MAKING A STATE-MENT: A children's book in the "It's my state!" series says "New Hampshire's tech-friendly environment is also drawing some of the best scientific minds in the country" and gives Dr. Charles Brenner, a DMS geneticist, as its example.

resentative of the Children's Alliance of New Hampshire.

Lampman says he is drawn to public policy for the same reason that he is drawn to medicine. "You just want to help people," he explains. "You want to make other people's lives better." He and fellow PHPAC members have also been inspired to act by the health-care inequalities they have witnessed both during their clinical rotations and in their personal lives.

Wonder: "Coming into medical school," says Salma Dabiri, a fourth-year medical student and a PHPAC member, "I always thought there were never enough resources." But as her training has progressed, "you start to wonder," she says. "Is it that those resources are there and they're just not appropriately distributed? That's a different question entirely. It's difficult to ask all these questions when you're so fully involved in your day and you're taking care of your patients."

Rob Lampman, who starts his clinical rotations this fall, worries that he, too, will feel the time constraints of the clinical setting and will not be able to play as active a role in PHPAC. "We are looking for another student to pick up leadership of this organization," he says.

The U.S. health-care system is full of gaps, points out O'Donnell, so "the Robs of the world are trying to make a system without gaps." And O'Donnell is staying on the lookout for more "Robs" to make PHPAC an ongoing force at DMS.

Jennifer Durgin

Laying the groundwork for gene therapy

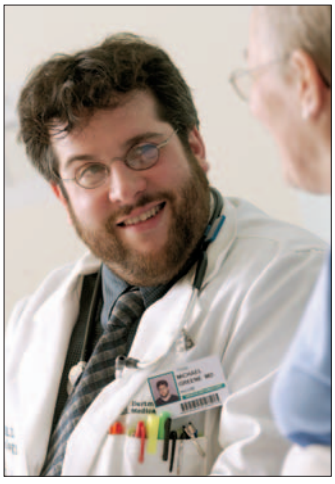
A few years ago in France, 10 children with a severe immunodeficiency disorder—made famous by the "boy in the bubble"—underwent a new gene therapy treatment. Initial results were spectacular. Nine of the 10 children, who otherwise would have died, were pronounced free of the disorder. But shortly thereafter, three of the "cured" children developed leukemia.

When it was discovered that the leukemia had been caused by the treatment, the worst fears about gene therapy were realized. If genes can be inserted into someone's DNA to "fix" a disorder, could those genes also cause new problems? The French trial (known as X-SCID) showed the answer was "yes."

Lab: With that realization, the field of gene therapy was pushed back to the lab bench. It was clear that scientists needed to understand more about gene therapy in order to make it safe.

One of the scientists doing that bench work today is Dr. Michael Greene, a hematology-oncology fellow at DHMC and this year's Tiffany Blake Fellow. The Tiffany Blake Fellowship, underwritten by the Hitchcock Foundation, funds a year of research for a physician just beginning an investigative career.

MARK WASHBURN



Doing gene therapy is Greene's goal.

The fellowship will fund Greene's research on retroviruses—molecular vehicles, or vectors, by which therapeutic genes are inserted into a cell. Greene aims to reveal some of the factors that determine exactly where a retrovirus inserts itself.

Until X-SCID proved otherwise, many researchers assumed that retroviruses (and the therapeutic genes they carry) inserted themselves randomly. Greene recalls being taught this in the mid-1990s. "I specifically learned that retroviruses insert randomly into the genome," he says. "Now that I've become interested in this problem, I've gone back to the research of the '80s and '90s, and it's pretty clear that that thought wasn't true." There may be a random component, he explains, but there are other factors at play, too. Understanding these factors is a small but vital step toward making gene therapy safe and realizing its potential—possibly curing hundreds of diseases caused by genetic mutations.

Greene has been interested in gene therapy ever since learning about it as an undergraduate biology major at Clarkson. Since earning an M.S. in cellular and molecular biology at West Virginia University in 1996 and his M.D. at the University of Connecticut in 2000, he's been at DHMC—first as a resident and now as a fellow. He used his elective time during residency to work in the lab of Dr. Christopher Lowrey, who studies gene therapy, and will conduct his fellowship research there.

One day, Greene hopes to direct his own lab, but he doesn't want to do research full-time. "I want to always work with people," he says. He recently did a two-month rotation at the Fred Hutchinson Cancer Research Center in Seattle, where he gained experience with bone marrow transplants from one individual to another. (In most bone marrow transplants at DHMC, patients are given their own treated cells.) "The way of getting gene therapy . . . into people," says Greene, "is with a bone marrow transplant," so the training will likely come in handy.

Wide eyes: "My ultimate goal," Greene adds, "is to be the old doctor at some medical school somewhere, where young medical students with wide eyes are going to come up and ask me what it was like to treat people with cancer with poison [chemotherapy] . . . back in those dark times." Given Greene's accomplishments so far, he appears to be headed in that direction.

"He's one of the best lecturers around," says Lowrey, who enlisted Greene to help teach pharmacology and hematology-oncology. "He has an unbelievable knowledge of medicine," adds Lowrey, "and the students just love him."

Jennifer Durgin