First-year students bring a panoply of experiences to DMS

How to tell the story of your life and introduce yourself to new classmates and teachers? This was the challenge incoming Dartmouth medical students faced over the summer, as they composed brief autobiographies that would be mailed to their fellow first-years before the class's arrival on campus.

Beginning: "Begin at the beginning," the King of Hearts advised the White Rabbit, and nearly all of the DMS '04s heeded this injunction by opening their story with some form of "I grew up in . . ." Of course, this formulation resulted in both more and less exotic outcomes. In their own words:

"So far, I have had the opportunity to live and grow up in three very different countries—Sri Lanka, Oman in the Middle East, and the United States of America." (Mahesh De Silva)

"I come from a small, rural town in Ohio where cows, pigs, and sheep altogether outnumber the humans 10:1. Thankfully, pigs and cows are notoriously incapable of getting along, and their disunity keeps the humans in firm control of the city." (Bryan Coffing)

"My twin brother and I were born at Mary Hitchcock Hospital and spent several weeks in the NICU following our birth." (Bethany Lovejoy)

After establishing their origins, the autobiographers negotiated the essence of their achievements and activities—and that was a tall order for all of them. It should be no surprise that a class of 78 drawn from more than 6,000 applicants is academically accomplished. Andrew Welch, director of admissions, summarized those accomplishments in an address during orientation: "The class has average undergraduate grade point averages in the sciences of 3.6 and in the nonsciences of 3.7. Those are the highest average GPAs in the institution's history. You also have the highest average MCAT scores.

"Biology is the most popular major in the class," Welch continued, "but approximately one-third of you are nonscience majors, and there are as many history majors in the class as chemistry majors." The class came from almost 50 different colleges. It is 46% female and 54% male, and 23% are minorities, while 9% are members of racial or ethnic groups underrepresented in medicine.

Work: The class members also described a variety of work experiences, many of them related to medicine:

"I've been living in Boston with friends and working in a transplant surgery lab doing research." (Jamie Ames)

"In November 1993, I was drafted into the Israeli Defense Forces. I served in Military Intelligence and was a squad commander in an elite reconnaissance unit. I was also a combat medic." (Adam Bier)

"Living in the Andean highlands as a [Peace Corps] volunteer, I worked with indigenous

FACTS & FIGURES

The "Can you tell a book by its cover?" edition

Some statistics about Dartmouth's two biomedical libraries

113
Number of hours a week one of the biomedical libraries is open

65,000
Number of volumes in the biomedical collection when Dartmouth's first biomedical library opened in 1963

300,000
Number of volumes in Dartmouth's biomedical collection today

900
Number of journal subscriptions in 1963

2,500
Number of journal subscriptions today

0
Number of audiovisual and software programs in 1963

6,000
Number of audiovisual and software programs today

1,500
Average number of hits per day on the biomedical libraries Web site (http://www.dartmouth.edu/~biomed/)

530
Number of digital journals available on the biomedical libraries Web site

Source: Biomedical Libraries 1999-2000 Annual Report

farmers on agroforestry projects and taught environmental education and English in the schools." (Wendy Osterling)

"After college, I moved to New York City, where I danced with a small modern dance company, performed in an off-off-Broadway play, and sang with an *a cappella* group and a band." (Julia Hermann)

Spice: In addition, every life has a dash of spice beyond the formal activities, and this was evident in the biographies:

"In my free time, I enjoy cooking and singing in Hindi and Punjabi." (Amanjit Dhatt)

"My most recent claim to fame is appearing for about half of a second as an audience member on *Who Wants to Be a Millionaire*." (Ali Goldkamp)

"As I write this I am watching my 10-day-old son, Tyler." (Jason Kemp)

"My first name, Ndidiamaka, means 'patience is beautiful,' while my last name, Onwubalili, means 'death is a tragedy.'" (Ndidiamaka Onwubalili)

"Every morning I dodge cow patties as I ride my granny bike across public grazing land, then through the gothic grandeur of Cambridge on my way to work." (Emily Wood)

Welch also quoted 19th-century DMS student William Tully's initial impression of his classmates: "'Such a motley collection, I am sure I never set my eyes on before. Some seem to be so awkwardly put together that, at first view, one would almost suppose that chance was the agent in their formation.'

"The Class of 2004 is not a motley collection," Welch continued. "In fact, all of us on the admissions committee can personally vouch for the fact that each member of the class owns a well-pressed, dark-blue suit. Yet we hope that a lack of uniformity—in background, in outlook, in biases and assumptions about the way the world operates—is still a defining feature of the student body."

Ph.D.'s: Another defining feature of the DMS student body is that it encompasses several groups of students beyond those in the M.D. program. Also new to the Medical School this year are 34 first-year doctoral candidates in the biomedical sciences—including 24 in the biochemistry program, six in pharmacology and toxicology, and four in physiology.

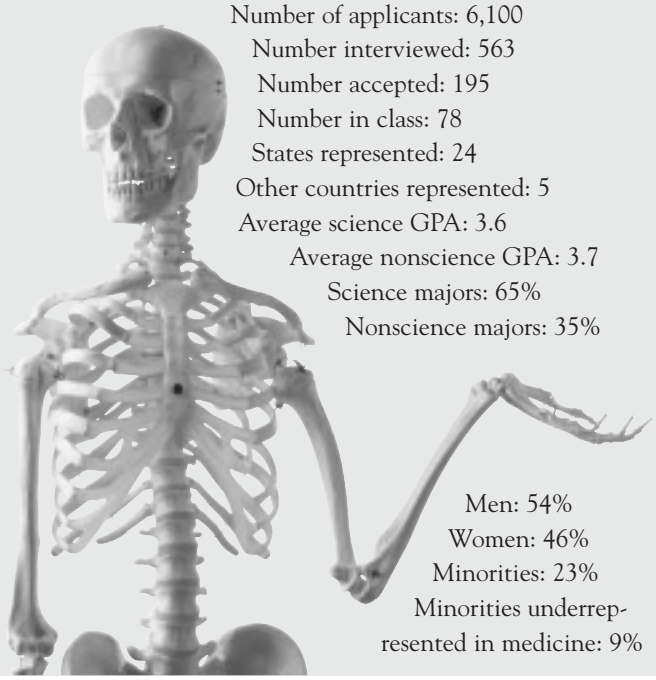
In addition, three M.D.-Ph.D. students are beginning their graduate studies, one each in physiology, molecular and cellular biology, and the psychological and brain sciences.

CECS: The Center for the Evaluative Clinical Sciences (CECS) also welcomed a new crop of students this fall—48 of them, all enrolled in the master's degree program. That brings total enrollment in the master's program to 74. There are also 14 students already pursuing a Ph.D. in the evaluative clinical sciences. CECS students range from recent college graduates to experienced physicians. In fact, 35% of the CECS students are doctors, and another 19% hold other advanced degrees.

The King of Hearts finished his admonition by saying, "Go on till you come to the end: then stop." Yet all these new students recognize that their story isn't over yet, that the next few years are just a beginning.

Jonathan Weisberg

A Statistical Portrait of the DMS Class of 2004



Number of applicants: 6,100
Number interviewed: 563
Number accepted: 195
Number in class: 78
States represented: 24
Other countries represented: 5
Average science GPA: 3.6
Average nonscience GPA: 3.7
Science majors: 65%
Nonscience majors: 35%

Men: 54%
Women: 46%
Minorities: 23%
Minorities underrepresented in medicine: 9%

Grants and contracts post third year of double-digit growth

The research grants and contracts awarded to Dartmouth Medical School in fiscal year 2000 totaled over $70 million. That amounts to an almost 12% increase over FY99—the third straight year of double-digit increases—and a 100% increase since 1990.

Adam Keller, chief operating officer of DMS, terms FY00 a "great year" and notes that the increases were institution-wide. The new awards were "very evenly distributed," he says. "Every department had something new that was going on."

Keller sees the new awards as falling into three broad categories: grants to established faculty who moved their research in new directions; grants to faculty new to Dartmouth who brought established funding with them; and grants to junior faculty with a newly funded project.

Tops: The Department of Community and Family Medicine led the way in overall dollars with $19 million in awards. Medicine was second with $10 million, followed by psychiatry, microbiology, pharmacology, physiology, and biochemistry. The departments of surgery and pathology had the largest percentage increases in FY00.

Keller notes that some of community and family medicine's total is an artifact of administrative structure, since that department includes the Center for the Evaluative Clinical Sci-

ences and several other organizations that have been very successful at seeking funding. However, he also credits the leadership of the department's chair, Michael Zubkoff, Ph.D. "[He] has really done an excellent job at identifying areas for future research and found leaders who are incredibly strong in those areas," says Keller.

Significant: Keller also ticks off several particularly significant grants:

John Baldwin, M.D., dean of DMS, and Jay Dunlap, Ph.D., chair of genetics, received over $1 million from the Howard Hughes Medical Institute for the new Department of Genetics. "Symbolically," says Keller, this grant "says that peers around the country clearly understand our own capacity in genetics and the capacity of Dartmouth as a research institution."

James Weinstein, D.O., director of the Spine Center, received over $3 million from the National Institutes of Health for a study of low back pain. Keller says this grant is funding a large, multicenter study, which will improve Dartmouth's clinical trial capabilities in general.

Several large National Cancer Institute grants to the Norris Cotton Cancer Center provided core support to further cancer research in general as well as to subsidize start-up support for new investigations.

Keller also mentions that a collaboration between the state of New Hampshire and the DMS Department of Psychiatry has proved to be a model other states are now following. The state contracts annually with DMS to provide faculty to staff the state mental hospital in Concord and also supports the New Hampshire-Dartmouth Psychiatric Research Center.

Noting the dramatic increase in research funding compared to 10 years ago, Keller says, "I think it's purely a function of the quality of the faculty that we have here. We've done some things to try to support the faculty, by doing a better job supplying and supporting equipment and core resources, but I think that's the nickel-and-dime stuff compared with what they've done."

Grants and contracts income represents a larger portion of the DMS budget than was the case 10 years ago, Keller notes. "The good news is that's a function of how successful we are. It also means a little more risk, should we have a downturn in funding . . . but I think we've really made strides since the early '90s to have the sort of infrastructure and administrative support that can sustain the grants."

Climate: Keller foresees the continuation of a climate favorable to research. "Funding for research is going up nationally," he says. "Clearly there's a public commitment to research, which has not diminished in the least, and the good economy helps that." He admits that competition for federal grants is tougher than ever, but says DMS continues to thrive. "We're getting funded, so obviously we're studying the right areas, using the right methods, and getting the right results."

Jonathan Weisberg

ART MYERS, M.D.

Exposing the true effects of AIDS

"There is a lot of ignorance about women with HIV," says DHMC infectious disease specialist Mary-Margaret Andrews, M.D. To raise awareness about the issue, the infectious disease section arranged for an exhibit called "Women First" to stop at DHMC as a part of a national tour. The exhibit featured large-scale black-and-white pictures that portray the struggles and triumphs of women living with HIV.

"Many people do not grasp the tremendous impact of HIV/AIDS on women and their families," agrees Richard Waddell, D.Sc., director of HIV research studies at DHMC. Waddell organized a public seminar during the exhibit's stay at Dartmouth. The women's stories—captured in words as well as pictures—"poignantly highlight the hope, courage and determination of women living with HIV," he explains.

In the United States, the incidence of HIV among women has nearly doubled over the last 10 years, and AIDS is the fourth-leading cause of death in women aged 25 to 44. "HIV-infected women in New Hampshire reflect the national demographic, with increasing numbers of young, heterosexual, or minority women affected," says Andrews, who directs the federally funded Dartmouth-Hitchcock Family Infectious Disease Program for women, children, and families in New Hampshire and Vermont. "There are an increasing number of young—16- to 40-year-old—white women in our region who have contracted HIV through heterosexual sex," she explains. "The HIV-positive women in our more-rural region blend into the background and are often very isolated."

But like the women portrayed in the exhibit (including the one in the image above), HIV-infected women in New England are learning to cope with their disease. "Their strength and determination are truly inspiring," says Andrews. L.S.C.

New deanships will augment the DMS administrative lineup

Pathologist William Hickey, left, and neurosurgeon David Roberts, right, have added new roles in the deanery to their other responsibilities.

Two new deanships were recently created to address changes at DMS and in the medical world generally, as well as to provide support to Dean John Baldwin, M.D. Two longtime members of the faculty are settling into their new roles—William Hickey, M.D., as senior associate dean for academic affairs and David Roberts, M.D., as senior associate dean for clinical affairs.

Philosophy: Hickey brings a breadth of experience to his new position, with degrees in philosophy, engineering, and medicine. This is fortunate because, as he explains, "it's a very heterogeneous position. It entails issues relating to students—student performance, curriculum evaluation to some extent; it involves recruitment not only of students but of faculty; retention of faculty." He also works on tenure and performance reviews and interacts with the Dartmouth College administration and with DMS's assistant deans. And, he concludes, "one of the most basic things is providing support for the dean of the Medical School." Hickey often acts as a surrogate for Dean Baldwin when he is out of town or otherwise occupied.

"There is certainly a need for a lot more philosophy in this particular position than there is in a discipline such as pathology," Hickey comments. He came to Dartmouth in 1992 as chair of pathology after four years at Washington University in St. Louis and seven at the University of Pennsylvania. He reports that he was happy to exchange the department chair for the new position. "I do like a change occasionally," Hickey says. "I had been the chair of the pathology department at Dartmouth longer than I had done absolutely anything else in my life."

But some things haven't changed in Hickey's life. He's continuing his research into the mechanisms that allow inflammation to develop in the nervous system. And he's still teaching neuroscience, cardiac pathology, and neuropathology. "What has changed," Hickey declares, "is that the administration that I engage in during the day, the type of meetings that I attend, the focus of my administrative time, is now across the Medical School."

This new perspective has given Hickey some insights. First, he's impressed by the dedication of the faculty. "There's a real concern for students. Everybody [puts] a lot of time and effort and true concern into the education of students." He's also noticed the dramatic growth in the institution. "We could see very readily that our department was growing," he says, "but . . . the growth is pervasive."

Aspirations: Focusing on the clinical aspects of that growth will be David Roberts. A 1975 graduate of DMS, he has been on the faculty for 18 years and chief of neurosurgery since 1997.

"[Faculty] come here with academic aspirations and all the right motives to increase our fund of knowledge," explains Roberts, but "the many pressures of clinical practice push the academic mission to the background." He expects to be an advocate for the academic goals of clinicians and to strengthen the sense of connection between the clinical faculty and the Medical School.

Roberts plans to work in several areas to accomplish his mandate. He will participate in the process of programmatic decision-making. "Part of my role is going to be to articulate and champion the academic cause in those discussions. There are positions that might be approved and programs that might be funded that don't have an obvious bottom-line guarantee in the short term. . . . There's a need to remember that we're an academic institution." He also foresees playing a role in recruiting faculty who will improve the caliber of the institution as a whole.

But the position is so new that he isn't exactly sure how it will develop. At the moment, he is still trying to make time for his new administrative role—exactly the process he hopes to make easier for others. He plans to cut down on his surgical and clinic time, while maintaining his current role in the education of medical students and residents. He certainly understands the clinician's dilemma. "There aren't enough hours in the day," he admits.

Though he's cutting back, Roberts still loves practicing. He says that neurosurgery combines the fascination of studying the "black box of the brain and mind" with the satisfaction of being able to help people. "The fact that it's coupled with a mechanical side," he adds, "is icing on the cake."

Collaboration: Though their focuses are different, Roberts and Hickey anticipate working closely together. Hickey points out that he plays a role in the career development of the clinical faculty by helping them establish research projects and advising them on requirements for professional advancement. And Roberts expects to provide clinical input into the basic science side of education. "I'm really excited about that," he says.

Jonathan Weisberg

Arsenic in odd places: Researchers look into toxic metal mysteries

JON GILBERT FOX

Epidemiologist Margaret Karagas is one of a number of Dartmouth researchers investigating arsenic; she's looking to see if there's a connection between cancer rates and levels of the toxic metal in drinking water supplies.

As many as one-fifth of the private wells in New Hampshire may contain arsenic concentrations above a new standard being proposed by the Environmental Protection Agency (EPA)—5 parts per billion (ppb)—and many are above the current standard of 50 ppb. That was the conclusion of a recent Dartmouth study analyzing the state's water records.

"New Hampshire is one of the sites in the country where there is very high arsenic [occurring] naturally in the drinking water," says Joshua Hamilton, Ph.D., an associate professor of pharmacology and toxicology. He is the director of Dartmouth's new Center for Environmental Health Sciences and of its Toxic Metals Research Program. Under the program's aegis, researchers from several DMS and Dartmouth College departments are collaborating with each other—as well as with state and federal agencies—to investigate the problem of arsenic in New Hampshire's drinking water.

Risk: Exposure to high levels of arsenic in drinking water—from 500 to 2,000 ppb—in places like Taiwan, India, and South America has long been linked to an increased risk of skin, lung, and bladder cancer, as well as of cardiovascular disease and diabetes. "What isn't clear yet is whether the slightly lower exposures we have here in the United States, even in places like New Hampshire, are also associated with risk," Hamilton says. Right now, the 50 ppb U.S. standard is five to ten times higher than the standard in most of the Western world.

There are several arsenic-related projects under way at Dartmouth:

■ Margaret Karagas, Ph.D., an associate professor of community and family medicine, is doing the first-ever epidemiological study of the effects of arsenic at levels between 5 and 50 ppb. Using the New Hampshire Cancer Registry, she is determining whether the levels of arsenic in individuals' drinking water, and the amount of arsenic in their bodies (measured by how much of the toxic metal is in their toenails), have an effect on the incidence of cancer.

■ Biologists Carol Folt, Ph.D., and Celia Chen, Ph.D., are among "the first people to look at toxic metal movement up through aquatic food webs in a systematic way," Hamilton says. And chemistry professor Dean Wilcox, Ph.D., is looking at the interactions of toxic metals with cellular proteins.

■ Hamilton himself is looking at arsenic as an endocrine disrupter. "We think that this may be one of the ways that arsenic contributes to cancer as well as to cardiovascular disease and diabetes," he says. At doses of only 5 to 50 ppb, arsenic can shut off the glucocorticoid receptor, which regulates glucose levels and plays a role in embryonic development, cell differentiation, and cell growth. And Aaron Barchowsky, Ph.D., an associate professor of pharmacology and toxicology, is looking at arsenic's role in vascular disease.

■ Carl Renshaw, Ph.D., an associate professor of earth sciences, is working with Joel Blum, Ph.D., formerly at Dartmouth but now at the University of Michigan, to understand the chemistry and geology related to arsenic in groundwater systems. "Joel Blum's study was one of the first indicators we had that arsenic in New Hampshire and Maine principally comes from natural sources," Hamilton explains. People had previously blamed high arsenic levels on arsenical pesticides, once used in apple orchards, and on pollution from factories and smelters.

■ Earth sciences professor Page Chamberlain, Ph.D., and an army of students have slogged through library stacks and town records to find out where old arsenic mines are. In the 1800s, arsenic was mined heavily in New Hampshire, which "was known as the 'arsenic state,' because we were the single most important source of arsenic for the country," Hamilton says.

■ The Toxic Metals Research Program has been working with the nationally recognized Montshire Museum of Science in Norwich, Vt., to develop a hands-on middle-school curriculum. The program plans other outreach efforts as well.

Model: Hamilton hopes the arsenic initiative will serve as a model within the Center for Environmental Health Sciences for other multidisciplinary efforts. The center also plans to create a training program for undergraduate and graduate students and postdoctoral fellows, in order to "foster training, mentoring, and research opportunities for young scientists who are interested in interdisciplinary studies related to the environment and human health.

"[Students] want to work at these interfaces and do this new kind of science that isn't along traditional boundaries," Hamilton adds. "They want to do something that they feel has an impact on society."

LAURA STEPHENSON CARTER

"Marco Polos" at DHMC discover a new genetic disorder

"A Marco Polo effect," explains James Filiano, M.D., an associate professor of pediatrics and of neurology, "is where two cultures—in this case the clinical culture and the basic science culture—come together to create our own, third culture." Such a joint culture at Dartmouth was recently responsible for the rapid identification of a novel genetic metabolic disorder, called CDG type Ie (CDG stands for congenital disorder of glycosylation).

Tale: The full story of CDG type Ie, like any modern tale of discovery, is much more than the saga of a lone investigator. It involved several teams of physicians and researchers at DHMC, as well as collaborators at the Mayo Clinic in Rochester, Minn., and the Burnham Institute in La Jolla, Calif. There are two beginnings to this story of discovery—one quite recent and the other many decades ago.

A little over two years ago, a baby boy, a few months of age, was brought for evaluation to the Children's Hospital at Dartmouth (CHaD). His abdomen had been full of fluid since his birth, and he'd had low muscle tone and difficulty breathing all of his short life. He was growing poorly and had recently developed seizures. Filiano, who is the head of CHaD's neurometabolism program, saw the infant and suspected a metabolic disorder—a defect at some step of the basic, daily operation of the boy's cells. It took barely a year for the defect to be identified and the disease to be classified as CDG type Ie—unusually quick progress from presentation to definition of a new genetic disorder.

But the story goes back even further: Filiano makes a point of noting that the foundation for this achievement was laid at DHMC in the 1960s, when Richard Hoefnagel, M.D., now a professor emeritus of pediatrics, established a chromosome analysis lab to look for genetic causes of birth defects. During the 1970s, DHMC's genetic arsenal expanded to include amniocentesis, which allowed doctors to screen for genetic abnormalities before birth, and genetic counseling, to help parents and patients understand and live with such disorders.

And over the past 20 years, DHMC has kept up with other genetics advances. The speed with which the single genetic defect responsible for CDG type Ie was pinpointed reveals the extent of those advances.

Process: Glycosylation is a multistep process by which proteins (which are gene products) are modified by sugars, such as mannose. Inborn errors in the glycosylation process cause many things to go awry. Nerves in the periphery of the body are not properly insulated, leading to poor muscle tone and difficulty breathing. Patients with other types of CDG also have bleeding disorders, because glycosylation is important in making functioning blood-clotting factors.

Among those who first saw the baby boy with Filiano were

JON GILBERT FOX

Jay Dunlap, left, chair of genetics, was among those on hand to thank Mary and Harry Morse (right) for their gift of two paintings.

Art and science intertwine in paintings

There was much to celebrate on September 8 for Harry Morse, M.D., a 1944 Dartmouth College graduate, and his wife, Mary. Not only was it the week of their 53rd wedding anniversary, but they were the guests of honor at a luncheon given by Dean John Baldwin, M.D., as they presented to DMS two oil paintings by their daughter, Mary Jane "M.J." Morse.

M.J. Morse is an artist whose abstract works draw their inspiration from the intricacies of the invisible molecular world. Trained as both an artist and a scientist, she holds a Ph.D. in biology from Cornell and is currently on the staff of the Boston Museum of Science. She has brought her artistic skills and scientific knowledge together in a series of oil paintings that she calls "Molecular Intimacies." "I am trying to express some of the beauty and complexity of the molecular environment from a very personal point of view," says M.J. Morse. "[It's] a delight when someone else connects with that vision."

The two works donated to DMS, both oils on gessoed paper, are from this series. "Floating Map (template)" combines brilliant squares of purple, orange, red, and yellow against a rich purple background. To the eye of DMS geneticist Jennifer Loros, Ph.D., the profusion of shapes and colors suggests a large multiple protein complex, such as the enzyme complex responsible for transcription. This process—in which RNA is copied from a DNA template—is vividly represented in the second painting, titled "Transcription on lavender ground." In it, blue and green strands, representing the double helix of DNA, give way to a brilliant strand of orange, representing the RNA molecule, all against a soft lavender background.

Following the luncheon, Loros and Jay Dunlap, M.D., chair of genetics, gave the Morses a tour of the nearly 10,000 square feet of space in Remsen newly renovated for the genetics department, where their daughter's artwork now hangs. S.F.

two of his colleagues in pediatrics—John Moeschler, M.D., and genetic counselor Susan Berg. They worked to narrow down the diagnostic possibilities, since the patient's symptoms could have been caused by several disorders. A hematologist joined in when a glycosylation problem was suspected, to help look for blood-clotting problems.

Novel: Once it became clear that this was a novel glycosylation defect, help arrived from pathology, in the form of T.K. Mohandas, Ph.D., and Jonathan Park, Ph.D., who cultured cells from the patient's skin to help look for the defect. Then came collaborations with scientists at other institutions—experts in glycosylation who could do further experiments to pinpoint and characterize the defect.

The bright side of this story is the speed with which the defect was identified, but there is a darker side, too, in that treatments for most genetic disorders are still in their infancy. For the baby boy with CDG type Ie, supplementing his diet with extra mannose helped him gain weight and improve in size and strength. But there has been no way to correct the mental retardation that he also suffers from.

As of now for such patients, says Filiano, "the best that we can do is treat their seizures and know what they have, so that we're not doing a lot of expensive studies to find out. And the parents can make a decision regarding whether they want to have other children" as a result of knowing the defect is genetic.

But the paucity of treatments does not discourage Filiano. He sees clinical genetics as being in an early and exciting phase of identification and diagnosis. "If we made the analogy with infectious disease," he explains, "by the turn of the [20th] century we were identifying diseases all the time—[using a] combination of microscope, culture media, histological stains.

"We could tell the difference between bacterial infections, viral infections, fungal infections, parasite infections, but we didn't have any treatment," Filiano continues. "Then came Fleming and penicillin and after that came treatments." So for now, Filiano is satisfied with being able to give solid diagnoses.

He says that uncovering what was wrong with the baby boy is a testament to the fact that "the infrastructure was available. . . . There were a lot of minds on this case, and everything happened as a matter of course. That takes years to put together, and I and my patients have benefited from it." The identification of CDG type Ie would not have been possible, he says, without the right people and equipment to take care of the patient, rule out other diagnoses, and perform the lab experiments that showed he had a cellular defect.

Prepared: "Everyone was prepared and ready and used to thinking this way and operating this way," Filiano says of his colleagues. Then, in a twist on Louis Pasteur's observation that "chance favors the prepared mind," he adds: "Chance favors the prepared institution."

Marta Hristova

Surgeon general and other policy experts speak at Dartmouth

Surgeon General David Satcher, M.D., Ph.D., topped the bill at a recent day-long gathering for physicians and mental health workers from throughout New Hampshire. The event was hosted by Dartmouth and sponsored by the state medical society.

The surgeon general spoke about the failure of the U.S. health-care system to adequately provide services for the mentally ill. "It's time for us to take on this issue," he declared. His office had recently released *Mental Health: A Report of the Surgeon General,* the first surgeon general's report on this topic. He stressed that the report was not based on opinion or politics, but on "the best available science."

Due to tremendous gains in scientific understanding of the brain, Satcher said, we can now conclude that "mental disorders are physical disorders. . . . These findings are significant in a society that often questions whether mental illness is real." He noted that one in four Americans suffers from some sort of mental illness each year. Furthermore, mental illness is second only to cardiovascular disease in the disability it causes and thus the burden it places on society.

Satcher also discussed the tragedy of suicide and its connection to mental illness. He pointed out gaps in mental health care at different stages of life, from childhood to old age. For instance, he said, many older people who commit suicide have seen a physician shortly before their death.

Stigma: The surgeon general noted that "research has improved our ability to recognize, diagnose, and treat mental illness." However, he added the

MARK AUSTIN-WASHBURN

New Hampshire Medical Society President David Charlesworth, left, and DMS Dean John Baldwin, right, flank Surgeon General David Satcher during a well-received talk that Satcher recently made at Dartmouth.

"bad news" is that "less than 50% of these people seek treatment." He attributed some of this disparity to the stigma associated with mental illness. But, Satcher countered, "just as things go wrong in the heart and the lungs, things go wrong in the brain. . . . We don't see a person suffering from chest pain and hesitate to get them help, and that's the attitude we must take."

Access to mental health services is also hindered by limits on insurance coverage, Satcher said. But by order of President Clinton, he added, any health plan for federal employees must now provide the same coverage for mental health as for other medical services.

"That has to be a part of our vision for the future, to remove the barriers to mental health services," concluded Satcher, to a standing ovation.

Overview: Hugh Scully, M.D., president of the Canadian Medical Association, spoke next, providing an overview of the Canadian system's mental health capabilities. He singled out the paucity of caregivers as Canada's greatest barrier to mental health care, calling it a potential crisis for the country.

The afternoon session concentrated on the issue of prescription drug coverage under Medicare. Richard Frank, Ph.D., of the Department of Health-Care Policy at Harvard Medical School, described the key conflict in the present system as the effort to produce good drugs, produce them quickly, and produce them at low cost. He suggested that it is difficult to meet all three of these goals at the same time. Frank said the difficulty will be to provide protection for the elderly in a way that doesn't harm technological development. "There's going to have to be a careful balancing act," he concluded, "and everyone is going to be a little dissatisfied in the end."

Congress: U.S. Representative Charles Bass of New Hampshire followed with an insider's view of efforts in Congress to introduce prescription drug coverage to Medicare. Bass said the good news is that everyone agrees on the importance of adding this benefit; he was convinced it will happen soon. However, he saw "philosophical differences" underlying the Republican and Democratic plans. "I wish we could pass a bill one way or the other," Bass said, "because costs for seniors will go down."

Finally, the president of the New Hampshire State Senate, Beverly Hollingworth, spoke on the role of the states in national health-care issues. She admitted that states have less power in today's global economy, and she also said that it's difficult to pass any measure that the pharmaceutical industry opposes. She mentioned the New Hampshire Medication Bridge Program as a local effort to improve access to prescription drugs.

Hollingworth concluded that the federal government must take the most significant steps in addressing these issues, but added that states "can do more to lessen the impact of high prescription drug prices."

Jonathan Weisberg

FLYING SQUIRREL GRAPHICS

Celebrating pathological longevity

When Kitty Coutermarsh Vezina applied to work at Dartmouth Medical School in April of 1969, the going rate of pay for a laboratory technician was $1.65 an hour. She was hired to work in the Department of Pathology, where she's been ever since—for almost 32 years.

Such longevity does not go unnoticed at DMS. Indeed, Vezina recently received a cane commemorating her length of service. It's a simple wooden staff, painted green, with small brass plaques naming all those who have received it.

The tradition of the cane began in 1976, according to Connie Carr, who is now retired and was the cane's previous holder. She gave Vezina the cane, which had been presented to her in 1991, at a brief ceremony on November 17. (Carr is on the left in the photo above, and Vezina on the right.)

According to Carr, Leo Melancon, who started working in the hospital morgue in 1936, was given the cane in 1976 by fellow employee John Rogenski to mark the length of his tenure. Rogenski himself was the next recipient, and after him Leo Dauphinais received the cane. It was always, Carr stresses, an informal award, given by employees to other employees to honor the one among them who had served longest.

Vezina, it was noted by several of her bosses past and present, is the kind of employee everyone would like to have on their team. "She can get better precision on RIAs [radioimmunoassays—a method for determining levels of hormones in the blood] than the automated machines," noted pathologist K.T. "Jerry" Yeo, Ph.D., at the November 17 presentation. "Kitty has been very flexible about a changing environment."

"We had many good times together for more than 20 years," remembered Truls Brinck-Johnsen, Ph.D., now a professor of pathology emeritus. "Kitty was very bright, very hard-working, and very interested. We got her into important work; she learned to do very sophisticated analysis. . . . You did good work," he concluded. And she's still at it. M.M.C.

DMS psychiatry joins forces with state prison system

"There are more psychiatric patients in prisons in our country than there are in mental hospitals," says Peter Silberfarb, M.D., chair of psychiatry at DMS. "It's a national disgrace."

Dartmouth Medical School has stepped in to help with this growing national problem, and under a contract with the state will provide psychiatric services to inmates in the New Hampshire prison system.

"Our prisons have become the mental hospitals of the '90s," Silberfarb continues. "Up to 25% of inmates have a significant psychiatric disorder and have spent overnight in a mental hospital at some point in their lives. The amazing thing was that almost 40% of white women prisoners 24 and under have been identified as having mental illness."

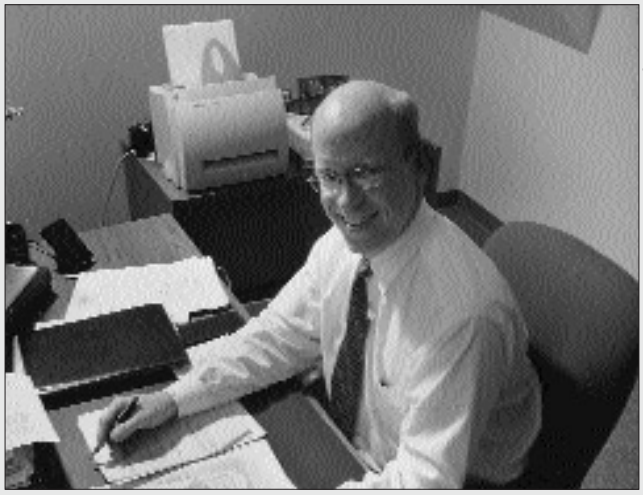
Prevalence: According to the National Alliance for the Mentally Ill, there are four times more mentally ill people in prisons than in mental hospitals. Individuals may enter the criminal justice system with severe psychiatric disorders or may develop psychiatric symptoms while incarcerated. The prevalence of schizophrenia and major affective disorders is estimated to be two to three times higher among inmates than in the general population. And prison life can intensify mental illnesses, since corrections officers are often unable to distinguish between mental problems and simple unruliness. Mentally ill inmates serve, on average, about 15 months longer than other inmates, often because they are disciplined for behavior such as fights.

The agreement between the Medical School and the prison system is an amendment to DMS's longtime contract to provide psychiatric services at the New Hampshire Hospital, the state's psychiatric facility.

"This is incredibly exciting," says Linda Flynn, A.R.N.P., M.S., the administrative director of medical and psychiatric services for the New Hampshire Department of Corrections. Flynn, coincidentally, was at the New Hampshire Hospital in the late 1980s when its contract with DMS was initially signed. At the time, such a partnership—under which a nonstate entity took responsibility for the medical care for residents of a state-run mental health facility—was the first of its kind in the nation.

Flynn has been pleased with that collaboration and looks forward to the new relationship with the Department of Corrections. DMS brings with it a whole system of information, she says, an awareness of current trends, and knowledge that has been researched and validated.

First: DMS is, as far as Silberfarb knows, the first nonpublic medical school to provide psychiatric services to a prison system. He does know of a few public schools engaged in such efforts, including the University of Connecticut and the University of Massachusetts at Worcester. DMS will be providing psychi-



FLYING SQUIRREL GRAPHICS

New development VP finds his work "a joy"

Brian Lally started his working life as an air traffic controller, but he says that, in retrospect, "pushing tin" was less stressful than raising money. DHMC's new vice president for development, Lally (pictured above) is qualified to make the judgment: before coming to Dartmouth, he spent four years as an air traffic controller in New York and then 18 years—most recently as director of development for individual gifts—at New York's Memorial Sloan-Kettering Cancer Center.

But although being a fund-raiser may involve stress, Lally makes it clear that it's an energizing sort of stress. "The real joy of development work," he says, "and this is surprising to people, is what a wonderful experience it is to be able to give money away in a way that makes a difference. It is a joy marrying institutional needs to the donor's need to have an impact—to make it successful for both parties." And, he says, "often you find a friend, and also an individual who is being extraordinarily generous in a way they never thought they'd be."

The challenge he faces at DHMC is ensuring a funding stream sufficient to support "this outstanding academic medical enterprise. . . . You need a world-class faculty," he says, "which takes the resources to attract them."

Lally describes himself as a "New York kid," having grown up and spent almost his entire life in or near the Big Apple. He attended Stuyvesant High School and the City University of New York's Queens College, and he holds an M.B.A. from St. John's University.

Was it an adjustment for such a confirmed New Yorker to make the transition to the Upper Valley? Lally shakes his head. The culture is great, he says, and the schools—he has one child in middle school and one in high school locally, plus two in college elsewhere—are exceptional. But, he admits, he's still looking for a barber and for that glory of metropolitan life—the one-day shirt laundry. M.M.C.

atric services to the Secure Psychiatric Unit—a 60-bed, free-standing facility in Concord—as well as to the men's prison in Concord, the women's prison in Goffstown, the Northern New Hampshire Correctional Facility in Berlin, and the Lakes Region Facility in Laconia.

The Medical School will hire four psychiatrists, including a medical director to oversee the design and implementation of the program and to supervise DMS residents and medical students. The medical director will report to Flynn on administrative matters and on medical matters to Silberfarb, through the state hospital's medical director—Robert Vidaver, M.D., vice chair of psychiatry at DMS.

"I see this as a tremendous opportunity for training medical students and residents," says Silberfarb. In addition to its long-standing psychiatry residency program, the department just this year started a forensic psychiatry fellowship program.

Aging: The collaboration also offers a chance to determine the kinds of services that the aging prison population needs. America's prison population is growing as well as getting older—due, in part, to increases in mandatory sentencing, in the age of first-time offenders, and in the age of the general population.

"What I hope to do is make this a national model," Silberfarb says. "Our state hospital has become a gem. It's really the gold standard now for state hospitals across the nation. We hope to do the same for the prisons."

Laura Stephenson Carter

MEDIA MENTIONS:

Among the people and programs coming in for prominent media coverage during recent months was Dr. **Harold Sox,** DMS's chair of medicine. He was quoted from the *Washington Post* to the *San Francisco Chronicle*, from National Public Radio to CNN, in connection with his role heading a panel of experts convened by the Institute of Medicine to investigate the cause of Gulf War syndrome. The panel's report concluded that there's not enough evidence to either confirm or deny a link between the syndrome and several suspected causative agents. "We'd like to give veterans and their families a definitive answer, but the evidence is simply not strong enough," Sox was quoted as saying in the *Chicago Tribune*.

A recent PBS special titled "Critical Condition" described a regional collaborative aimed at improving cardiovascular surgery outcomes in northern New England. Among those interviewed on the show was DMS's Dr. **Gerald O'Connor,** a key member of the collaborative. "We found that the mortality rates, that is the death rates across the region after heart surgery, varied substantially," said O'Connor. "In the lowest center, they were about 2%. That is, two out of a hundred patients dying. And in the highest, they were about six out of a hundred. We realized, right away, that it was not differences caused by differences in patients." The region has since then seen a 24% reduction in mortality after heart surgery. "There's very good evidence that northern New England is the best place to have chest pain in the country right now," O'Connor said on the show, emphasizing that the outcome is a result of "what we have done as a group, not just what we're doing as individual institutions."

A Dartmouth neuroscientist was quoted by UPI in a report that German scientists had taken "the first step toward unraveling the cellular 'wiring' of different parts of the brain." The finding "might ultimately help doctors determine what goes wrong in conditions such as autism and Alzheimer's disease, said neurology experts. According to **Michael Gazzaniga,** a professor of cognitive neuroscience at Dartmouth College, the painstaking discovery is the first evidence of cellular differences between corresponding structures on the right and left sides of the brain. . . 'This is a quantum jump forward,'" Gazzaniga said.

A three-part series in *USA Today* explored the variations in medical practice patterns uncovered by the *Dartmouth Atlas of Health Care*. "Operations often depend on where you live" was the headline on one piece in the series, which noted: "'Local medical opinions regularly differ to the point that four times more people in one region get a surgery' than do their neighbors, says **John Wennberg** of the Dartmouth Center for the Evaluative Clinical Sciences and head of the *Atlas* series." And in an article titled "Total trust in physicians is unwise," Wennberg was quoted as saying: "It's fair to say that we're trying to promote a new model of making surgical decisions that features open communication about what's known and not known about a procedure."

"Mommy, I have to throw up!" was the attention-getting headline on a feature in *Parents Magazine* that quoted a DMS infectious disease specialist, among other experts. Vomiting plus diarrhea and a mild fever, "in children over five, . . . particularly in the winter, could be caused by a group of bugs called caliciviruses," said the article. "'Symptoms tend to last 24 to 48 hours,' says **John Modlin,** M.D., acting chair of pediatrics at Dartmouth." After the child stops throwing up, Modlin advises of-

DMS & DHMC IN THE NEWS

fering a small amount of milk or juice. "If the fluid stays down and your child is willing, encourage him to eat whatever appeals to him, Dr. Modlin says."

The impact on teens of smoking on the silver screen was the topic of a recent Dartmouth study that's caught the attention of the media. Recently, both the *Christian Science Monitor* and *Health* magazine took note of it. "A new study finds that 95% of the most popular movies from 1988 to 1997 depict actors using tobacco," said the *Monitor,* "and of the films aimed at children, one in five featured smoking. Does all this have anything to do with the fact that 23% of high school seniors in the United States smoke daily? (And that figure was 17% eight years ago.)" And wrote *Health*, "**James Sargent,** a physician at Dartmouth Medical School, asked 632 teenagers to name their top film idols and then quizzed the kids on their own habits. Turns out, kids who picked a celeb who routinely lights up in flicks were three times more likely to take a drag themselves."

The dilemma of how, or even whether, to conduct controlled clinical trials of pharmaceuticals among children was the subject of a feature in the *New York Times*. "Researchers agree [that] where there is no effective treatment, placebos may be appropriate. 'There is still not an established standard of care for the treatment of child depression,' said Dr. **Craig Donnelly,** an assistant professor of psychiatry and of pediatrics at Dartmouth-Hitchcock Medical Center. Dr. Donnelly is now engaged in a large study of child depression, in which five antidepressants previously tested on adults only are being tested on children. Half will receive the drugs and half placebos."

The link between hospital volume and health outcomes was the subject of a recent *Los Angeles Times* feature. "'Surgeons are viewed as the captain of the ship, and patients are always concerned about their doctor's credentials,' says Dr. **John Birkmeyer,** a surgeon at Dartmouth Medical School. 'But the fact is that where your surgery is done or your disease is treated is even more crucial.'" Check the numbers at your hospital, advised the article. "'If they can't or won't give you the information,' says Dartmouth's Birkmeyer, 'that's a red flag.'"

Family Circle magazine recently reported that "left-handed women may have a higher risk of breast cancer than right-handed women, says a study led by **Linda Titus-Ernstoff,** Ph.D., at Dartmouth Medical School. Hormones in the womb, which may help determine a baby's dominant side, might also increase a woman's breast cancer risk. . . . Nevertheless, reassures Dr. Titus-Ernstoff, 'these findings indicate only a modest increase in risk.'"

"Exploring the enigma of prostate therapies" was the headline on a feature in the *New York Times*. "What makes . . . decisions about treatment [for prostate cancer] so difficult," said the article, "is that doctors do not know which one is most effective. . . . Dr. **John Wasson,** an expert on health-care delivery at Dartmouth, said there was no proof from scientifically controlled trials 'that any treatment is better than watchful waiting' and then, if the cancer spreads, prescribing drugs to lower male hormones to make the cancer shrink or grow more slowly. . . . Rigorously controlled trials for prostate cancer have been difficult to do 'because everyone felt they knew the answer,' said Dr. Wasson of Dartmouth."

When Miami Heat hoops star Alonzo Mourning was diagnosed with kidney disease, CNN turned for expert commentary to Dr. **Brian Remillard,** a nephrologist at Dartmouth-Hitchcock Medical Center. The CNN anchor asked Remillard to explain Mourning's condition, focal scoliosis. "That's a term that's used to describe a scarring process in the kidney," said Remillard, "which can occur for a variety of reasons. But probably the most common in African-Americans is hypertension. . . . In the age group that Alonzo is in, I think that this condition is much more common than recognized." Treatment options range from drug therapy to dialysis or a transplant, and Remillard said the choice depends on how advanced the disease is and how much kidney function remains.

In her "Personal Health" column in the *New York Times,* Jane Brody recently emphasized the importance of early detection of infant deafness. "Deafness is the most common disability present at birth," she wrote. "'A deaf newborn looks and acts like any other baby,' said Dr. **Andrew Schuman,** an adjunct professor of pediatrics at Dartmouth Medical School. There are rarely outward clues, and unless newborns are tested for hearing loss, it is often not detected until the child is two or three and fails to start talking. Such delays can permanently impair a child's ability to learn to speak intelligibly and can result in long-lasting social, emotional, and academic difficulties."

A new PTSD study: Injured children can suffer syndrome, too

A car skidded off a snow-covered road and smashed into a tree. A 13-year-old passenger was severely injured. Two adults with him, including one of his parents, were killed. The boy was admitted to DHMC, and within a few days his broken bones and cuts were on the mend.

Intrusive: But a month later, the boy was still suffering from psychological wounds, says child psychiatrist Robert Racusin, M.D. "He was having nightmares about the crash. . . . It was intrusively coming up in his mind, even though he was trying to do other things like go to school." In short, says Racusin, the boy "had all of the cardinal symptoms of post-traumatic stress disorder," or PTSD.

PTSD has long been recognized as a problem for battle-scarred soldiers or survivors of major natural disasters. But for hospitalized children? Yet observations that this might be the case led Racusin and several colleagues to conduct a year-long study of children admitted to DHMC with injuries. "The question was," Racusin explains, "is there any way of . . . determining which children who come into the hospital with an injury are likely to develop post-traumatic stress disorder?"

Every child admitted to DHMC for more than a single night was invited to participate. The children who joined the study and their parents were interviewed and given a series of tests at the time of the hospitalization. The researchers gathered quantitative data using various tools. They used the surgeons' Injury Severity Scale to assess the child's injuries. They used a tool called the Traumatic Events Screening Inventory, which they developed in conjunction with the White River Junction VA, to determine if the child had been traumatized by the accident or had been previously traumatized. And they screened the children for existing psychological problems and measured the parents' level of distress.

FLYING SQUIRREL GRAPHICS

Child psychiatrist Robert Racusin headed a study that turned up some surprising findings.

Test: The researchers then followed up with all the children a month later, administering a test to determine if they had symptoms of PTSD and how much it was affecting their lives.

The study, which was published in the *Journal of the American Academy of Child and Adolescent Psychiatry,* turned up some surprises. Nearly 30% of the children had "significant post-traumatic symptomology," says Racusin, and 12.5% developed full-blown PTSD.

"Thirty percent is a lot of kids when you're talking about an aftermath," adds Racusin. "Thirty percent of kids having infections following a procedure would be considered a very high rate. And people would want to know why and how to lower that."

The variables that the study found best predicted which children would develop PTSD were "the children who had been traumatized before; the ones who already had some psychological problems to begin with; and, even more so, the children whose parents were themselves experiencing a lot of distress about the child's injuries." These factors all outweighed severity of injury, even though some of the children suffered long-term impairment and disfigurement.

The influence of parents' reactions was another surprise. But it makes sense, Racusin explains. "Parents serve as a very important buffer for children when children are faced with stress of various kinds. When parents are doing well, they can buffer stress quite well for children—and the opposite is also true."

Racusin adds that children tend not to put memories into words or to talk about intrusive thoughts. However, stress can come out in their play. "Traumatic play," he explains, "is like just a fragment out of a Stephen King novel . . . that gets played over and over again." This is represented in another finding of the study: while almost 95% of children felt that their lives had been in danger or felt horrified and helpless—the criteria for trauma—many fewer of the parents thought their children had been traumatized. "It's not something that the children necessarily communicate to parents," says Racusin, "or that parents necessarily infer."

Impact: Racusin feels the results suggest three ways to improve the care of injured children. First, he says, some simple screening questions may help identify high-risk children. Second, more support for parents may help lessen the impact of parental stress. Finally, educating parents and children about the warning signs of PTSD may help them identify it after they leave the hospital; treatment "is much more effective when you do it very early on," Racusin says.

The boy above is a good example. After his PTSD was identified, he achieved significant recovery with the help of counseling and medication. But it was still a difficult recuperation.

"One of the problems with PTSD is, if you start to have all of these intrusive memories about the trauma, . . . you're not able to do the actual grief work," Racusin points out. "He was able to get on to do a more normal kind of grief repair work."

Jonathan Weisberg

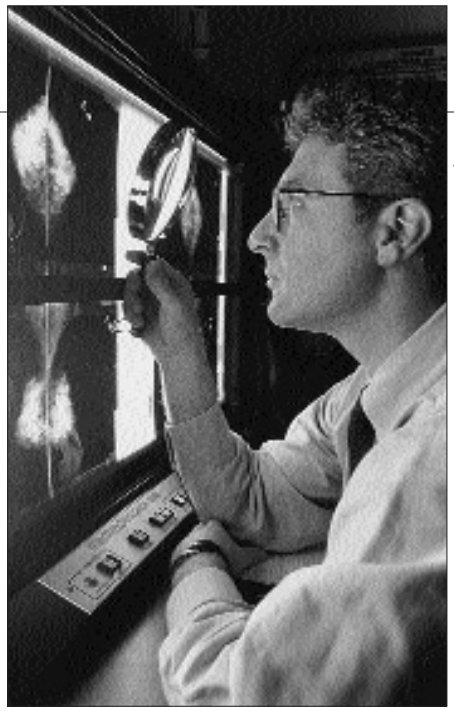
DMS and Thayer team up to test new imaging methods

Although mammography is credited with saving thousands of lives through the early detection of breast cancer, it remains one of the most challenging of all radiological procedures. Conventional mammography, which uses x-rays, must sometimes be coupled with ultrasound in order to distinguish cysts from tumors. Even so, the process is not well suited to younger women, because they tend to have much denser breast tissue.

But some other options are now on the drawing board. Just over a year ago, the National Cancer Institute awarded nearly $7 million to Dartmouth to explore four new techniques for breast imaging. The principal investigator for the effort is Keith Paulsen, an associate professor at Dartmouth's Thayer School of Engineering and a 1986 graduate of its Ph.D. program in biomedical engineering.

Similarities: The four new imaging techniques make up four subprojects of the grant. There are a couple of similarities among the subprojects. First, all four draw heavily on central computational capability. The output from either conventional mammography or ultrasound is in the form of a photographic image that can be interpreted by a radiologist. But the raw data from the new imaging techniques is too diffuse for photographic imaging, and so it needs to be mathematically refined and enhanced. In addition, all four of the techniques are so new that most of the equipment and instrumentation that they require has had to be custom-built in labs at the engineering school.

Four subprojects: Brian Pogue of the Thayer School is heading up a subproject that is attempting to use optical tomography in combination with spectroscopy. Tomography, a process that is already widely used in radiology (the "T" in CT scan stands for tomography, for example), provides information on a slab of tissue in the body.



JON GILBERT FOX

Radiologist Steven Poplack is overseeing the clinical aspects of developing four new imaging techniques to augment or replace mammography; the project is funded by a nearly $7-million grant from the National Cancer Institute.

The hope is that this technique can avoid the problem caused on a conventional mammogram by overlapping structures in the breast. The new technique involves measuring the propagation and scattering of light through the breast in a slice-by-slice fashion. The process uses monochromatic light—that is, a single wavelength of light—in the near-infrared range, which makes it possible to measure the hemoglobin concentration within the tissue. Breast tumors need to develop their own blood supply through a process called angiogenesis in order to survive. The hope is that the enriched blood supply to a tumor can be visualized spectroscopically as an increase in hemoglobin concentration, and then mapped to a specific location within the breast. This technique has already been used in a preliminary fashion, with encouraging results, on about 35 women.

The other three techniques are similarly cutting-edge. John Weaver, Ph.D., an associate professor of radiology, is applying the technique of magnetic resonance elastography to tumor imaging. This method, which is only about five years old, depends on measurements of the displacement of tissues in a magnetic field, from which one can infer the stiffness, or hardness, of the tissue. Malignant tumors are usually less elastic, or harder, than either normal breast tissue or benign tumors.

Alexander Hartov, Ph.D., a research assistant professor of surgery, is working with a process called electro-impedance spectroscopy, which explores the ways in which electrical current or voltage is conducted through breast tissue.

And Paul Meaney, Ph.D., of the Thayer School is working on a method that uses microwave propagation through tissue to produce spectroscopic images. This technique has now been tested in about 15 patients.

At this point, it appears that the time involved for an examination with any of the new techniques is comparable to that of conventional mammography. It is possible that the new methods will offer some economies over mammography, however, since they may turn out to be less operator-dependent.

Compression: In addition, some women complain of discomfort during conventional mammography—since current technology requires the breast tissue to be compressed between two plates—so the fact that none of the four new methods involves compression of the breast is seen as a benefit.

All the new techniques will, of course, be compared with conventional mammography and ultrasound. In addition, the researchers will determine whether the new techniques prove to have synergistic effects when used in combination with conventional methods. Thus the new techniques may end up augmenting rather than replacing the older ones.

The clinical aspects of the project are being overseen by Steven Poplack, M.D., an assistant professor of radiology. He

explains that there are no satisfactory animal models on which to test these techniques because each is critically dependent on the unique composition and geometry of the human breast. However, the investigators have established the safety of the new techniques through simulations and tests on phantom and surrogate human tissue as well as in volunteer subjects. Both in theory and in practice, there appears to be no risk to humans.

Enrollment: Eventually, the researchers plan to enroll 150 patients in the project. Of those, half will come from a group in which a biopsy has been recommended on the basis of mammography or ultrasound. For this group, there will be immediate biopsy evidence to confirm or refute the findings of the new techniques. The other 75 study participants will serve as controls—as will the opposite breast in the biopsy group, since the vast majority of these women will have a biopsy on a single abnormality in only one of their breasts.

In the meantime, preliminary studies are now under way to define with each of the four new techniques the normal range of images in women of different ages and breast densities. The researchers are also using the new methods to record the appearance of breasts with benign abnormalities that were established with conventional methods. Such a database of experience has been accumulating over more than 20 years for mammography, and now one must be built for the new methods.

ROGER SMITH, PH.D.

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

William Wickner, M.D., the Chilcott Professor of Biochemistry, has

been elected a member of the European Molecular Biology Organization, which, in addition to Europeans, selects a small number of foreign scientists for membership each year.

Paula Schnurr, Ph.D., a research professor of psychiatry, was elected to the board of directors of the International Society for Traumatic Stress Studies.

Norman Yanofsky, M.D., an associate professor of medicine and chief of emergency medicine, and **John Sutton,** M.D., an associate professor of surgery and chief of trauma, received the "Connor Honor" for their leadership in and commitment to New Hampshire Emergency Medical Services. They are the first recipients of this brand new award.

Robert Harris, M.D., an associate professor of radiology and of obstetrics and gynecology, was re-

cently named a fellow of the American College of Radiology (ACR); he is currently the New Hampshire councilor to the ACR as well as the immediate past president of its New Hampshire chapter.

Robert Santulli, M.D., an assistant professor of psychiatry, was re-elected president of the New Hampshire Alzheimer's Society.

Alex de Nesnera, M.D., an assistant professor of psychiatry, was elected president of the New Hampshire Psychiatric Society.

Two DMS faculty members were recently honored by the New Hampshire Pediatric Society. **Gilbert Fuld,** M.D., an adjunct assistant professor of pediatrics, was named Pediatrician of the Year; he is a past president of the society. And **Robert Klein,** M.D., a professor of pediatrics, was the recipient of the Franklin Norwood Rogers Award, recognizing a retired New Hampshire physician for lifelong contributions to the field.

Kristine Karlson, M.D., an assistant professor of community and

family medicine, served as the team physician for the U.S. National Rowing Team at the 2000 World Championships, which were held in August in Zagreb, Croatia.

Peter Klementowicz, M.D., an adjunct clinical professor of medicine, was named chair of Governor Jeanne Shaheen's Advisory Panel on Cancer and Chronic Diseases.

The New Hampshire Foundation for Healthy Communities bestowed its Innovators Award, which recognizes "extraordinary ingenuity, creativity, and skill in improving health or health-care access, delivery, or quality," on **Emily Baker,** M.D., an assistant professor of obstetrics and gynecology; **Victoria Flanagan,** R.N., an instructor in pediatrics; **Michele Lauria,** M.D., an assistant professor of obstetrics and gynecology and of radiology; and **Suzanne Boulter,** M.D., an adjunct assistant professor of pediatrics.

Stephen Bartels, M.D., an associate professor of psychiatry, was

named medical director for the New Hampshire Division of Behavioral Health and co-director of the New Hampshire-Dartmouth Psychiatric Research Center Behavioral Health Policy Institute.

Benjamin Lewis, Ed.D., a clinical associate and instructor in psychiatry, was recently appointed a member of the Performance Measures Standing Review Committee of the Substance Abuse and Mental Health Services Administration.

Pamela Jenkins, M.D., an assistant professor of pediatrics and of

community and family medicine, received the Doris Duke Clinical Scientist Award for 2000. It is an award intended to help support new physicians and scientists pursuing clinical research.

Anne Brisson, Ph.D., a research assistant professor of medicine and senior assistant to the dean, was appointed by Governor Jeanne Shaheen to a task force to evaluate and make recom-

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