitting TB to their babies. (There are already programs to prevent mother-to-child HIV transmission.) Von Reyn and his colleagues in Dar es Salaam have found that about 15% of people with HIV in Tanzania also have previously unrecognized active TB; they suspect that a similar percentage of HIV-positive pregnant women have undiagnosed TB. "There is very little known about how to diagnose that," von Reyn explains, "the best way to treat it, and the best way to manage their newborns."

Endowment: A new DMS faculty endowment—named in honor of John L. Steffens, a 1963 Dartmouth College alumnus and a major supporter of FTCA—is also being funded by the grant. The position will be filled by an infectious-disease specialist who will serve as director of the new pediatric program.

Investing in the future is an important component of DARDAR, which provides learning opportunities for students from DMS and Muhimbili University College of Health Sciences. This past fall, Cara Mathews, DMS '05, became the first student to do DARDAR's six-week elective. The experience affected her deeply. "It is part of me, a part of every day, and a part of my future," says Mathews.

She divided her time in Tanzania between seeing patients at the DARDAR clinic and participating in rounds at the Muhim-



WORKING ASSETS: More than 30 physician assistants (PAs) work at DHMC in specialties ranging from pediatrics to orthopaedics to cardiology. PAs are licensed to practice medicine under physician supervision; it's the third-fastest-growing profession in the nation.

bili University-affiliated hospital in Dar es Salaam. "I got to see the patients when they were ill, and that was a great experience for me because the diseases are so different than what we would see here," recalls Mathews. While she was fascinated by the cases of malaria, which is uncommon in the U.S., the Tanzanian students were intrigued by the one patient who had had a heart attack—a condition Mathews had seen any number of times but the Tanzanians had not. "I had kind of thought, 'Okay, we'll treat him, and let's move on.' [But] we just stayed there and stayed there and talked about him."

Encounter: Students who go to Dar es Salaam will "encounter both infectious diseases and other diseases . . . that they would never encounter in their careers here," says Dr. Richard Waddell, a research assistant professor of medicine at DMS and one of the directors of DARDAR.

"You also get to see how these diseases are dealt with in a resource-poor setting," says Dr.

Lisa Adams. Adams is a member of the DMS faculty and oversees the Fogarty Fellowship part of DARDAR. It allows graduate students and postdoctoral fellows from Muhimbili University to study at DMS and Boston University in one of several areas related to HIV and TB—vaccine research, mucosal immunology, behavioral change, and treatment research.

The name DARDAR is based on the first syllables of Dartmouth and Dar es Salaam; in addition, "dada" means "sister" in Kiswahili, one of the local languages. That way of describing the relationship between Dartmouth and Muhimbili University has become ever more apt in the years since the program's founding. Not only strong working relationships but friendships, too, have arisen from the collaboration, according to Dr. Kisali Pallangyo, the principal of Muhimbili University College of Health Sciences.

Infected: Although HIV statistics in Tanzania remain daunting—as many as 3.3 million of the country's 36 million residents are infected—DARDAR "holds great promise for growing and serving a community that has been severely affected by the AIDS epidemic," according to Dr. Gary Noel, a 1977 Dartmouth College graduate and one of the founders of FTCA.

Pallangyo agrees. "The future of this collaboration is very promising," he says.

JENNIFER DURGIN

Incisionless surgery: Not a sci-fi movie anymore

Imagine having surgery that didn't entail a single cut through the skin—not even the small ones made as portals for laparoscopic procedures. Instead, a little robot would enter the mouth, zoom down the esophagus to the stomach, and exit through the stomach wall to other internal organs—like the appendix or gallbladder—and repair or even remove them.

Dr. Richard Rothstein, section chief of gastroenterology and hepatology at DHMC, is testing the world's only robot that might be able to do just that. The robot's flexible arms are attached to an endoscope—a tiny, flexible tube with a light and a camera lens—that's been outfitted with surgical accessories. Rothstein demonstrates the system, sitting at a computer console where he views images being broadcast from inside his research model. He uses two joystick-like devices to control the robot's movements and can adjust the robot's "hands" to mimic the precise movements of human wrists, arms, and elbows.

"The idea would be to effortlessly recreate what you would try to do with your hands inside a very small space at the tip of the instruments," Rothstein explains. He already uses endoscopy to perform diagnostic as well as therapeutic procedures, such as removing polyps and tumors in the stomach; treating gastroesophageal reflux disease; and removing precancerous cells from the intestinal tract.

The idea of incisionless sur-

gery originated with endoscopy researchers in Japan, who began removing large stomach tumors through the mouth. In the process, they would sometimes puncture the stomach wall—without apparent ill effect.

"We don't like . . . to perforate anything," says Rothstein. But the Japanese experience "led to a whole new thought process about the future of surgery . . . in the sense that we no longer needed to make incisions on the surface of the body. We could make an incision inside the stomach, go out into the peritoneal cavity, and now you have access to the appendix, gallbladder, the fallopian tubes, the liver, even the uterus, ovaries, [and] other organs."

As Rothstein worked on perfecting incisionless surgery techniques, he realized it might be possible to use surgical robots to assist in these complex procedures. About two and a half years ago, he began working with a Norwood, Mass., company that had developed a portable robot for laparoscopy—operations performed using a fiberoptic device inserted through a tiny incision in the abdomen. He thought the robot would work for endoscopy as well—operations using a fiberoptic device inserted through a natural opening in the body, such as the esophagus—especially incisionless procedures.

System: Robots aren't new to medicine. For instance, the daVinci robotic surgical system is used at some medical centers to assist surgeons performing lap-



A participant in the DARDAR study is pictured receiving either a trial vaccine or a placebo.



FIXING SQUIRREL GRAPHICS

DHMC's Rich Rothstein demonstrates the robotic incisionless surgery system that he is working to perfect.

aroscopic procedures. But that robot has rigid arms, while Rothstein's has flexible arms better suited to endoscopic, incisionless procedures. And robots also assist in peripheral activities, like the pair of voice-activated robots in DHMC's laparoscopic surgery suites. One can guide a camera inside the patient, while the other can turn lights on and off and send images from inside the patient to a desktop computer.

Although incisionless surgery in humans has not yet been approved in the United States, it is already being used in India. A surgeon there has performed several appendectomies through the stomach wall.

Rothstein hopes "his" robot and techniques will be approved for use in humans in the U.S. within a few years. It might even be possible to use the system to do incisionless gastric bypasses on people who want to lose 20 to 40 pounds, he says. So far, such procedures have been done only on people who are very obese.

Robotic-controlled incisionless surgery would have several benefits. Patients would have no external scarring and so would tend to recover faster than from invasive surgery. In addition, robots can filter out fatigue-induced tremors in a doctor's hands and include safety features such as reading a patient's ID bracelet to be sure the correct patient undergoes surgery.

And robots would allow a surgeon to operate in a remote location. Few people realize that a robot did a trans-Atlantic colonoscopy in September 2001; the surgeon was in New York City, and the patient was in France. But news of that advance was overshadowed by the tragic events of September 11.

Stages: Within the next five to ten years, "we're going to be able to do bigger operations through smaller incisions, or no incisions, if you do what Rothstein does," predicts Dr. Joseph Rosen, a DMS plastic surgeon and futurist who helped the military develop one of the first surgical robots. Rosen envisions that, one day, people will be able to swallow multiple robots that would clump together, perform an operation, disengage, and then be excreted. That may be a way off, however. "All of this is new and exciting but still in its very early stages," Rothstein says.

MARK P. LAWLEY

Promoting the intersection of healing and the arts

I specialize in 'sexy' music," accordionist Gary Sredzienski told a crowd of New Hampshire hospital administrators. To the elderly nursing-home residents for whom he often plays, Sredzienski explained, a jazz tune of the 1920s is every bit as "sexy" as a rock hit of the 1950s is to a baby boomer. He came to that realization, he said, when "a 90-year-old lady says to me, 'Play that sexy music.'"

Sredzienski was the opening act of a symposium titled "Creating a Healing Environment: The Power of the Arts and Humanities." It was sponsored by DHMC and held at Concord, N.H., Hospital. "Music as therapy can be terrific," commented Naj Wikoff, director of the Healing and the Arts Project at Dartmouth's Koop Institute and an organizer of the symposium. Someone like Sredzienski, explained Wikoff to the symposium attendees, is able to lift people's spirits and spark memories. "Getting them to sing a lot of the old songs . . . is exercising their brain," he says.

Wikoff, who is also president of the national Society for the Arts in Healthcare (SAH), has helped foster the growing recognition of the healing effects of the arts. "A lot of the more personalized activities," he says, such as storytelling, painting, and crafts, "take time. And doctors are in a time crunch. So the artist is able to spend time with

the patient, and that makes the nurses feel better because they know a very important part of healing is taking place." But it's not easy work. To train to work in a hospital, an artist must learn how to deal with disfigurement, how to uphold privacy, and how to share patients' reactions with a nurse or doctor.

Positive: At the symposium, Wikoff offered several examples of ways that art is used in hospitals worldwide to create a positive environment for patients and staff. A hospital in London, England, has huge stained glass windows in a public space, he said. "You go to the waiting room and you're flooded with light. [It's] a lot like going to church, that's how glorious that stained glass light feels. It just makes people feel like [they're] sitting inside of a rainbow." And, he added, a children's hospital in Valhalla, N.Y., has a big tank in its lobby filled with tropical fish—a sort of living kaleidoscope.



JON GILBERT FOX

Naj Wikoff poses with one of many pieces of art at DHMC—a granite sculpture titled *Owls*.

REINVENTING THE WHEEL: Dr. Patricia Watson, an assistant professor of psychiatry, cofounded Mobility without Barriers, which designed a wheelchair suited for developing countries and is helping destigmatize wheelchair use in such regions.



Wikoff has helped develop many such efforts at Dartmouth. The Healing and the Arts Project has set up a variety of arts electives and volunteer opportunities for medical students. In a 2003 survey of first- and second-year DMS students, 75% said they welcomed electives in the arts and humanities. A 2002 national survey reported that out of 100 medical schools, only 42 offered arts electives.

Impact: SAH's impact has also soared under Wikoff's leadership. Membership, consisting of both individuals and health-care organizations, doubled from 600 in 2003 to 1,200 in 2004. SAH also administers many grants, including to hospitals interested in establishing arts programs.

In a 2003 national survey administered by SAH and the Joint Commission on Accreditation of Healthcare Organizations, more than 2,500 hospitals reported having arts programs. Many such programs serve patients, and 41% of respondents to the survey reported also using the arts to serve hospital staff.

Caregivers "have a tendency of not wanting to be too close to their patients," says Wikoff, "especially with patients who are at the end of life, because it's emotionally hard. . . . The arts can help people through those transitions. They can help them deal with those fears, those emotions.

"The arts can't reduce the number of patients that a doctor or nurse has to see," he acknowledges. "There are a lot of things it can't do. It's not about curing," he says, "it's about healing."

MATTHEW C. WIENCKE

The studies weren't for real, but the "investigators" worked really hard

They had had a lot to consider when designing their clinical trials: Ethical concerns. Alternative study designs. Confounding factors. Statistical integrity. Existing published research.

From the beginning, the Dartmouth undergraduates in Biology 81 knew that they would not actually be carrying out their studies. Nevertheless, their trials had to be built for the real world. And when it came time for their final poster presentations, they realized how much they had learned.

The course was designed by Dr. Kevin Curtis, a DMS emergency physician, to help undergraduates interested in medicine learn about clinical research. "Dartmouth College students will be our future leaders in many fields, including science and medicine," according to Curtis. "The degree to which they will participate in future research will vary, but even for those who will only be reading journal articles

on the research of others, an understanding of the underlying principles is essential."

Though most of the students in the course were premeds, few had been exposed to the basic concepts of biomedical research. "Now I feel like I'm at least literate in the basic statistical terms," said Katie Muse, a senior biomedical engineering major, as she stood in front of her poster. Muse, a member of Dartmouth's junior varsity soccer team, focused her study on the effectiveness of passive-motion therapy in recovering from knee surgery—something many soccer players are familiar with.

Inherent difficulties: The students' understanding expanded even more when they got a chance to spend some time in the DHMC Emergency Department, where they helped to enroll patients in real clinical trials. And their work on their own studies gave them a sense for the difficulties inherent in certain topics.

Laura Yasaitis—a senior majoring in biochemistry and minoring in Latin American studies—found her research question difficult to tackle. "It's not like studying a specific intervention," she said. Her study looked at the accuracy of the diagnoses that Spanish-speaking patients receive in emergency departments. "I was trying to address more systematic issues," she said.

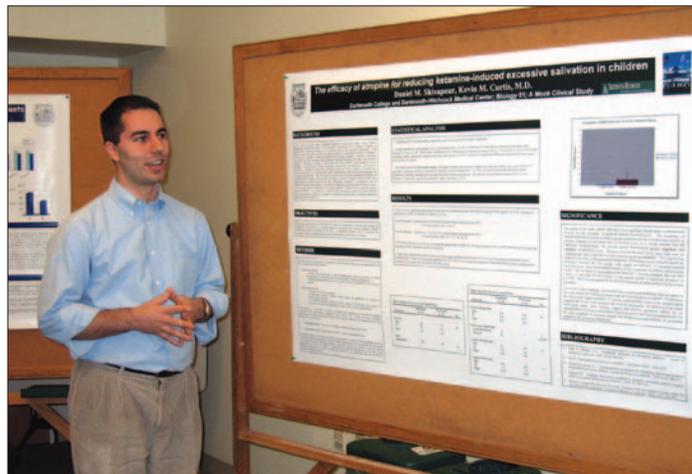
"The hardest thing" for senior philosophy major Trevor Jensen "was separating out the truth from the non-truth," he explained. "A lot of the studies, just from what I know, were pretty sketchy." His topic was the efficacy of certain edible mushrooms in reducing the fatigue often associated with breast-cancer treatments.

"This class gave me a real sort of hands-on understanding of how clinical research works," said junior Justin Altschuler, a studio arts major. His trial, on the benefits of cinnamon for diabetics, may even make the leap from the hypothetical to the real world.

Actually: During the class's poster presentation, Altschuler struck up a conversation with Dr. Todd MacKenzie, an assistant professor of medicine who studies the effects of green tea and other beverages on diabetes. MacKenzie agreed to help Altschuler find a way to actually conduct his study.

But, said Altschuler, "a lot needs to be done to get this from a poster to an actual study."

JENNIFER DURGIN



Daniel Shivapour and other undergrads produced polished-looking presentations.

GETTING CAUGHT NAPPING

“Shhhhh!” is an injunction more often associated with libraries than with hospitals. But it’s now being uttered in hushed tones for an hour every afternoon on one floor at DHMC.

The inpatient floors of big hospitals—even Dartmouth-Hitchcock, which was built in 1991 without an overhead paging system in order to reduce noise—are infamous for the constant clatter of cart wheels, beeping of monitors, and background hum of conversation among staff and visitors. The poor patient sometimes finds it impossible amidst all the hubbub to rest, much less take a nap.



But for the past several months on One East at DHMC, every day between 1:30 and 2:30 p.m., the doors of patients’ rooms are closed, the lights are turned down, and silence is enforced on the whole floor.

Although the new regime is reported to be a minor inconvenience for staff, the compulsory quiet is getting glowing reviews—no, make that *dim* reviews—from patients. A.S.

RX: TAKE A TWO-MILE HIKE

Say “prescription” and most people think of a pill—or perhaps a lotion. But the term has taken on new meaning at Dartmouth-Hitchcock Medical Center, where doctors have started issuing prescriptions for exercise. The scrips—suggesting, say, that a patient take a biweekly two-mile hike—are individualized and just as detailed as orders for medication; they may even come with a trail map.

The project is a collaboration among DMS and DHMC, several local towns and schools, the National Park Service, and a group called the Upper Valley Trails Alliance, which received a \$200,000, five-year grant from the Robert Wood Johnson Foundation to support the initiative.

Dr. Charles Brackett, an assistant professor of medicine, is director of the new program. The concept behind it is that the more specific a directive is, the more likely it is that patients will follow it. The program will also involve medical students who have volunteered to make calls to patients to offer follow-up encouragement. So that would be “Take two hikes and *we’ll call you* in the morning”? A.S.



DHMC is caring for staff as well as for patients

This spring, DHMC began “investing” in its employees’ health. By doing so, it hopes to benefit both its employees and its bottom line. The initiative, called the Health Care Worker Health Promotion (HCWHP) project, is partially funded by a grant from the U.S. Centers for Disease Control and Prevention. It provides free, voluntary health screenings for any DHMC physician or staff member on the Lebanon campus.

“A healthy workforce is a very good investment for employers,” says Dr. Robert McLellan, medical director of employee health and safety at DHMC. He believes that improving employee wellness can lower health-care costs, reduce the number of workers’ compensation claims, improve retention of current employees, and—by enhancing an institution’s reputation for treating its employees well—make the recruitment of new employees easier. Further-

more, in the field of health care, maintaining a healthy staff is important because healthy workers serve as good role models and are more likely to provide the best care possible for patients.

HCWHP has three parts. In part one, employees are offered an opportunity to participate in a 10- to 15-minute health screening that includes measuring their blood pressure and fasting blood-sugar and cholesterol levels. In part two, employees will complete, at their convenience, an online questionnaire (www.howsyourhealth.com). All participants will receive individually tailored health profiles that highlight their health strengths and weaknesses.

Parts: For most employees, the process will end at part two. But anyone with slightly elevated blood sugar—people who are at risk for developing adult-onset, or Type II, diabetes—will qualify for part three. This is a voluntary two-year study involving periodic screenings and surveys about lifestyle choices.

The HCWHP project is targeting pre-diabetes partly because the condition can lead to other chronic diseases, which in turn can lead to missed workdays and higher health-care costs. According to the American Diabetes Association, “Some long-term damage to the body, especially the heart and circulatory system, may already be occurring during pre-diabetes.” HCWHP chose to address this condition because it is easy to detect in screenings and because it re-



These posters are all over DHMC to promote a new staff-health initiative.



FRIENDS INDEED: Margie Cole of DHMC's Comprehensive Breast Program started a project called BeFriend, which pairs breast cancer survivors with newly diagnosed patients; more than 100 volunteers responded to her first appeal.

sponds well to changes in physical activity and diet.

"Increasing physical activity and improving diet have been shown to minimize the risk that people with pre-diabetes will progress to diabetes," McLellan says. "Without this intervention, the risk of progression is about 11 percent over three years." He estimates that 800 of DHMC's 5,000 employees may be at risk for developing diabetes. Of those 800, he figures about half will participate in stage three.

Access: The program will also give employees access to behavioral counseling, health education, and exercise classes. And program leaders will look for other ways DHMC can foster a culture that supports healthy behaviors; they hope all employees will become more focused on good health and will help each other make positive changes.

DHMC is not the first organization to pay attention to employee health. But as one of the biggest employers in northern New England, it has an opportunity to be a role model for the region, says McLellan. In addition, the Medical Center will be showing medical students, many of whom may become employers themselves one day, the importance of employee health.

"DHMC is rightfully proud of its continued efforts to improve the quality of health care it provides to its patients," McLellan says. "With the HCWHP project, DHMC will evaluate its efforts to improve the well-being of its own employees. To manage," he adds, "you must measure."

MARK P. LAWLEY

Cancer Center branches out both south and north

It can take less time than brewing a cup of tea to receive a radiation therapy treatment. But it can take many hours for some cancer patients, especially those in rural areas, to travel to appointments to see specialists or to get treatments such as radiation therapy. Since public transportation is spotty or nonexistent in rural areas, this can be inconvenient, not to mention exhausting and expensive.

Doctors at DHMC's Norris Cotton Cancer Center have long been aware of this problem. Ever since the Cancer Center's establishment in 1972, Dartmouth oncologists have held outreach clinics all over the region. But patients have still had to drive to DHMC to get some treatments or to participate in clinical trials—which can mean a two- to three-hour trip on a weekly or even daily basis.

But now, with one initiative to the south and one to the north, Dartmouth is greatly expanding its commitment to bring the latest cancer therapies to patients throughout the region. In February, Norris Cotton opened a newly renovated 4,000-square-foot space at the Dartmouth-Hitchcock Clinic in Manchester, N.H. And Norris Cotton Cancer Center-North, a brand new \$7.5-million facility under construction in St. Johnsbury, Vt., is projected to open in September 2005.

Both facilities will offer the research-based care that is a hallmark of Norris Cotton—which has been designated since 1990

by the National Cancer Institute as a comprehensive cancer center. Most clinical trials and all but a few very complicated protocols or those requiring hospitalization will be available at the new sites. In both locations, says Dr. Mark Israel, Norris Cotton's director, "we'll save area cancer patients and their families hundreds of hours, thousands of miles, and untold travel expense. More important, cancer patients will no longer be forced to make health-care decisions based on their ability to travel." Some patients in remote towns have felt compelled to set their chemotherapy or radiation schedules—or even decide what kind of treatment to receive—based on travel considerations.

Tailor: Israel emphasizes that "we work collaboratively with area hospitals and health-care providers, to tailor our services and expertise to meet the community's specific needs." Patients may, for example, visit one of the new sites to see a specialist but then receive chemotherapy at a hospital even closer to their home. In fact, eight community hospitals in northern Vermont and New Hampshire collaborated with DHMC in developing the

Norris Cotton-North project.

Dr. Marc Gautier, the Cancer Center's assistant director for regional affairs, models this philosophy in his own practice. In addition to his administrative responsibilities, Gautier sees patients one day a week in other locations, such as New London and Lancaster, N.H.

It's at academic medical centers like DHMC where researchers develop the latest treatments, Gautier explains. For example, "we're finding the switches that turn cancerous growths off and on." Still newer treatments, he adds, involve the genetic engineering of molecules and proteins tailored to an individual patient's particular cancer—achievements considered impossible just a few years ago. Such breakthroughs can take from two to five years to reach oncologists in community hospitals, however. But now residents of northern New England don't have to wait—or drive—to benefit from such advances.

JOHN MILNE

MARK WASHBURN



Norris Cotton Cancer Center's new southern facility is housed here, at the Manchester, N.H., Dartmouth-Hitchcock Clinic.

New affiliation will bring med students from NYC to DMS

This fall, students from a New York City medical school will be taking a close look at the DMS campus to see if they'd like to spend their third and fourth years in the hills of New Hampshire. At the same time, DMS will be taking a close look at the students—from the Sophie Davis School of Biomedical Education at the City College of New York.

Ultimately, about five Sophie Davis students will join DMS's third-year class in June 2007 to begin their clinical clerkships. Most of them will likely be from racial and ethnic backgrounds underrepresented in medicine—relative to the composition of the general U.S. population—and from economically depressed neighborhoods in New York City. But the Sophie Davis students will bring more than just added ethnic and socioeconomic diversity to DMS.

Fresh infusion: "They're going to bring some different approaches to problems and issues [and] infuse our students in the third-year class with some fresh and different ways of thinking about medical problems, especially public-health problems," explains Dr. David Nierenberg, senior associate dean of medical education at DMS.

At Sophie Davis, medical students complete a B.S. degree and the first two years of medical school in five years. They then transfer to one of six four-year

INVESTIGATOR INSIGHT

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

Michael Whitfield, Ph.D.
Assistant Professor of Genetics

Whitfield joined the DMS faculty in 2003. He uses a genomic approach to study both basic biology and disease—including scleroderma, a degenerative condition that affects the skin and internal organs.

How did you decide to become a scientist?

I found molecular biology fascinated me more than any other subject I studied in college. I took every biochemistry and molecular biology course they would let me into as an undergraduate. My entry into genomics came from a desire to combine computational and quantitative thinking with molecular biology. As I pursued the technology, it has taken my science in directions I could not previously have imagined.

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

People who are the absolute best at what they do have always fascinated me. I would like to have been able to shadow former UNC-Chapel Hill basketball coach Dean Smith. He motivated his players to accomplish amazing things, taught the fundamentals, won games season after season, and did it all in a calm, collected manner and always with integrity. He always struck me as someone who'd be able to teach amazing life lessons.



What about you would surprise most people?

I once considered becoming a herpetologist—someone who studies reptiles and amphibians. Growing up in

North Carolina, I knew every local species in the Southeast, had read every book I could find in the library by the time I was in middle school, and ended up giving lectures to day camps and

kindergarten classes—with an armload of snakes as props. It's probably best that I chose genetics!



What do family and friends give you a hard time about?

For ordering both my coffee (Peet's!) and my wine directly from California—we all have our weaknesses.

What's the last book you read?

Tuesdays with Morrie by Mitch Albom, the amazing story of a dying professor giving his final lessons about life to one of his best students.

What book do you keep meaning to read?

Charles Darwin's *Origin of Species*. It has been on my list for years.

What's your favorite nonwork activity?

It is a split between rock climbing, skiing, and just being outdoors in general. Dartmouth has such a wonderful outdoor tradition, which makes it the perfect place to do top-quality science and have lots of outdoor adventures.

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

My greatest frustration is that once you become faculty you don't get to do as much science as you used to. Science has become so driven by the chase for funding that many of us spend much more than half of our time as fund-raisers rather than as scientists or teachers. I find my greatest joy to be mentoring others, both in my laboratory and through teaching. I hope I can teach the fundamental scientific lessons as well as my mentors taught them to me.

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

Biology is quickly becoming an information science. The modern biologist must be as comfortable at the computer as at the [lab] bench. I advise anyone contemplating a career in the biological sciences to expose themselves to and consider formal cross-training in a quantitative discipline such as mathematics, statistics, computer science, or physics as well as in biology.

Beloved otolaryngologist Dudley Weider dies . . . with his scrubs and his skis on

Everybody loved Dr. Dudley Weider. His family, his friends, his colleagues, and his patients. And he loved all of them.

“Dudley was one of the best friends I’ve ever had,” Willem Lange told the packed church at a memorial service for Weider. “I admit to a brief pang of jealousy every time I realized that hundreds of other people felt the same way. He seemed to be everybody’s friend!” Weider, a professor of surgery at DMS, died suddenly of a heart attack on February 18. The 66-year-old endurance athlete collapsed mid-stride as he was skate-skiing into the Dartmouth Grant in northern New Hampshire. He was on his way to meet Lange and some other friends for a weekend of cross-country skiing.

Weider was the consummate adventurer. He loved cross-country skiing, hiking, mountain climbing, canoeing, fishing, and biking. But he was the consummate physician, too. His easygoing nature put patients instantly at ease. “He was unstinting of his time and effort on their behalf,” says Dr. J.

Oliver Donegan, chief of otolaryngology. “He made sure his patients had his home phone number, and he encouraged them to call if they were concerned and they needed his reassurance.”

Few people realized that Weider, who joined the Dartmouth faculty in 1974, was known internationally for his work. “Dudley was very modest about his achievements,” adds Donegan. But “he was an innovative surgeon and he pioneered and introduced many new surgical techniques and procedures.”

Tonsils: In addition to removing tonsils and adenoids, Weider treated patients with spinal fluid leaks in the ear; surgically removed obstructions in the nose and throat to alleviate sleep apnea; and determined why the removal of tonsils could sometimes stop bedwetting. “He realized that the large tonsils created a sleep apnea, and this did something to the antidiuretic hormone in the pituitary,” explains Dr. Nathan Geurkink, a fellow otolaryngologist.

As busy as he was professionally, Weider always found time for the out-of-doors. He skied through Alaska on the 200-mile Iditarod Trail; crossed the Arctic Circle by canoe; skied 240 miles across the Greenland ice cap; competed in the first marathon in Antarctica; and participated in the annual Canadian Cross-Country Ski Marathon.

“He was always an inspiration to me because he had done . . . almost outrageous endurance events,” says former Dartmouth ski coach John Morton, who wrote about Weider’s adventures climbing Alaska’s Denali, the highest peak in North America, for the Winter 1999 issue of *DARTMOUTH MEDICINE*. “He’d hear about something like that and say, ‘Boy, that would be kinda neat.’ And he’d go off and do it.”

On the Greenland trip, even when howling winds and 30-below temperatures forced several members of the expedition to quit, Weider was indomitable. “He was like a bulldog—he would never give up,” says Dr. Eric Sailer, a retired DMS ob-gyn

who, along with several others, was helicoptered out. The guides begged Weider to consider leaving, too, because his feet were in bad shape. But Weider just borrowed a larger pair of boots that fit over his swollen feet and continued.

Sometimes he brought work along, like on a canoe trip down the Leaf River in Canada. At the end of each day, he’d sit and draft journal articles, oblivious to his exhausted companions who had collapsed beside him. “I can get my mind around it here because there are no phone calls, no emergencies,” Weider told John Hannon, another member of that expedition. Weider, Hannon, and Sailer were all members of the Dartmouth College Class of ’60.

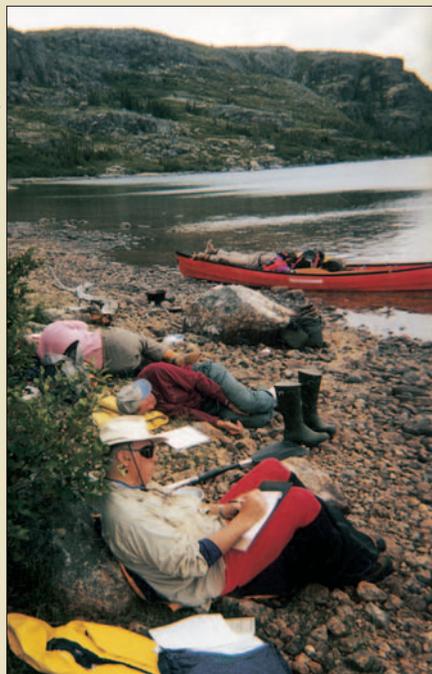
As focused as Weider could be, however, he was notoriously forgetful. “His absent-mindedness was legendary,” Lange said at the memorial service. “Nobody in the world but Dudley could have accidentally tangled his wedding ring in his fishing line and trolled it behind him in the water for several hours.”

Legendary: His concern for his patients—or for anyone who was ill—was legendary, too. “I think he was born to be a healer,” recounted Lange. “If you were sick or blistered or bleeding, Dudley was there. And there was always a follow-up call to see if you were better. He wouldn’t let go of it until you were.”

He may not have been ready to let go of life yet, but his friends and family agree that he lived his days to their fullest. The week he died, he had seen patients; done surgery; attended a grandson’s basketball game and a granddaughter’s talent show; and was on his way to spend a weekend with good friends doing what he loved.

“He died wearing his uniform—his green scrubs [under] his Johnson woolies, his L.L. Bean flannel shirt, his red suspenders, his headlight . . . his skis and ski boots,” said Weider’s son, David, at the memorial service. “He wouldn’t have wanted it any other way.” L.S.C.

JOHN HANNON



Weider, in the foreground, had enough stamina to work on medical papers after a day of canoeing.



Stan Roman, former deputy dean of DMS, is now the dean of City College of New York's Sophie Davis School of Biomedical Education, which has forged a new partnership with Dartmouth.

medical schools through a process similar to the National Resident Matching Program, which pairs medical school graduates and residency programs in a way that factors in both parties' preferences. Of Sophie Davis's partner schools, DMS is the only one outside New York State.

Feel: Dr. Stanford Roman, dean of Sophie Davis and a 1964 graduate of Dartmouth College, proposed the partnership with Dartmouth in 2003. Roman believed, explains Nierenberg, that some of his students would welcome the opportunity to attend a medical school "in a very different geography and with a very different feel . . . [just] as he really loved going to Dartmouth College." Roman's familiarity with Dartmouth also includes having been deputy dean of DMS in the early 1980s and having served as a Dartmouth College Trustee. After several discussions to work out the details of the matching process, Dr. Stephen Spielberg, DMS's dean, and Roman recently announced the agreement.

Roman was also drawn to

CLINICAL OBSERVATION

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

**Alan Rozycki, M.D.,
Professor of Pediatrics**

Rozycki, a Dartmouth College '61 and DMS '63, is a general pediatrician with particular interest in attention deficit hyperactivity disorder, spina bifida, and HIV. He has been on the faculty since 1972.

What made you decide to become a physician?

When I was an undergraduate at Dartmouth, I was interested in doing research in the biological sciences and actually was accepted to a number of graduate programs. Then I started to date a young woman who lived in Norwich and I was convinced it would be best to stay around here. So I started in the medicine program with an idea of getting an M.D.-Ph.D. After two years, I went to Harvard, where I had two wonderful clinician teachers and fell in love with clinical medicine. So it was for the love of a woman initially, and for the love of medicine secondarily.

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

An adventurer-explorer like Indiana Jones. I love archeology and ancient societies and there's just no question at all I would love to do that.

What is the most exciting place you've ever been?

Cambodia. There's a group of beautiful 8th- to 13th-century temples at Angkor Wat.

What's your favorite place?

On the Connecticut River, canoeing or fishing. That's one of the reasons I have stayed here. This is home, and home is my favorite place.

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

I'd love to meet the Buddha. The Buddhist philosophy is one that I would like to emulate a lot more closely. But there are so many people that I'd like to meet. Actually, I'd like to meet my father again. He died about two years ago. So the Buddha and my father; both had various types of wisdom. My father was not a particularly special

guy. He was a truck driver and a common man, but he was . . . you know, *special*.

What's the most recent book you've read?

I'm in the process of reading a history of India, in preparation for going to India. It's very good, very intriguing, and I'm disappointed in how little I knew about India and how little other cultures are emphasized in our Western education. I read a fair amount, I stay up with current events, and it's surprising to me to see things talked about that are of great import to other places, and important things in terms of world history, that I've never even heard about.

Where has your interest in the world come from?

I think that my interest in internationalism arose when I was in the military from 1968 to 1971. I was stationed in Holland during the Vietnam War. Being in Europe and traveling around opened my eyes to a lot.

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

I think that I can be a pain in the butt because I'm too impatient and often too exuberant. I'm a good listener with my patients. I'm not a good listener with my friends and family. And I think



I talk too much. This is part of my New Year's resolution, to try and listen better.

Do you have a medical mentor?

Kurt Benirschke. Kurt was a professor of pathology here at Dartmouth.

I'd call him up at 2:00 in the morning saying, "Kurt, I'm leaving medical school. I can't take any more." And Kurt would say, "Let's have a cup of coffee." He'd try to convince me to stick around. His argument was that if you want to be a great scientist in human biology, getting your M.D. could open so many other doors. And he convinced me after 10,000 cups of coffee.



DMS for its focus on primary care, which encompasses internal medicine, pediatrics, and family medicine. Encouraging students to become primary-care physicians in underserved urban communities is a core goal for Sophie Davis; about 80% of its 1,400 graduates in the past 10 years have chosen to practice primary care. Although only 30% of DMS graduates in 2004 went into primary care, Dartmouth was one of the first medical schools in the country to have a community-based primary-care clerkship.

Interested: “Anybody who is interested in primary care . . . would find a nurturing environment” at DMS, explains Nierenberg. “That doesn’t mean that we try to force all of our graduates to go into primary care. We don’t. But for those who want it, we’re as strong as anywhere in the country.”

When the Sophie Davis students finally arrive at DMS in 2007, they’ll face some challenges, such as making the transition “from an urban setting to a rural location—and then there is the weather,” says Dr. Lori Alvord, associate dean of student and multicultural affairs. Alvord, a Navajo who grew up on the edge of a reservation in New Mexico and graduated from Dartmouth College and Stanford Medical School, can relate to such challenges. “We’ll be working to make the transition as smooth as possible for them,” she adds. “We welcome socioeconomic and geographic diversity, as well as cultural diversity.”

JENNIFER DURGIN

MEDIA MENTIONS: DMS

Among the people and programs coming in for prominent media coverage in recent months was DHMC’s director of palliative medicine. “Dr. **Ira Byock** . . . says that physician-assisted suicide laws are really ‘an apology for a failed medical system,’”



noted *Harper’s* magazine in an article about the right-to-die debate. “Byock advocates a change that he considers ‘more controversial than assisted suicide,’” continued the article, “which is to require medical residents to do a rotation in palliative care and pain management” of at least 100 hours. “Physicians can graduate and be licensed and really have almost no training in pain management,” Byock explained to *Harper’s*.

“Fevered reaction to a recent warning from the National Institutes of Health that the over-the-counter painkiller Aleve might cause heart attacks may be overblown, some medical experts say,” began a December *Wall Street Journal* article. One expert, “Dr. **Elliot Fisher**, director of health policy research at the Center for the Evaluative Clinical Sciences at Dartmouth, said he was troubled by the possibility that science wasn’t behind the decision to halt the study and publicize the findings. ‘I have not seen their numbers, but I would be disappointed if there were not careful thought given to the statistical significance of the differences that were found,’” he told the *Journal*.

“Toys that just light up, flash, or make noise for no reason may amuse very young children, but they don’t foster development as well as toys that offer a cause-and-effect,” began a January CBS News bulletin. “Those opinions come from one who should know, Dr.



Carol Andrew, an occupational therapist and assistant professor of pediatrics at Dartmouth Medical School.” Commented Andrew on CBS’s *Early Show*, “‘We’re very worried because there’s a tremendous epidemic of children who are having difficulty learning language and having difficulty maintaining attention and, in part, we feel like it may be due to a lot of television and

video exposure in the very young ages.’ . . . Babies need to be challenged more, Andrew says.”

The growing popularity of expensive, high-tech diagnostic scans prompted a federal advisory committee to suggest “that Medicare change the way it pays for such imaging tests, with an eye toward saving money,” the *Pittsburgh Post-Gazette* reported. “The advisory committee studied whether Medicare recipients who received more scans . . . had better outcomes.” They didn’t. “That’s not surprising to Dr. **Jack Wennberg**, director of the Center for the Evaluative Clinical Sciences at Dartmouth,” the article said. “In general, increased spending on technology results in more tests being performed, not better outcomes for patients. . . . ‘The people in high-cost, high-capacity regions have worse outcomes than those in low-cost, low-capacity regions,’ Wennberg said.”

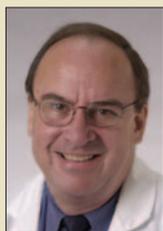
But more technology sometimes appears to be warranted. A recommendation from a federal task force was behind a bill introduced in Congress under which “most American men and women over 65 would be eligible to have Medicare pay for a simple ultrasound screening test for potentially lethal abdominal aortic aneurysms,” according to an article in the *Wall Street Journal*. “‘People with a family history, both sisters and brothers of people with aneurysms, are at the highest risk,’ said Dr. **Robert Zwolak**, a Dartmouth Medical School professor of surgery who is leading the screening effort.”

The *New York Times* reported on a brain-imaging study suggesting that people in persistent vegetative states may “in fact hear and register what is going on around them but be unable to respond.” Experts warned that the new research “did not mean that unresponsive people with brain damage were more likely to recover,” the *Times* noted, but “the study did open a window on a world that has been neglected by medical inquiry. ‘This is an extremely important work, for that reason alone,’ said Dr. **James Bernat**, a professor of neurology at Dartmouth.” The *Orlando Sentinel* also turned to Bernat, for comment on a brain-damaged Florida

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

woman kept alive against her husband's wishes. The *Sentinel* said that Bernat, the "former chair of the American Academy of Neurology's ethics committee, conceded physicians can only make reasonable judgments about a patient's awareness 'because we can't get into their minds.'"

A DHMC sleep specialist made the news several times in recent months. In the *Pittsburgh Post-Gazette*, "Dr. **Michael Sateia**, president of the American Academy of Sleep Medicine, noted that the American Acad-



emy of Pediatrics now recommends that pediatricians screen all children for snoring, which can be a sign of sleep problems. 'This is part of a growing recognition of the importance of healthy sleep and sleep disorders in childhood.'" Sateia was also quoted in the *Los Angeles Times*, on the danger of off-label antidepressant use to treat insomnia, and by United Press International (UPI), on the need for more research on insomnia. "Many challenges remain in the characterization, recognition, and treatment of insomnia," he told UPI.

In an article about consumer surveys of hospitals, the *Wall Street Journal* noted, "Dartmouth Medical School is also expanding distribution of its 'How's Your Health?' on-



line survey, which has been used by groups including the military and state health departments for several years and will be offered more broadly through nonprofit and business groups to consumers later this year." Noted the *Journal*, "Dr. **John Wasson**, who developed the survey, says that users can also now create their own free portable medical record using the site."

"The years from 18 until 25 and even beyond have become a distinct and separate

life stage, a strange, transitional never-never land between adolescence and adulthood, in which people stall for a few extra years." So said a recent *Time* magazine feature. Why are there so many twenty-somethings who refuse to grow up? the article wondered. "The human brain continues to grow and change into the early twenties, according to Dr. **Abigail Baird**, who runs the Laboratory for Adolescent Studies at Dartmouth. 'We as a society deem an individual at the age of 18 ready for adult responsibility,'" Baird told *Time*. "Yet recent evidence suggests that our neuropsychological development is many years from being complete."

In February, when the 2005 Academy Awards rekindled controversy over the way Hollywood glorifies smoking, the Associated Press noted that "a Dartmouth Medical School study last year found that children



who watch movies in which actors smoke heavily are three times more likely to smoke themselves than those exposed to less on-screen smoking." *Discover* also referred to the research: "All things being equal, whether their friends or parents smoke, the amount of R-rated movie watching is a strong predictor of smoking among kids,' says Dr. **James Sargent**, the Dartmouth Medical School professor who led the study. . . . 'Kids imitate their heroes, and the movies supply heroes to kids.'"

Exploring why Spokane, Wash., "has one of the highest rates of hip replacement surgery in the nation, 50 percent higher than the national average," the Associated Press (AP) wrote that it "has more to do with the local doctors' preferences than with medical need, according to Dartmouth Medical School researchers who study regional variations in health care." AP went on to quote Dartmouth's chair of orthopaedic surgery. "Medicare pays for most hip replacements, which cost from \$18,000 to \$20,000, so re-

gional variation is a public policy issue, said Dr.

James Weinstein. . . . 'Joint replacement is one of the most effective procedures done in medicine,' Weinstein said. 'But just because it's really good, should it be overutilized?'"

A partnership between DHMC and an organization called the Upper Valley Trails Alliance caught the eye of the national press. "Just a few months old and already earning



praise, the program involves several dozen doctors writing detailed, albeit symbolic, prescriptions for getting fit and then giving patients trail maps to accomplish it," wrote *USA Today*. "The idea is to make a more specific explanation,' said Dr. **Charles Brackett**, director of the program at Dartmouth-Hitchcock Medical Center in Lebanon, N.H. . . . Studies show that the more concrete a doctor's advice, the more likely a patient is to heed it."

"Is it possible that we place too much faith in pictures?" asked Malcolm Gladwell in the November issue of *New Yorker* magazine. He was referring to medical images and used mammography as one case in point. "Dr. **Gilbert Welch**," Gladwell wrote, "a medical-outcomes expert at Dartmouth, has pointed out



that, given current breast-cancer mortality rates, nine out of every thousand 60-year-old women will die of breast cancer in the next 10 years. If every one of those women had a mammogram every year, that number would fall to six. The radiologist seeing those thousand women, in other words, would read 10,000 x-rays over a decade in order to save three lives—and that's using the most generous possible estimate of mammography's effectiveness."



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

C. Everett Koop, M.D., Sc.D., a professor of surgery and the senior scholar of Dartmouth's Koop Institute, was recently presented with the Surgeon General's Medallion by U.S. Surgeon General Richard Carmona, M.D., for his contributions to the fights against AIDS and underage smoking.



Diane Harper, M.D., M.P.H., an associate professor of community and family medicine and of obstetrics and gynecology, has been named a member of the Susan G. Komen Foundation's Risk, Prevention, and Epidemiology Study Section, as well as of the National Merck Young Adult Advisory Board for HPV Vaccines.



Jocelyn Chertoff, M.D., an associate professor of radiology and of obstetrics and gynecology, was recently appointed to the newly created position of assistant dean of clinical affairs for Dartmouth Medical School. She is also vice chair of the Department of Radiology and assistant medical director for



JON GILBERT FOX

Cuts from these three volumes were part of a recent grand rounds at DHMC.

Music becomes a healing memorial

Ten years ago, Michael Whitman's teenage son took his own life. Ever since, the Lyme, N.H., resident has found comfort in music. Now he's trying to help others appreciate music's healing power. He's compiled 83 songs about pain and loss—such as Tom Paxton's "No Time to Say Goodbye"—into a three-volume CD collection titled *Before Their Time*. Recently, he played some of the cuts from the collection at a grand rounds presentation at DHMC.

"Michael is really helping to start a movement," says Dr. Joseph O'Donnell, a professor of medicine at DMS. "Hopefully, [he] is going to show the providers at DHMC . . . how music can be used as a therapeutic tool."

Music is already heard throughout the Medical Center every day. Patients and visitors can listen to tunes being played on the Steinway grand piano that sits in a central area. Patients can choose music they would like to hear through headphones during cancer treatments. Music is an essential component of complementary services, such as reiki massage, according to Deborah Steele, support services coordinator at DHMC's Norris Cotton Cancer Center. And some people have even organized music services for loved ones—like the one that family members and coworkers held for nursing education director Ellen Ceppetelli after she was seriously injured in a sledding accident a few years ago. So when O'Donnell suggested that Ceppetelli ask Whitman to make a presentation at DHMC, she wasted no time in issuing the invitation.

The next step, hopes Dr. Ira Byock, director of DHMC's palliative medicine program, may be for DHMC to hire an experienced music therapist to help create a formal music therapy program as part of the palliative care service. He envisions a professionally administered version of Whitman's type of program, as well as support for those who are nearing death—the kind of music service that could "anoint a person who is dying, almost as a sacramental gesture of bearing witness to this sacred event."

In the meantime, Whitman is planning to take the presentation about his *Before Their Time* CD series on the road, "because I think it really does have a very wide appeal." M.P.L.

medical staff affairs, as well as a member of the Hospital-Clinic Board of Governors.

Joseph Henderson, M.D., a professor of community and family medicine, was recognized by the Federal Laboratory Consortium for Technology Transfer, for excellence in technology transfer, for a multimedia educational tool titled "Genetics in Clinical Practice—A Team Approach."



Tor Tosteson, Sc.D., a professor of community and family medicine, has been named to the Cancer Epidemiology, Prevention, and Control Study Section of the National Cancer Institute.

Jonathan Park, Ph.D., supervisor of cytogenetics for DHMC and an adjunct assistant professor of pathology, was awarded the Association of Genetic Technologists Outstanding Achievement Award.

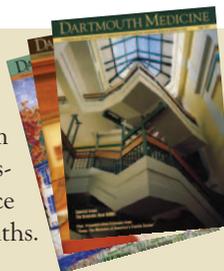


Gina Balkus, Dartmouth-Hitchcock's director of government relations for New Hampshire, was elected president of the New England Society for Healthcare Communications. She has served on the society's board since 1997.



James Platt, an instructor in psychiatry and director of the Dart-

PAGES PAST



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

From the Spring 1986 issue

Almost 20 years ago, Dr. J. Robert Beck, an assistant professor of pathology at DMS, explained the growing importance of computer technology in medicine. Citing a report by the Association of American Medical Colleges' Project on the General Professional Education of the Physician (GPEP), he wrote: "The GPEP panel agreed with several current theorists of medical education who claim that the physician of the 21st century will need to be an effective manager of clinical information, able to retrieve data from both clinical and literary sources and to apply such information to the care of individual patients. He or she will also have to be familiar with both statistical and empirical approaches to diagnosis and therapy. The physician will need to be an *information manager*. Formal training in the information and computer sciences, as they are applied to medicine, will need to be integrated into the general medical education. This need has been recognized at a time when very few U.S. medical schools have an academic program in medical in-

formation or computer science. Those that exist are in their formative stages."

But DMS was ahead of the trend. "The Medical School established the Program in Medical Information Science under my direction in July 1984," Beck continued. "The program was charged with the integration of computer and information



During 1985-86, officials from 43 medical schools came to see how DMS used computers in its curriculum.

technology throughout the medical curriculum. . . . The formal establishment of the program actually consolidated efforts in medical information science that began at DMS in 1982, when the Medical School submitted an application to the National Fund for Medical Education to support the development of a fourth-year course for medical students entitled 'Computers and Medical Decision-Making.' This elective was designed to teach medical students how to use microcomputers. After the successful establishment of that elective, my colleagues and I turned toward integrating computer technology more broadly into the academic and research programs at the School. Thus DMS had undertaken two years of strategic planning and pilot course development for medical information science curriculum before the recommendations of GPEP were published."

mouth College Faculty/Employee Assistance Program, was recognized for exemplary service to the International Association of Employee Assistance Professionals in Higher Education.

Elinor Stalker, R.N., an emergency room nurse at Cheshire Medical Center/Dartmouth-Hitchcock Keene in Keene, N.H., was recently presented with the New Hampshire Emergency Nurse of the Year Award.

Dartmouth Medical School's **Community Service Committee**, a multi-project, student-run initiative, was a recent recipient of the Dartmouth College Social Justice Award. Accepting the award on behalf of the student body were three DMS students: Matthew Laquer, Jennifer Levin, and Elizabeth Wallis.

Valley Regional Healthcare, the parent organization of Valley Regional Hospital in Claremont, N.H., became the 12th member of the **Dartmouth-Hitchcock Alliance**. The Alliance is a regional network of hospitals, mental-health centers, and home-care agencies in Massachusetts, Vermont, and New Hampshire.

The New Hampshire Healthy Kids Corporation recently selected **Dartmouth-Hitchcock Medical Center** as one of its "Business Partners of the Year."

The Foundation for Healthy Communities recently honored **Dartmouth-Hitchcock Medical Center** with its New Hampshire Health Access Network Leadership Award. The Health Access Network is one of the foundation's initiatives and is aimed at helping low-income residents of the state get free and discounted care.

New on the bookshelf: Recent releases by DMS faculty authors

Molecular and Cellular Insights to Ion Channel Biology. Edited by E. Edward Bittar, M.D.; and **Robert Maue**, Ph.D., professor of physiology at DMS; Elsevier; 2004. This book explores ion channels through genetic, biochemical, electrophysiological,

and other types of research. It looks at how the function and dysfunction of channel molecules have furthered understanding of their physiological roles. New perspectives include the immunology of the glutamate receptor and aquaporins as ion channels.



Microbial Biofilms. Edited by Mahmoud Ghannoum, Ph.D.; and **George O'Toole**, Ph.D., assistant professor of microbiology and immunology at DMS; ASM Press; 2004. This book covers the biology of biofilms from their development, antibiotic resistance, and architecture, to their roles in

infectious disease. It encompasses bacteria and fungi and includes chapters on genetic exchange and biofilms, hospital-acquired infections, biofilms and implant infections, and the history of the development of the biofilm concept. ■

