

TAKEN FOR GRANITE: In November, Dartmouth's Rural Health Scholars Program hosted 17 undergraduates from Granite State colleges at Medical Student for a Day. The program's goal is to support premeds likely to practice in underserved rural areas.



Students seeking M.D.'s are a varied lot

What do a former professional ballet dancer, a college homecoming king, and a top contestant in the World Canneli Eating Championship have in common? They're all pursuing an M.D. as members of DMS's Class of 2012—a select group drawn from almost 5,600 applications to the American Medical College Application Service.

The 75 new M.D. students came to Dartmouth from as far as Slovakia and Tanzania and as near as New York City and a small town in Maine. Their undergraduate majors ranged from philosophy to biomedical engineering, and they had average GPAs in both

The DMS Class of 2012 was drawn from almost 5,600 applications.

science and nonscience classes of over 3.7. Their average combined MCAT score of 32.9 was DMS's second-highest ever.

Sports: But these students have not spent all their time with their noses to the grindstone, despite their stellar GPAs and MCAT scores. Many of the '12s played college sports—including tennis, ice hockey, and volleyball—and three were DJs for their college radio station.

The new students have also built houses with Habitat for Humanity, acted in independent films, served in the U.S. Marine Corps and the Korean Marine Corps, and translated Holocaust testimonies.

The students' hobbies include skiing, hiking, painting, scuba diving, fencing, playing the piano, woodworking, and traveling

(one student has visited 20 countries . . . so far).

The future doctors have had a wealth of research experiences, too. Students have investigated limb regeneration in mice, the needs of pediatric cancer survivors, embryonic kidney development, and numerical cognition in children.

Reasons: Six of the '12s have master's degrees in science or health fields and 14 are EMTs. But their reasons for entering medicine vary. After volunteering in an emergency room and shadowing doctors, for example, Fiona He says she "realized that medicine was a career that would allow [her] to fulfill the roles of a teacher, student, scientist, and caretaker."

Reza Kordestani, who lived in Iraq during the first Gulf War, says, "The magnificent explosions and supersonic jets in the night sky led to my budding interest in science, yet it was a realization of the devastating aftermath that attracted me to medicine."

Kordestani and others from around the world join a few '12s with Hanover roots. Born at Mary Hitchcock Memorial Hospital, Eddie Ruhland went on to grow up in Hawaii, go to college in California, and work in the South Pacific with the Peace Corps. Now, he says, "I find myself back where it all started, in Hanover, pursuing my dream of becoming a physician."

KATHERINE VONDERHAAR

Ph.D. and master's students chart myriad paths to grad school

The science underlying medicine and the policy surrounding its practice are the focus of study for 147 new students in assorted doctoral and master's-degree programs at Dartmouth Medical School.

The newest of DMS's two interdepartmental basic science Ph.D. programs, in experimental and molecular medicine, admitted nine new students. One of them is already very familiar with DMS. Jennifer Davey majored in biology at the University of Vermont, earned a master's degree there, then taught high-school science for five years. She moved to the Upper Valley in 1988 and tried working at a biotech company but found it not her cup of tea, so she took a job as a lab technician at DMS. She became hooked on research and eventually decided to pursue her doctorate. Her route to this point was indirect, but she's excited about what lies ahead.

Twist: The other basic science program, in molecular and cellular biology, admitted 30 new students, including William McNitt. He majored in biology at Reed College and, taking a path as straight as Davey's was circuitous, applied to Ph.D. programs during his senior year. But there may be a twist in his future: After he arrived at Dartmouth, he learned of the M.D.-Ph.D. option. Medical school had never been on his radar before, but he's now applying to the dual-de-

Some stats about the 75 new M.D. students

5%
Percentage increase in applications over last year



2
Number born at Mary Hitchcock Memorial Hospital



22
Number born outside the U.S.

55
Number of undergraduate institutions represented



8
Number who graduated from Dartmouth College

28%
Percentage who were 25 or older at the time they applied



27
Number of states represented

44%
Percentage women

36%
Percentage students of color and/or international students

gree program in the hope that it will facilitate his ability to do clinical research. That will mean a minimum of nine years as a student, but he still has a smile on his face.

Policy: In addition, 108 students entered various programs of the Dartmouth Institute for Health Policy and Clinical Practice (formerly the Center for the Evaluative Clinical Sciences); 27 are seeking an M.S. in health policy, 63 a master's of public health, and 18 a Ph.D.

Matthew H. Davis entered the M.P.H. program to build on his long-time interest in the environment. He had an appreciation for nature from an early age and spent several summers working for the National Park Service and National Forest Service. After majoring in biology at Swarthmore, he worked for two years for the U.S. Public Interest Research Group, a consumer advocacy nonprofit, before founding Environment Maine, a similar organization focused on the environment. He then took a job overseeing environmental advocacy organizations in five states for Environment America.

True: When his wife's work brought him to the Upper Valley, Davis decided—with the help of a Switzer Environmental Fellowship, a prestigious award for early-career environmental leaders—to pursue an M.P.H. at Dartmouth. He plans to apply it by working on environmental health policy at a federal agency or a nonprofit organization.

Assuming *his* career course holds true, that is.

ROGER P. SMITH, PH.D.

INVESTIGATOR INSIGHT

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

Patricia Ernst, Ph.D.
Assistant Professor of Genetics

Ernst's field is developmental hematology. She studies how blood stem cells achieve a balance between staying quiescent, proliferating, and differentiating—currently in the context of a protein that causes leukemia. She has been at DMS since 2004.

How did you get interested in your field?

When I was an undergraduate, I was fascinated by what keeps us from getting sick every day; I found the immune system so intriguing that I wanted to be an immunologist. As a graduate student, I worked on biochemistry using *in vitro* systems and became conscious that what I was working on was potentially overly simplified compared to what occurs in a living organism. Then I went to a postdoctoral lab where I learned how to model biochemistry in the laboratory mouse—and found a field that was a nice combination of all my latent interests.

What do you like most about your job?

The opportunities to meet nice people from all sorts of places. Science is a pretty social field, since you are in the same space with your colleagues for long hours.



What is hot in your field right now?

In the last 10 years, many people have become excited by tissue and embryonic stem cells for the promise they hold for regenerative medicine. It may be possible to produce custom tissues to repair all sorts of damaged tissues.

When you were very young, what did you think you wanted to be when you grew up?

A jockey, but then I got too heavy.

What are your favorite nonwork activities?

Sleeping, eating, and drinking coffee. And riding horses.

What historical event would you most like to have been at?

The moment when French biologists Jacob and Monod figured out how genes are regulated (over coffee, no doubt).

If you could travel anywhere you've never been, where would it be?

Nanaimo, British Columbia.

If you could trade places with anyone, real or imaginary, who would it be?

I'd like to be The Tick, a superhero popular in the 1990s—to have superpowers and to be obliviously idealistic.

What is the quality you admire most in other people?

Honesty.

What do you think makes for a successful scientist?

Focus.

What is the greatest frustration in your work?

Knowing I'm competing with labs that have 10 times the funding and people of my lab. Being in a small, starting lab, you can visualize a lot of experiments—but it takes a long time to actually do them.

And the greatest joy?

Getting a really cool result that opens up a lot of new angles we can test. Sometimes you see a result where you know it's the last figure you need for a paper, a piece of information that you can really hang your hat on, and you know you'll be able to build a project around it.

What advice would you give someone interested in science?

Talk to many people in the field that you're interested in, at all stages of their careers, to get realistic advice. Then you have to just jump in and believe that you will make it. People who are genuinely and really committed to science stay in the field despite the long hours and the challenging nature of the work.

