

Vitals

M A G A Z I N E

DARTMOUTH HEALTH | GEISEL SCHOOL OF MEDICINE

An Algorithm for HAPPINESS?

SPRING 2026

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at Home...08

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Lending a Hand

In a crisis, clear, timely communication is paramount. Those rendering aid must understand what people need and whether they know of others who also need support. This challenge is especially acute when one person in the interaction is deaf or hard of hearing. That's why Jerome Wilcox, director of inclusive excellence at the Geisel School of Medicine at Dartmouth, is teaching students a simplified sign language system for crisis communication. Humanitarian Sign Language draws from American Sign Language and universally recognizable gestures, and is designed to be especially useful in disaster zones, refugee camps, and emergency shelters. Here, Wilcox is demonstrating the sign for "medicine."

Read more about Humanitarian Sign Language on p. 42.





THIS ISSUE'S THEME

Pathways To Health

It is not enough to develop the most effective medical treatments. Those life-altering interventions need to be within reach. This issue of *Vitals Magazine* explores how innovators in our rural academic medical community are improving access to care, research, and education for the benefit of people everywhere.

Vitals Magazine

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For more *Vitals Magazine* storytelling, go to vitalsmagazine.dartmouth.edu.



“It is an honor and a privilege to be joining the vibrant Dartmouth community. I am looking forward to getting to know the Geisel School of Medicine’s faculty, staff, students, and trainees and collaborating with them to build upon the school’s rich history of innovation and excellence.”

—Jennifer Hunt, MD, MEd



Photo courtesy of Nate Guidry/UF Health

Introducing **Jennifer Hunt**

As the next dean of Geisel School of Medicine, Jennifer Hunt, MD, MEd, will be the first woman to lead Dartmouth's medical school.

Internationally recognized pathologist and physician-scientist Jennifer Hunt, MD, MEd, has been named the next dean of the Geisel School of Medicine at Dartmouth. She will begin her tenure on August 1.

Hunt is currently interim dean of the University of Florida College of Medicine, where she is the Folke H. Peterson Dean's Distinguished Professor. She has published more than 160 peer-reviewed papers, and is a fellow of the College of American Pathologists, where she also served as an elected board member. Hunt has also held leadership roles for the Association for Molecular Pathology, the United States and Canadian Academy of Pathology, and the Association for Academic Pathology (formerly the Association of Pathology Chairs).

Previously at the University of Florida, Hunt chaired the Department of Pathology, Immunology, and Laboratory Medicine and served as chief of the hospital medical staff of the University of Florida Health Shands Hospital and clinics. In that role, she oversaw more than 2,000 credentialed medical staff members and co-chaired the Medical Executive Committee.

Before joining the University of Florida in 2020, she held academic appointments and leadership roles at the University of Pittsburgh, the Cleveland Clinic, Harvard Medical School/Massachusetts General Hospital, and the University of Arkansas for Medical Sciences.

"Jennifer Hunt has the experience and skills to help Geisel shape world-class physicians and health scientists who will also be leaders in their communities," says Dartmouth President Sian Leah Beilock, PhD. "And she will help advance Dartmouth's impact in improving rural health care for patients across our region and around the country and world."

"This is a truly historic moment for Geisel, and I am thrilled that the leadership of our great school will be in such capable hands."

—**Steven D. Leach, MD**
Dean (Interim),
Geisel School of Medicine

Hunt studied chemistry and French at Bryn Mawr College and earned an MD and an MEd from the University of Pennsylvania, where she also completed a residency in anatomic pathology and a fellowship in molecular genetic pathology.

In addition to her work in medicine, Hunt is an executive coach trained and certified by the International Coach Federation, with extensive experience in leadership development and professionalism in health care.

To learn more about Jennifer Hunt and the future of Geisel School of Medicine, go to dartgo.org/deanhunt or contact Kim Labonte at 603-646-5110 or Kim.Labonte@dartmouth.edu.

Facing Uncertainty With Resilience



Healthcare has always demanded ingenuity. Nowhere is that more true than in rural northern New England, where patients may drive for hours through the mountains to see a specialist, where a single rural clinic can serve as a community's entire safety net, and where the distance between the care people need and the care they can reach is something we think about every day.

That challenge has shaped who we are, both at Dartmouth Health and at the Geisel School of Medicine at Dartmouth. As the nation's most rural academic medical community, we know that the most effective treatments in the world mean little if the people who need them most cannot reach them. That conviction runs through everything we do: how we train physicians, how we deliver care, and the research questions we pursue.



It's also what equips us for a moment like this one. Federal funding is under pressure in ways that have real consequences for the clinical trials that expand treatment options, for the researchers who dedicate their careers to advancing science, and for the patients counting on both. Large-scale grants from the National Institutes of Health (NIH), for example, sustain the pipeline that connects a promising idea in a laboratory to a life changed in an exam room. Today, the stakes could not be higher for the communities we serve.

But this is precisely the kind of challenge our community was built to meet. Through ingenuity and a sustained commitment of our faculty, researchers, and clinicians to find a way regardless of circumstance, we are remaining steadfast in our missions despite the pressures facing institutions like ours across the country.

“We are finding ways to remain steadfast to our mission despite the pressures facing institutions like ours across the country.”

—Joanne M. Conroy, MD, and Steven D. Leach, MD

The result: Over the past six years, NIH funding to Dartmouth Health’s Dartmouth Hitchcock Medical Center has grown from \$8 million to more than \$20 million, moving us from 32nd to 25th among independent hospitals nationally, according to the latest Blue Ridge Institute for Medical Research rankings. Geisel also witnessed a \$22 million year-over-year gain in NIH funding, and the Department of Microbiology and Immunology broke into the top ten among peer departments at U.S. medical schools for NIH funding this year, rising from 12th to 9th.

In uncertain times, private generosity has proven equally vital and equally ingenious. Our institutions have built a philanthropic model where investment doesn’t just fill gaps—it multiplies. For example, every dollar raised through philanthropy to support research at Dartmouth Cancer Center generates an additional \$12 in large-scale national grants. The Byrne Family Cancer Research Institute, now surpassing \$50 million in philanthropic support, has helped attract an additional \$110 million in research grants since 2022, drawing top talent and accelerating discovery. We are deeply grateful to the donors whose generosity provides stability when it is needed most, and whose vision continues to strengthen the foundation that makes this work possible.

We have navigated uncertainty before. And ingenuity, we’ve learned, is its own pathway to health. It’s who we are, and it fuels our momentum.

Joanne M. Conroy, MD
CEO and President,
Dartmouth Health

Steven D. Leach, MD
Dean (Interim),
Geisel School of Medicine



The Daily Dose

What if the cure for food allergies has been hiding in kitchen cupboards?

By Jeremy Martin

On a crisp autumn morning in South Londonderry, Vermont, 13-year-old Luke Leopold stands at the kitchen counter eating what his mother calls “his daily peanut”—a routine that would have seemed impossible just five years ago. Back then, Luke was so severely allergic to nuts that trace amounts sent him to the emergency room three times, including one hospitalization where medical staff struggled to stabilize him.

Today, Luke represents the success of a program that’s quietly revolutionizing pediatric allergy care. In the United States, food allergies impact up to 1 in 12 children, according to a study in the journal *Pediatrics*. Access to preventative treatment often determines a child’s quality of life. That’s why Dartmouth Health allergist Marcus Shaker, MD, MS ’08, and physician assistant Sarah Hughes, MPAS, PA-C, have built the nation’s first home-based oral immunotherapy (OIT) program.

◀ Patients use special tiny spoons to measure microdoses of peanut, cashew, or another allergen flour.

Through the program, families administer daily, sub-perceptual “microdoses” at home, an approach designed as much for access as for immunotherapy.

Shaker and Hughes have shared their protocol with allergists from Cleveland to California, offering a replicable model for bringing specialized allergy care closer to families who might otherwise be forced to go without treatment.

“Children who might have grown up planning every snack around reaction risk now carry none of that burden,” Hughes says, thanks to the Dartmouth Health OIT program. “They may never know what it’s like to live with a food allergy. They get to just go about their normal life.”

When Avoidance Isn’t Enough

Shaker, who is also a professor of pediatrics and of medicine at the Geisel School of Medicine at Dartmouth, remembers how different allergy care used to be. “When I was in training, the dogma was that you should not give kids peanuts until they’re four if they were at risk,” he says. But “that’s not the way the body works. That’s not the way any of it works.”

Results from the international LEAP trial (Learning Early About Peanut Allergy) changed that thinking around 2015, revealing that early introduction of peanut products to high-risk infants significantly reduced allergy development. This evidence informed national guidance Shaker co-authored in 2020, recommending peanut and egg introduction around four to six months, with ongoing ingestion thereafter.

But for some families, changes in guidance came too late.

Jackie Leopold D ’98 discovered her son Luke’s peanut allergy in the most frightening way possible. Following her pediatrician’s advice to introduce peanut butter around his first birthday, she gave Luke his first taste while washing dishes. “I just heard him kind of start moaning,” she recalls. “I turned around, and his face was just swelling up before my eyes.”

“Children who might have grown up planning every snack around reaction risk now carry none of that burden.”

—Sarah Hughes, MPAS, PA-C
physician assistant

That first anaphylactic reaction led to Luke’s diagnosis: severe allergies to all nuts and sesame. For years, the Leopold family lived under the standard protocol of strict avoidance and hypervigilance. “It sounds so easy to avoid nuts, but it’s way harder than you think when you consider cross-contamination,” Jackie says. Luke couldn’t go to Chinese restaurants, certain bakeries, even Starbucks. At school, he had to sit at the ‘no nuts’ table at lunchtime. The family’s world revolved around risk management, with Luke’s parents and two siblings also avoiding any foods that might contain nuts and sesame in solidarity and out of an abundance of caution.

“Every time you go out to eat, if your child is allergic to trace amounts like Luke, you’re taking a chance,” Jackie explains. “It’s constantly [making] judgment calls.”

For infants, severe allergic reactions can be particularly difficult to handle. Drew Stull and Dijana Poljak, who live in Colchester, Vermont, and who both work in medicine, discovered this the hard way when their son Benji developed severe allergies at just six months old. “Just imagine, a six-month-old infant, going into anaphylactic shock,” Drew says. “We were absolutely terrified.”



▲ Jackie Leopold D '98 and her son Luke (right) in their kitchen at home, where Luke takes "his daily peanut."

Worse, Benji was too small for a pediatric epinephrine auto-injector (sometimes referred to by one brand name, EpiPen). After their baby son was stippled in hives, Drew and Dijana scrambled to find anyone who had an auto-injector small enough for his size. "We called everywhere," Drew recalls. There were only two auto-injectors small enough for Benji in all of Vermont, and the last one was going to expire in a couple months. "It was an absolute nightmare."

Start Low, Go Slow

When the Leopolds moved to Vermont in 2020, finding treatment for Luke's allergies topped their priority list. Serendipitously, just after the family had begun settling in, they discovered Shaker and Hughes were in the midst of launching a home-based OIT program. Luke became one of the program's first patients in 2021.

Allergy desensitization works best by avoiding fast buildups or static dosing, Shaker explains. So families are instructed to increase the daily dose slowly, following the clinic's "Dartmouth Spoon Sheets," a microdosing protocol designed for routine kitchen practice.

Families start with a thousandth of a peanut (or other allergen), mixing a pinpoint of peanut flour into applesauce. Children take "one bite. And that's it," Shaker says. The next day, two bites, gradually building until "within a year and a half they're eating the whole peanut's worth—300 milligrams."

"It's not a race," he advises. "It's OK if you get there in two years instead of nine months."

Both Luke and Benji's families were surprised at how user-friendly the program was. The bulk of care takes place via telehealth. "We thought we were signing up to drive [to the hospital] all the time, and we're not," says Jackie, Luke's mother. "We were pleasantly surprised."

Benji's parents, Drew and Dijana, also found the program's accessibility remarkable. "Initially, we were terrified of doing this at home. But very quickly, we saw it as a privilege and advantage," Dijana says.

The program is orders of magnitude more affordable, too. Drew tracked his family's total program costs at \$1,708—a fraction of commercial alternatives, which can reach \$10,000 and have mixed results. The lion's share of expenses: \$385 for applesauce and peanut and walnut flour.

So far, the Dartmouth Health program has enrolled more than 300 people in home-based peanut OIT, with fewer than 5% needing epinephrine at any point and 85% of toddlers eventually eating full servings of peanut. While some care remains clinic-based—periodic food challenges are conducted on-site at Dartmouth Health's Dartmouth Hitchcock Medical Center (DHMC) over six-hour sessions to check results—the vast majority of treatment happens at home.

A World of Bagels and Hummus

After five years of daily treatment, Luke now eats at least one peanut and one cashew daily to maintain his desensitization. He passed his sesame food challenge completely, opening "a whole new world of bagels and hummus," his mother says.

The program's real-world test came when Luke accidentally ate a peanut butter ice cream cone at Ben & Jerry's. His mother gave him an oral antihistamine and watched carefully, but no epinephrine was needed. "It already saved his life," Jackie attests. "Besides the fact that he's a normal kid who doesn't have to have special food when he's with friends."

Now, Luke feels free to eat almost anything. He can go to birthday parties and eat cake, he can enjoy Halloween candy, and he doesn't have to read snack food labels carefully anymore. He can eat fast food when out with friends, and he tried sushi for the first time this year.

“It’s like getting another sense,” Luke says. “It’s really eye opening to have a taste I’ve never had before.”

Four-year-old Benji now treats his daily routine so naturally that he reminds his parents about his “special applesauce.” The family that once scoured Vermont for expiring epinephrine auto-injectors now travels freely. “I’ve stopped asking at restaurants. I never thought it would be like that,” Dijana says.

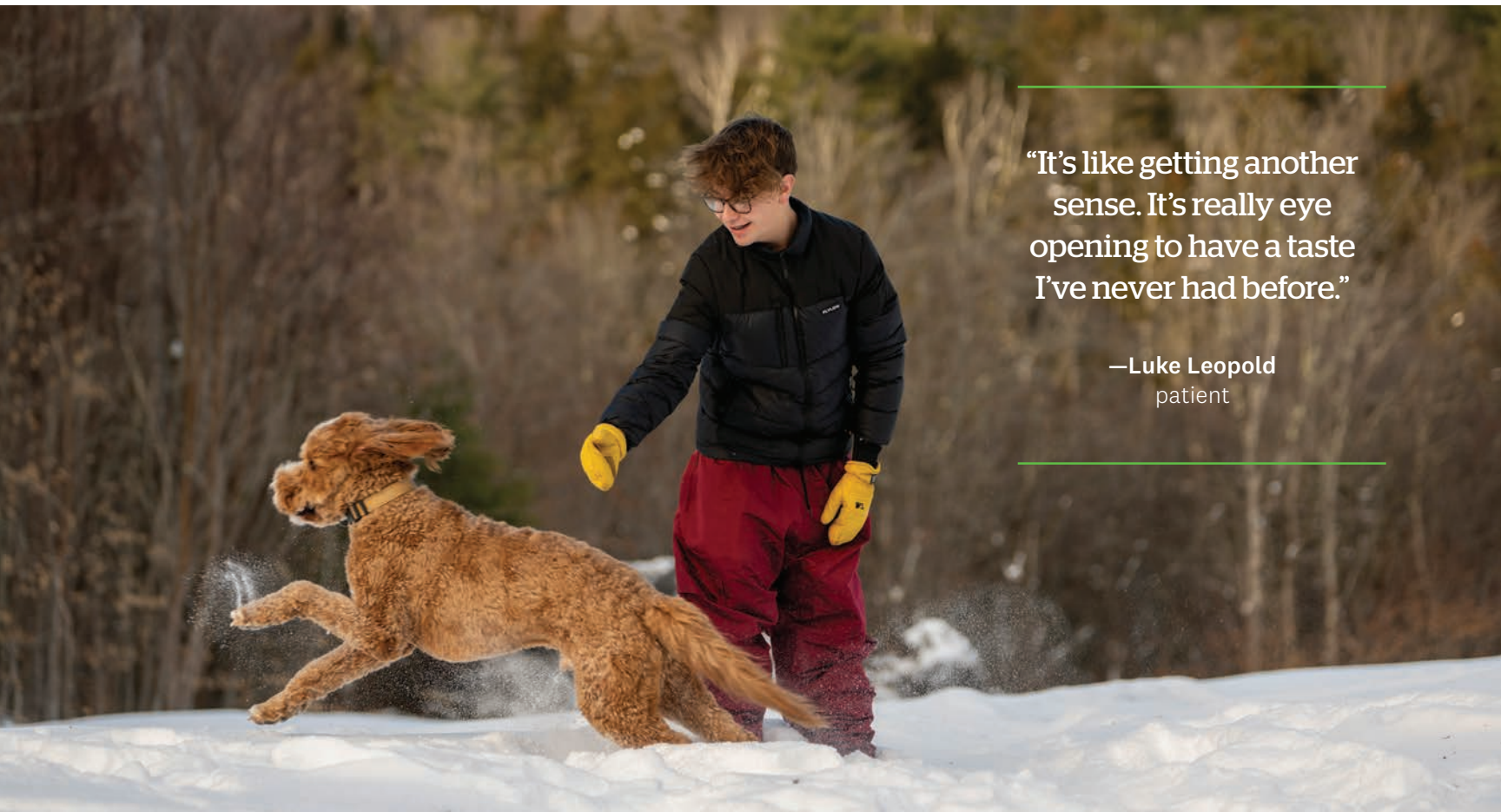
Furthermore, Hughes and Shaker found that their microdosing model’s time savings and treatment efficacy make it particularly valuable for children with multiple food allergies, according to a study they published in 2024. Shaker’s modeling studies on care delivery in northern New England also suggest that at-home treatment is not only more cost-effective, but safer—preventing automobile accidents from traveling long distances for frequent appointments.

The program’s feasibility resonates with healthcare workers like Dijana and Drew, who found striking contrasts with traditional medical interventions.

“This is cheap, you can do it at home, anybody can do it, and it becomes part of your daily routine,” Drew says, emphasizing that the Dartmouth Health allergy program could “become the standard of care” soon. And if it does, some people “will need EpiPens for a couple years maybe, then never again.”

To learn more about innovations in allergy care, contact Elizabeth Dollhopf-Brown at 603-646-5792 or Elizabeth.Brown@hitchcock.org.

To learn more about pediatric care at Dartmouth Health Children’s, contact Polly Antol at 603-646-5316 or Polly.Antol@hitchcock.org.



“It’s like getting another sense. It’s really eye opening to have a taste I’ve never had before.”

—Luke Leopold
patient



A New Way to Illuminate the Brain

Vishva Natarajan MED '28 is building a tool that could reshape neuro-oncology research.

By Ashley Festa

On his first day as a medical student, Vishva Natarajan MED '28 began a project that could revolutionize brain tumor research.

Natarajan knew he didn't just want to study the clinical side of medicine when he arrived at the Geisel School of Medicine at Dartmouth. Armed with a master's degree in bioinformatics, he set his sights on spending days in a laboratory, too. So he immediately reached out to Jennifer Hong, MD, a neurosurgeon at Dartmouth Health's Dartmouth Hitchcock Medical Center and associate professor

at Geisel, to see if she or anyone in her laboratory needed help solving any research challenges.

Indeed they did: Hong told him that studying the brain comes with unique challenges. Human brain tissue specimens are rare, and therefore research laboratories try to use them for multiple investigations. But not all investigations are compatible with one another. Some investigations require highly specialized processes, which are costly and time-consuming and can render a brain tissue sample unusable for more generalized research.

◀ A computer screen displaying scans of brain tissue illuminates Vishva Natarajan MED '28.

Now Natarajan is developing a new tool that could ensure that brain tissue samples can be used again and again, for all kinds of investigations. The tool, which leverages generative artificial intelligence (AI), is the first of its kind.

“Virtual staining tools are incredibly new in medicine,” Hong says. “If the tools are validated and gain clinician buy-in, then it’s possible that they will become widely used, as every single pathology specimen undergoes staining.”

A Stain Challenge

Natarajan’s tool is specifically focused on the process of investigating brain tumor-related epilepsy (BTRE), a debilitating condition that affects 25% to 60% of patients with brain tumors. Hong and others think the degradation of microscopic brain structures called perineuronal nets (PNNs) could be associated with those seizures. But the process of studying PNNs is incompatible with other experiments.

The primary method of analyzing brain tissue for a wide spectrum of diagnostic and research purposes is to stain the specimen with the gold-standard pathology stain: hematoxylin and eosin (H&E). However, studying PNNs requires a different stain. And once a brain tissue sample is stained, it cannot take an additional stain. This has limited the study of BTRE and other serious neurological conditions that require specialized stains—until now.

That’s where Natarajan comes in. He has developed a generative AI tool called VirtualPNN to digitally reveal the staining patterns of PNN-related biomarkers from samples that have been stained with H&E.

“It lets you input a routine stain, and it outputs a specialized stain without actually modifying the input tissue,”



▲ Vishva Natarajan MED '28 (right) and his mentor, Jennifer Hong, MD, neurosurgeon, review samples in the lab.

Natarajan explains, adding that it isn’t intended to replace staining wholesale, just to use less tissue and optimize researchers’ workflow. The plan is for the tool to be open-source and freely available for neuro-oncology researchers worldwide.

“We’re building a model that makes digital visualization of PNNs reproducible and cost-effective without destroying the tissue sample in the process,” Natarajan says

Beyond BTRE

VirtualPNN may be focused on BTRE research for now, but the concept, Natarajan says, might be scalable for other brain tissue research projects that face this same stain challenge.

And his work is getting noticed on the national scale. Natarajan was one of only 11 medical students nationwide to receive a 2025 Jack & Fay Netchin Medical Student Summer Fellowship from the American Brain Tumor Association, a highly competitive fellowship that supports medical students pursuing mentor-guided research in neuro-oncology.

“Tackling big problems in medicine requires imagination, energy, and intelligence,” Hong says. “I love working with medical students like [Natarajan] because they bring their own expertise and new thinking to longstanding problems, leading to solutions I could not have envisioned.”

Natarajan developed the idea for VirtualPNN under the mentorship of both Hong and Saeed Hassanpour, PhD, the founding director of the Center for Precision Health and Artificial Intelligence at Dartmouth and a professor at Geisel.

For Hong, Natarajan’s impact has been immense. As a result of Natarajan’s work, she says, “we have been able to build a tool that other labs can use that will conserve tissues and advance the science of human neurobiology.”

To learn more about the Center for Precision Health and Artificial Intelligence at Dartmouth, contact Mariam Aghayan at 603-646-5152 or Mariam.Aghayan@dartmouth.edu.



Is There an Algorithm for Happiness?

Happiness among young people has plummeted. Can technology be part of the solution?

By Jeremy Martin

As a boy growing up in Britain, David (Danny) Blanchflower, PhD, and his mates would toss sticks at chestnut trees until hard brown chestnuts, nicknamed “conkers,” rained down. They’d drill holes through them, thread them onto string, and whack at each other in “conker battles.”

“It was utterly irrelevant,” recalls Blanchflower, who now studies happiness as the Bruce V. Rauner Professor of Economics at Dartmouth. “The conkers were just an excuse. It was about being together.”

When he describes those childhood memories now, decades later, there’s warmth in his voice, the wistful signature of dignified meaning. Today, however, few British parents let their children go conkering. The game—along with similar random ways kids of the pre-digital age invented to have fun—has all but died out. And simultaneously something intangible has slipped away: Young people are decidedly less happy than they once were.

Since the 1970s, social scientists could rely on a predictable pattern across life stages: Youth were most mirthful, the middle-aged more miserable, and old timers happier yet again. So universal was the pattern—holding across 146 countries, appearing in over 600 published papers—that Blanchflower says, “The U-shaped curve [of happiness] was one of the most important patterns in social science. Until it wasn’t.”

Sometime between 2012 and 2015, young people became among the most morose of the bunch, according to Blanchflower’s research. The trend was global, observed across 167 countries, accelerating in its spread. But what was changing?

"[It] was one of the most important patterns in social science. Until it wasn't."

—David (Danny) Blanchflower, PhD,
Bruce V. Rauner Professor of Economics at Dartmouth

An Outbreak of Unhappiness

Hunting for culprits, Blanchflower and his fellow sleuths noticed the timing of this outbreak of unhappiness lined up precisely with when social media truly went viral—drawing young people away from the real world and each other. Adolescents who once spent more than two hours a day together outside of school were, by the mid-2010s, spending closer to 40 minutes together.

By 2025, teenagers were logging about nine hours daily on screens, nearly half of it on social media, according to the Pew Research Center. At the same time, rates of anxiety, depression, and psychological distress surged. Today, roughly 60% of people ages 18 to 22 meet criteria for at least one mental health condition.

"We're seeing less in-person connectivity, more social isolation, especially since the pandemic," says Michael Heinz, MD, an inpatient psychiatrist at Dartmouth Health's Dartmouth Hitchcock Medical Center and assistant professor of psychiatry at the Geisel School of Medicine at Dartmouth. "I've seen more struggles that are directly related to smartphone use, to the point where it starts to take the place of social relationships and other meaningful activities."

But for young people living among those statistics, social media is just a slice of the story. According to Jaime Graft D '26, a computer science and neuroscience student at Dartmouth, young people today face a maelstrom of pressures from the economic to the existential.

"Everything is extremely expensive. Wages have not kept pace with inflation. The job market is brutal. Most young people doubt they'll ever be able to buy a house. Then there's COVID, which kind of ruined college and high school for a lot of people," Graft says. "There's been a lot of destigmatization of mental health struggles, which is great. But I think that's mainly because a lot of people experience these struggles now."

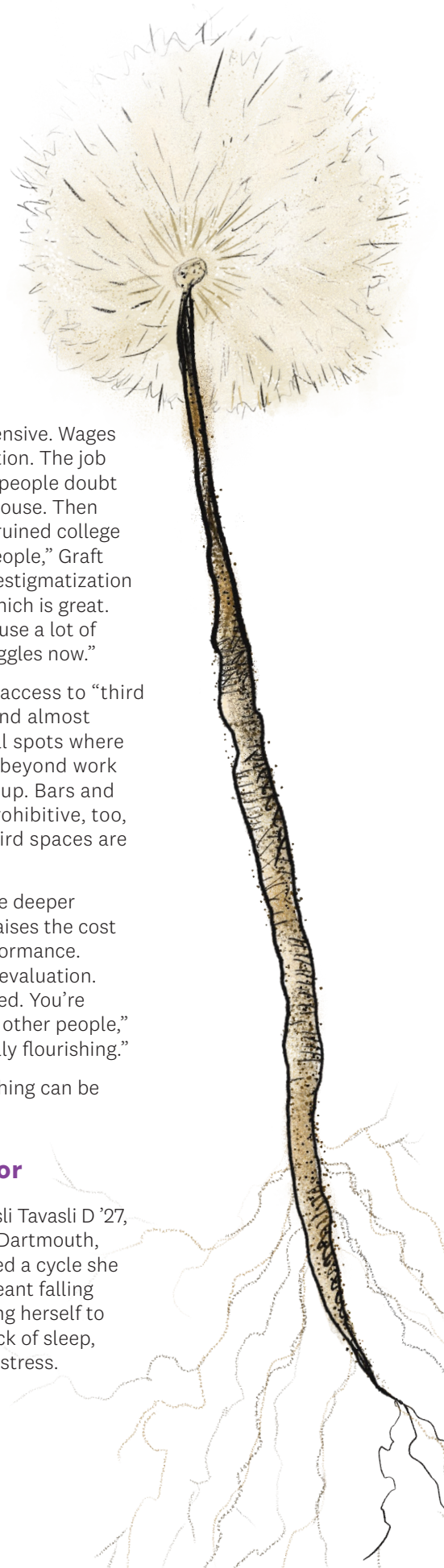
Young people have also lost access to "third spaces," Graft says. Slowly and almost imperceptibly, these informal spots where communities once gathered beyond work and home have all but dried up. Bars and restaurants are often cost prohibitive, too, he notes. As a result, "our third spaces are often online."

Social media aggravates these deeper stresses. Constant visibility raises the cost of failure. Everything is a performance. Selfhood is constantly up for evaluation. "You're always being monitored. You're always comparing yourself to other people," Graft says. "But nobody's really flourishing."

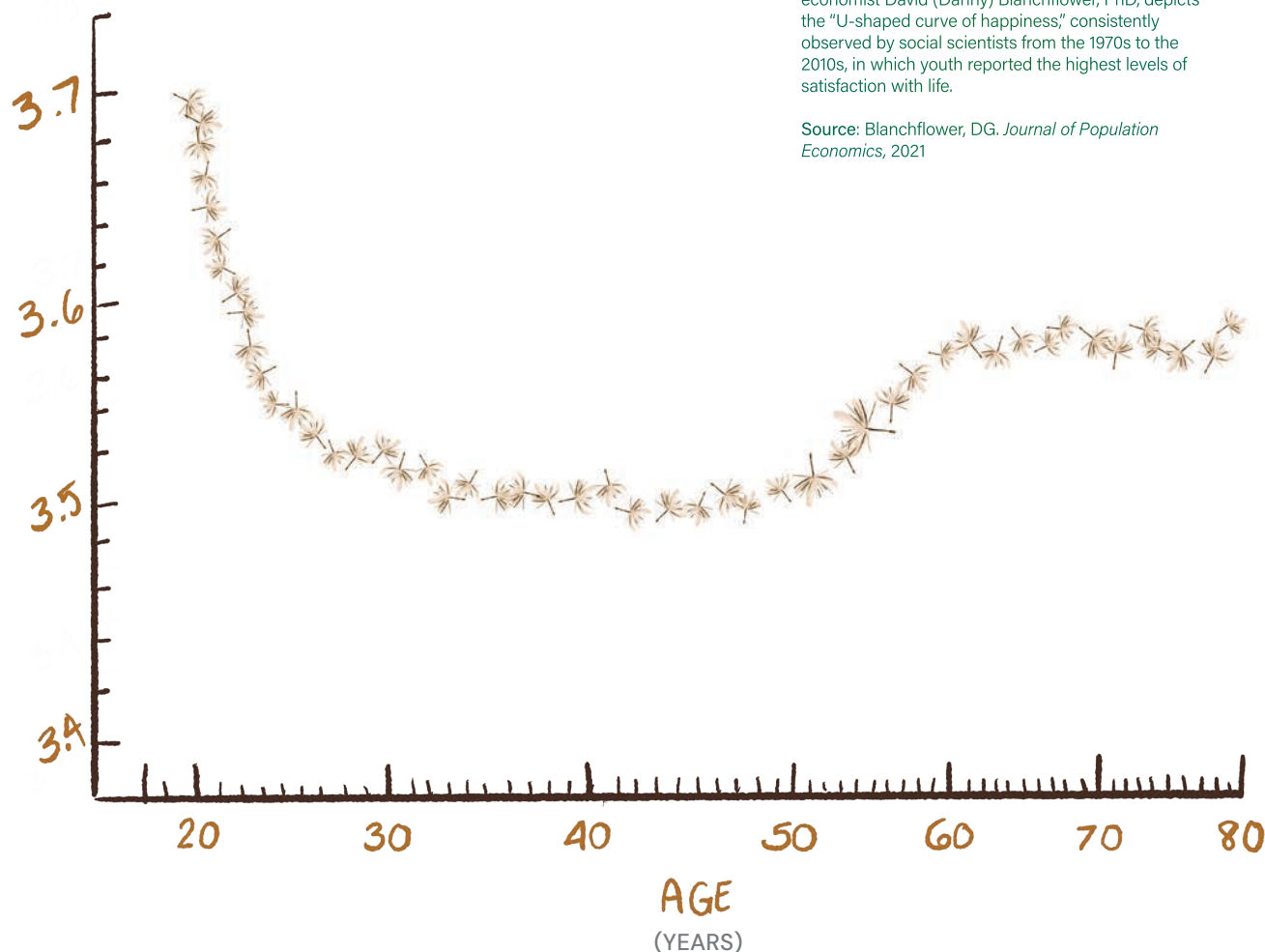
The question is whether anything can be done about it.

An Unlikely Counselor

During her sophomore year, Asli Tavasli D '27, a computer science major at Dartmouth, got a concussion that triggered a cycle she couldn't escape. Recovery meant falling behind in coursework, isolating herself to catch up, getting sick from lack of sleep, then feeling overwhelmed by stress.



LIFE SATISFACTION
(EUROBAROMETER SCALE, 1-4)



▼ This graph, from research conducted by Dartmouth economist David (Danny) Blanchflower, PhD, depicts the “U-shaped curve of happiness,” consistently observed by social scientists from the 1970s to the 2010s, in which youth reported the highest levels of satisfaction with life.

Source: Blanchflower, DG. *Journal of Population Economics*, 2021

Even with good friends and a supportive partner, she needed help—right then and there.

“With mental health services, you might have to wait awhile for an appointment,” she says.

So late one night, overwhelmed and unable to sleep, Tavasli found herself talking to ChatGPT about how she felt.

“I knew from working in tech that we shouldn’t 100% trust AI,” she says. “But I wanted to talk to someone. I wanted to hear from someone. And it actually helped me.”

That gave her pause. If a chatbot that was not designed for mental health support could provide some relief in a moment of crisis, what might be possible with one purpose-built for well-being?

The Blueprint for Well-Being

Such technology would need to be built upon a proven model for flourishing.

In 1998, psychologist Martin Seligman, PhD, then at the University of Pennsylvania, founded positive psychology, a field devoted to understanding not just mental illness, but what allows people to thrive. Wellness, Seligman’s research suggests, is more than the absence of disease. It is the presence of five core parameters: Positive emotion, Engagement, Relationships, Meaning, and Accomplishment—collectively known as “PERMA.” When these elements are strong, studies link them to everything from greater job satisfaction to stronger social bonds.



1 in 5

young adults ages 18–21 are already using AI chatbots for mental health support, with 93% reporting the advice was helpful.

Source: Brown University School of Public Health, Harvard Medical School, and RAND, *JAMA Network Open*, 2025

But “a lot of the things that bring joy and fulfillment take work,” Heinz notes. “They take investment, time, and authentic engagement.”

During Blanchflower’s childhood, time, attention, and social connection made that work easier, and lasting happiness more attainable. For Graft and Tavasli, those same resources face strong headwinds—and are challenged by digital systems designed for fast relief.

“The ease of things that bring you pleasure or solve our problems has eroded our sense of fulfillment,” Tavasli says. Instead of working for happiness by taking a long hike, making plans with friends, or struggling to get the right answer, “we turn to easy shortcuts. Every indulgence is at our fingertips.” But it is the struggle, Tavasli points out, that produces lasting contentment. Skip it, and you lose the real reward.

Seligman calls this state of well-being—the kind built through effort, engagement, and meaningful challenge—“flourishing.” And for young people like Tavasli and Graft, the conditions that support it have become harder to sustain.

Fighting Fire With Flourishing

If immediate gratification is the problem, then a mental health intervention would need to provide the opposite. It would need to strengthen resilience and foster the slower, more deliberate art of flourishing.

That challenge sits at the heart of Evergreen, a first-of-its-kind generative AI platform being built at Dartmouth by students and faculty to provide students with personalized wellness support.

The app aims to guide users through building the best conditions and daily routines for flourishing. It leverages the principles of positive psychology—PERMA—to guide behavior away from addiction and isolation and toward connection and fulfillment.

When a student first opens Evergreen, they select wellness areas to focus on, such as social connection or personal growth. They can ask the AI chatbot for help with specific challenges like social anxiety, time management, or relationships. The chatbot responds in the tone of a trusted peer rather than a clinical therapist.

The app adapts its suggestions to individual needs based on data students choose to share. That might include sleep patterns, academic schedules, physical activity, or location on campus. The algorithm learns what conditions support each student’s wellbeing and delivers brief “nudges” at moments when they’re most likely to help.

“Evergreen might sense you’re feeling lonely,” says Andrew Campbell, PhD, Albert Bradley 1915 Third Century Professor of computer science at Dartmouth and co-lead on the project. “It might nudge you to grab coffee with a particular friend—because it’s learned that works for you.”

Using an app to get students off their apps may seem paradoxical, especially when the average college student already spends nearly seven hours a day on their phone, according to a 2023 study published in the journal *Clinical Psychological Science*.

“For most young people, rejecting smartphones wholesale isn’t realistic,” says Lisa Marsch, PhD, founding director of the Center for Technology



▲ Asli Tavasli D '27, a computer science major at Dartmouth, has helped build Evergreen, a first-of-its-kind generative AI platform to provide students with personalized wellness support, along with faculty and more than 200 other student workers. Tavasli and her peers may be facing a mental health crisis, but they are also designing solutions together.

and Behavioral Health at Dartmouth (CTBH), the Andrew G. Wallace Professor within the Departments of Psychiatry and Biomedical Data Science at Geisel, and co-lead on Evergreen. “They’ve become essential tools for participating in society,” she says. But, “technology is neutral. The question is how people are taught to use these tools.”

Tavasli, who in addition to her studies has served as a software developer on the Evergreen team, adds that “we have given ourselves access to everything apart from mental health.... Now we need to focus on what that uncontrolled and unmediated access has turned us into.”

When the Drug Is Digital

From 2009 to 2019, depression and suicidality among U.S. high school students spiked by 40%, even as use of most substances shrank by 20–40%, according to research by Jacob Borodovsky, PhD, a senior research scientist and epidemiologist at CTBH who studies addiction. This inverse relationship hinted that something other than traditional drug use might have colonized the same neural pathways involved in addiction.

To Borodovsky, that made sense, and the culprit was evident: algorithmically driven platforms like social media. The parallels

Why Do Nudges Work?

Humans rarely act on long-term intentions alone, so when well-timed cues intervene at a decisional moment, they can more effectively influence behavior, prompting us to move our body, reach out to a friend, or pause before scrolling on social media. According to behavioral science and cognitive psychology, these “nudges” can reduce cognitive load and activate habit-forming pathways, making meaningful behaviors easier to repeat until they become second nature.

The digital realm has provided powerful vehicles for delivering these behavioral cues. While devices often foster less authentic connection than in-person interaction, says Michael Heinz, MD, an assistant professor of psychiatry affiliated with the Geisel School of Medicine at Dartmouth and Dartmouth’s Center for Technology and Behavioral Health (CTBH), smartphones’ ubiquity may make them the easiest way to “meet people where they’re at.”

But when nudges become encoded in algorithms, ethical questions can arise: Who decides what behaviors are “good” enough to be nudge-worthy? How strong should nudges be? A core principle of nudging is that it preserves people’s freedom to choose. Yet if a nudge is designed to influence behavior, can it truly preserve that freedom?

between substance use and these platforms run deeper than most people realize. While “not all screen time is created equal,” Borodovsky says, social media platforms operate on neurological principles similar to addictive substances. They both supply intermittent rewards, bursts of validation at unpredictable intervals, that trigger quick dopamine hits.

Over time, this creates behavioral patterns that mirror addiction: compulsive use, withdrawal symptoms, and diminishing returns from everyday pleasures. Young people are particularly susceptible, as their prefrontal cortex—the very region of the brain needed to resist compulsive behavior—does not fully mature until the mid-twenties.

But research by Kyle S. Smith, PhD, associate professor of psychological brain sciences at Dartmouth, suggests dopamine is not really a “pleasure chemical.” More accurately, dopamine helps the brain learn which cues are worth paying attention to and which behaviors are worth repeating.

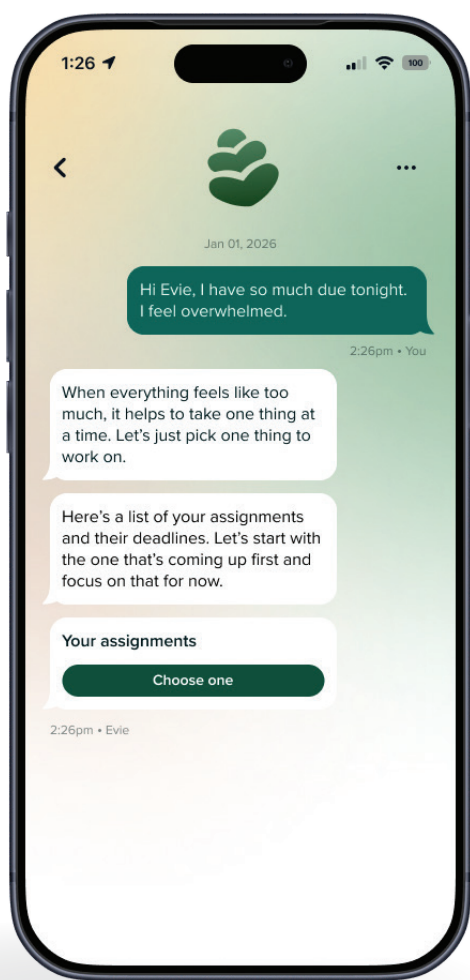
“Dopamine tells your brain to engage and ‘do that again,’” Smith says, which is why, when it comes to addiction, it is “a big part of the problem.”

This learning system did not evolve to keep humans scrolling. It evolved to help humans pursue connection, purpose, and meaning—all core ingredients of flourishing.

This Algorithm Does Not Want Your Attention

The premise behind Evergreen is to redirect that learning system back to its original purpose. And to do that, Evergreen turns the addictive algorithms on their head: While social media algorithms are built to keep people online, Evergreen optimizes to drive them off their phones.

An algorithm, after all, is just a tree of logic that intends to solve a problem or direct decisions.



▲ Evergreen's AI assistant responds to student stress in real time, nudging users toward focus, action, and eventually, disengagement from the screen.

Image courtesy of the Evergreen team

The app's suggestions draw from behavioral science: Evergreen's conversational AI was trained on more than 250 dialogues to incorporate habit formation, motivational interviewing, and behavioral activation. Together, these approaches honor how people actually change. Gentle prompts steer attention toward movement, social connection, and purpose rather than passive engagement—offering small, doable actions that can build momentum when motivation is low. If a user has been sedentary too long, the app might suggest physical activity, which generates positive emotion.

Unlike social media platforms, Evergreen does not sell data, run advertisements, or share information with third parties. Sensing capabilities are designed not for surveillance, but for pattern recognition. Students decide what data, if any, to share. If they opt in to sensing, the system can adapt suggestions based on behavioral patterns—sleep, physical activity, dining hall swipes, location changes. Whereas social media uses behavioral data to keep you engaged with content, Evergreen uses it to disengage you from the screen.

The Offline Community in Your Pocket

What distinguishes Evergreen from most wellness apps isn't just its algorithmic design, but where it comes from. The platform has been developed by Dartmouth students and

faculty, with support from CTBH at Geisel. More than 200 paid Dartmouth students work or have worked flexibly, term by term, on the project.

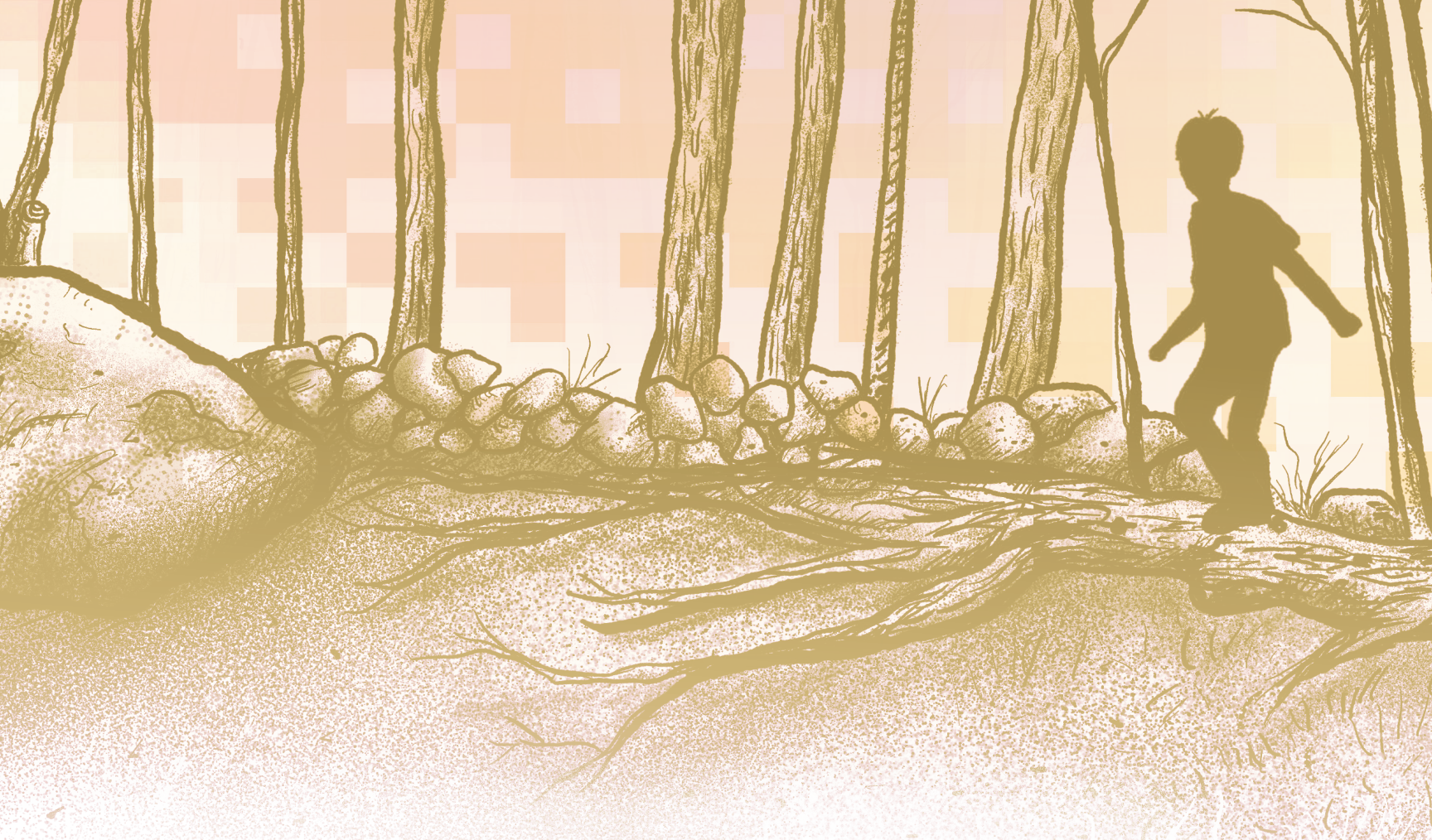
Intentionally built locally, Evergreen knows the names of Dartmouth buildings, the locations of study spaces, and routes between dorms and dining halls. When it suggests meeting someone for coffee, it can suggest the café. By grounding its “nudges” in local context, Evergreen aims to narrow the gap between intention and action.

“Since the people making Evergreen are students,” Tavasli says, “you basically get the collective Dartmouth ‘hive-mind’ experience on your phone. An upperclassman telling you, ‘Hey, when the weather made me depressed, I borrowed a sun lamp from Baker-Berry [Library].’ It’s like another Dartmouth student talking to you.”

Graft also previously worked on Evergreen's mobile development, helping to develop its underlying architecture. One feature he helped build allows students to signal on the app when they're open to meeting others for a meal.

“It's not very normal to just walk up to a stranger in the dining hall and sit down with them,” Graft says. “People don't want to face rejection. Setting that status lets you know who else wants to make new connections.”

It's a small intervention, but a revealing one—a digital tool designed explicitly to lower the friction to analog connection.



A modern counterpart to Blanchflower’s conker games that still forces students to do the work of flourishing. The Evergreen team is careful to articulate that the app is not a therapist, doesn’t diagnose or treat illness, and is not meant to replace any existing Dartmouth resources. But it does include built-in safeguards, directing users to Dartmouth Student Health Service at Dick’s House or the National Suicide Prevention Lifeline if it detects language suggesting crisis or imminent harm.

Importantly, says Iris Cao D ’26, a senior studying economics and philosophy who has worked on Evergreen’s dialogue design, the goal is “to build technology that understands people not just as data points, but as stories in progress.”

Will it Work?

Not all students are convinced. When Dartmouth announced Evergreen in 2025, *The Dartmouth* published several opinion pieces questioning the approach. Some students worried the app might become a substitute for human connection. Others raised concerns about data privacy, even with opt-in sensing, and whether the investment might be better directed toward expanding counseling staff or existing wellness programs.

Evergreen is currently undergoing rigorous testing under institutional review board oversight. The rollout has been intentionally gradual, beginning with a pilot group of roughly 200 students, then expanding to 600, with plans to eventually make the platform available to the full undergraduate population.

“We’re going to have over 100,000 human hours that are part of developing the system. It’s not a light-touch approach,” says Nicholas Jacobson, PhD, technical lead for the Evergreen project, associate professor of biomedical data science and psychiatry at Geisel, and director of the Treatment Development and Evaluation Core at CTBH. “It’s going to be very deeply ingrained in ways that are really trying to make these safe and effective.”

The safety protocols for Evergreen build upon Jacobson’s prior work. In 2024, along with Heinz and others, Jacobson developed Therabot, the first fully generative AI therapy chatbot to undergo a clinical trial, the successful results of which were published in March 2025. That trial created a roadmap for designing and testing these tools in safe, controlled clinical trials, and provided a foundation for the Evergreen project. While Evergreen is not designed to provide therapy, its chatbot is modeled after Therabot’s software.

Evergreen is part of a broader push to improve student



mental wellness at Dartmouth. In 2023, President Sian Leah Beilock, PhD, launched a five-year “Commitment to Care” strategic plan that expanded clinical staffing, increased access to free telehealth counseling, and reframed mental health as a campus-wide responsibility rather than an individual failing—and it’s already working. From 2021 to 2024, Dartmouth saw a decline in students at risk for moderate to severe depression from 33% to 24%, and a decrease in students at risk for moderate to severe anxiety from 27% in 2021 to 23% in 2024. Furthermore, 93% of undergraduates surveyed in 2024 agreed that they knew where to get professional help for their mental health, up 10 percentage points since 2021.

Evergreen extends this work upstream. Rather than waiting for students to reach crisis, it aims to support the everyday habits that make crises less likely.

For now, the Evergreen app is a hypothesis in motion, a carefully designed experiment rather than a proven solution. Ultimately, research will reveal whether the platform fosters flourishing and changes behavior. If it proves effective, Marsch says, the long-term goal is to adapt Evergreen for use at other institutions and eventually beyond higher education.

Marsch is under no illusions that Evergreen can fix all that ails young people’s ability to flourish today. “A lot of young people are growing up in a world

that feels unstable,” she says. “Climate change, geopolitical conflict, economic precarity—social media amplifies those anxieties, but it doesn’t create them out of nothing.”

Evergreen “is not a panacea,” Marsch adds. “Technology alone can’t solve structural problems like economic inequality or climate anxiety. But it can help give people skills to navigate the world they’re in.”

Graft, too, resists the idea that an app can repair a society in which housing feels out of reach, work feels insecure, and the future feels uncertain. The value in technology, for him, resides in helping the hearts and minds of young people to believe that, even in the face of challenges, flourishing is still possible.

Blanchflower’s childhood games were never really about chestnuts. The conker battles were simply a pathway to connection and joy. A return to that past may be impossible. But the modern blueprint for well-being can still be found—and built—together.

Additional reporting by Eva Botkin-Kowacki.

To learn more about the Center for Technology and Behavioral Health at Dartmouth, contact Bethany Solomon at 603-646-5134 or BethanySolomon@dartmouth.edu.



The New Landscape of Rural Births

Obstetric wards in the North Country
are closing. Now what?

By Mara Johnson-Groh

When Erin Samel was pregnant for the second time, she knew she didn't want to give birth via caesarean again, given the risks of having the invasive procedure twice. But that meant her best option for delivery was Dartmouth Health's Dartmouth Hitchcock Medical Center (DHMC) in Lebanon, New Hampshire, a two-hour drive away from her home in Gorham, New Hampshire.

"For some of my prenatal appointments that were just five-minute visits, I had to travel four hours round trip," says Samel, who is now a mother of four. "So that was me taking an entire day off work for a few minutes of care—something not everyone can afford to do."

The challenges Samel faced in her pregnancy are not unique in New Hampshire. Over the past 25 years, nearly half of labor and delivery units across the state have closed because of

- ◀ The North Country Maternity Network unites disparate programs across northern New Hampshire to improve maternal care infrastructure.

financial issues, staffing shortages, and a decline in births. These closures are especially acute in rural areas, such as the most northern reaches of New Hampshire. As a result, receiving care close to home in the North Country is increasingly difficult.

“Being healthy
in pregnancy and
through postpartum
is more than just about
physical health.”

—**Rebecca Hill-Larsen, CHW**
Doula CONNECT coordinator

With populations across rural areas in decline, these challenges aren’t likely to ease, according to a 2022 policy brief published by Dartmouth researchers. So in 2023 a group at DHMC applied for a federal grant to improve access to pre- and perinatal care in New Hampshire. Now halfway into their four-year Rural Maternity and Obstetrics Management Strategies (RMOMS) grant, DHMC has made huge strides in increasing care in the region through the formation of the North Country Maternity Network (NCMN), which unites disparate programs across the region to transcend the limitations of what individual service providers can offer due to its unique structure and funding.

Already, NCMN has improved maternal care infrastructure by partnering with local hospitals, creating a doula/ community health worker program, providing training for obstetric nurses, and more.

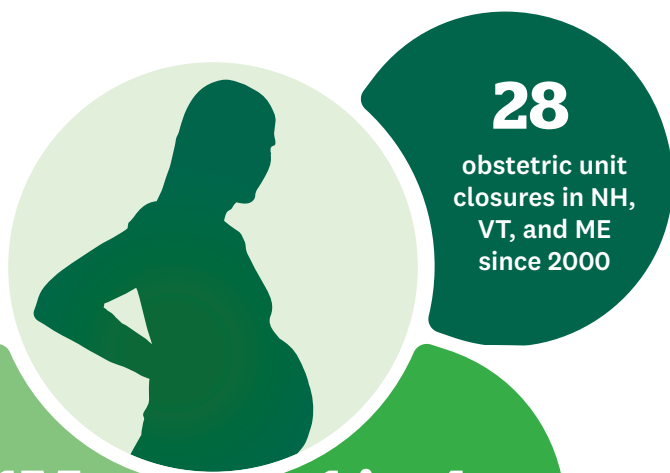
“The North Country is a rural area with a lot of economic challenges,” says Daisy Goodman, DNP, MPH, a grantee co-applicant and a certified nurse-midwife at DHMC. “With the help of the RMOMS grant, we have already made huge steps in improving connections to and continuity of care here and are already beginning to see improved outcomes.”

High Costs

The challenges local hospitals and providers face stem in part from underfunding. Under Medicaid, births are reimbursed in a lump sum. This means a hospital receives the same amount for a birth regardless of how many visits or how much extra care a patient might need.

In North Country hospitals with obstetric units, nearly 1 in 4 births are covered by Medicaid, according to the 2022 policy brief. As a result, birthing units can bankrupt hospitals. The hospitals that closed their units had an even higher percentage of births under Medicaid: 39%. One North Country hospital lost a million dollars in one year on maternity care services, Goodman says. Though no providers want to close labor and delivery wards, sometimes they have no choice.

NCMN has partnered with several local providers to help find ways to offset these high costs of care.



28

obstetric unit
closures in NH,
VT, and ME
since 2000

\$1M

Loss suffered by one
NH hospital in one
year on maternity
care services

1 in 4

births in the
North Country covered
by Medicaid

breastfeeding
and screening for
postpartum depression.

“There’s a lot of research
and evidence that says
having a doula improves
outcomes like the baby’s birth
weight and mother’s mental health,
and it lowers the chance of preterm
labor and needing a cesarean section,”
says Rebecca Hill-Larsen, CHW, Doula
CONNECT coordinator.

In its first year, the fully grant-funded
program has already helped 36 clients,
including attending a dozen births.

The doulas hired by the program
are also cross trained as community
health workers, which provides
them with the skills to tackle related
problems such as insurance and food
security. The doulas often assist with
problems unique to rural areas, such
as providing advice on transportation.

“Being healthy in pregnancy and
through postpartum is more than just
about physical health,” Hill-Larsen
says. “Our doulas help support all
aspects of health, including things
like, does a patient have a way to
get to appointments, do they have
enough food?”

Unlike some programs for maternity
services, the doulas’ care follows the
pregnant individual—not the baby.
So in traumatic cases where the baby
dies or is taken away by the Division
for Children, Youth and Families,
doulas can still support their client.

“An Endless Maze”

A resource such as this would
have been game-changing for
Lisa Coulombe following her first
pregnancy. When she became
unexpectedly pregnant in 2016,
Coulombe was addicted to opioids
and struggled to receive proper care.
The closest methadone recovery
clinic was too far to access, and
the drugs a doctor prescribed to
treat opioid use disorder made
both Coulombe and her baby girl
sick. When her baby was born, she
was taken away by the Division for
Children, Youth and Families.

“I was so scared. All I wanted was to
be able to care for my baby,” says
Coulombe, who is now a community
health worker herself, and who has
been drug-free since 2021. Seeking
to regain custody of her daughter,
Coulombe recently discovered she
has been adopted. “The support I
desperately needed was unavailable
to me then. I diligently sought out
resources, and it was like going
through an endless maze.”

Along with the doula program, other
services are available to people in
rural New Hampshire, such as the
Ask Petra warm line, which provides
one-on-one help for anyone with
substance use disorders. NCMN
also follows a model for universal
screening of substance use conditions,
and a tiered pathway for intervention.

“We have clients who are struggling
with substance use disorder, and a

The RMOMS grant is also helping by
enabling NCMN to offer obstetric-
focused emergency readiness training
for local ambulance crews who may
need to assist births in regions far from
hospitals with labor and delivery wards.

Other programs offer more targeted
care to those giving birth. NCMN has
been working to facilitate telehealth
visits to reduce transportation burdens
on rural patients, and in 2025, a new
program to provide better access
to doulas—trained, nonmedical
professionals who provide guidance
through childbirth—was launched by
one of NCMN’s partners, North Country
Health Consortium (NCHC).

Doula-ing it All

Traditional doulas sometimes only
attend the birth itself. By contrast,
doulas with NCHC’s Doula CONNECT
program provide free support to
anyone who is pregnant in the North
Country before, during, and up to
one year after the birth. This support
ranges from facilitating conversations
with doctors to supporting



▲ The Doula CONNECT program provides free support to anyone who is pregnant in the North Country before, during, and up to one year after birth.

relationship with a doula has really helped them feel supported and be better able to advocate for themselves as they navigate pregnancy,” Hill-Larsen says.

With the work of NCMN, things are looking up for maternity care in the North Country. As Goodman reflects on the accomplishments of NCMN so far, she’s most proud of the work of bringing together service providers across the North Country.

“We’re really excited for what this future of working together can hold in the coming years,” she says. “This type of collaboration is especially critical given the increasing challenges faced by rural maternity care providers and rural healthcare in general.”

To learn more about maternal care at Dartmouth Health, contact Polly Antol at 603-646-5316 or Polly.Antol@hitchcock.org.



▲ In 2021, music teacher Lisa Bianconi was given six months to live when standard treatments for stage four diffuse large B-cell lymphoma failed.



Curing Cancer With Living Drugs

Dartmouth Cancer Center's new center for cell therapy will offer life-saving treatments and drive promising clinical trials, building on a legacy of leading immunotherapy breakthroughs.

By Mara Johnson-Groh

In the middle of winter 2021, with COVID-19 stresses running high, music teacher Lisa Bianconi started noticing stomach pains. At first, she suspected a stomach ulcer. But she kept getting sick.

By the spring, as she shopped for wedding dresses with her daughter, Bianconi knew something was wrong. Tests revealed a mass the size of a peach hidden in her abdomen. It was not an ulcer, but stage four diffuse large B-cell lymphoma, a type of aggressive non-Hodgkin lymphoma.

Bianconi immediately started a standard regimen of treatment, first chemotherapy and then radiation, at Dartmouth Cancer Center. She stayed upbeat during the months-long process, getting out to ski in the afternoons following treatment sessions, and seeing both her daughter and son get married.

Despite her optimism, the standard treatments failed. She was given six months to live.

But Bianconi was offered one final option: a relatively new immunotherapy treatment called chimeric antigen receptor (CAR) T-cell therapy.

“At that point, CAR T-cell therapy was considered the last resort,” says Bianconi, who was the 13th patient at Dartmouth Cancer Center to receive CAR T-cell therapy. “When you know this is your last chance, you begin to prepare for war. You are fighting for your life.”

While many standard treatments, such as chemotherapy and radiation, blast cancer cells with toxic chemicals to kill them, CAR T-cell therapy takes a different approach. As a type of immunotherapy, it coaxes a patient's own immune system into fighting cancer.

A newcomer to the field of cancer treatments, CAR T-cell therapy is just beginning to prove its potential, in part thanks to Dartmouth's own trailblazing researchers.

“Cell therapy is transforming how we treat cancer. These drugs have long-lasting benefits and let people go back to being people and not just cancer patients,” says Konstantin Dragnev, MD, interim director of Dartmouth Cancer Center. “At Dartmouth Cancer Center, we are building upon a history of discovery and innovation to lead that charge.”

Dartmouth discoveries have been laying the groundwork for immunotherapy since the 1970s, and today new investments in Dartmouth Cancer Center’s research and clinical infrastructure are cementing that legacy, as the Cancer Center launches a center for cell therapy to bridge critical gaps between cutting-edge research and life-saving clinical care. With an influx of new initiatives, Dartmouth researchers are making incredible progress to develop CAR T-cell therapies and other cell therapies, for curing not only cancer but a range of other diseases as well.

Rebooting the Body

Cell therapies—a category of immunotherapies—work by supplementing an immune system’s own cells. Every day, cells in our bodies mutate into potentially cancerous cells. Normally, the body’s immune system quickly identifies and destroys these irregular cells. But in some cases, the cancer cells can evade the immune system. Those irregular cells multiply and eventually grow to a level that causes noticeable symptoms, as with Bianconi’s stomachaches.

With CAR T-cell therapy, doctors harvest a patient’s T cells—white blood cells that are the immune system’s frontline soldiers, responsible for destroying irregular cells—and modify them with a synthetic receptor, known as a chimeric antigen receptor, or CAR. When the cells are placed back in the

body, the new receptor allows the cells to recognize, attack, and destroy cancer cells they couldn’t previously detect.

A great benefit of CAR T-cell therapy is that it effectively creates a living drug within the patient. “With chemotherapy, you have to kill every last cancer cell, otherwise you don’t get long-term survival because those cells will grow back,” says Marc Ernstoff, MD, director of experimental cell therapy at Dartmouth Health. But “the immune system has memory, and has the ability to keep an eye on things over time.”

T cells, for example, survive for a long time in the body and can continue to recognize and attack irregular cells that develop long after the initial cancerous cells are dealt with. This means it only needs to be administered once to remain operational in the patient over a long time, possibly even permanently curing the patient of that type of cancer.

“It’s just something that we never imagined possible,” says Mary Jo Turk, PhD, O. Ross McIntyre Endowed Professor and co-director of the Immunology and Cancer Immunotherapy Program at Dartmouth Cancer Center, whose research laboratory focuses on generating durable memory T-cell responses to cancer.

The idea for cancer immunotherapy has been around for over a century. In fact, the concept of harnessing the body’s immune system to treat cancer was first tested when William B. Coley injected cancer patients with bacteria at a New York hospital in the late 1800s. Though Coley’s tests had promising results, his methods didn’t catch on. It would take decades for immunotherapy to be widely accepted as a cancer treatment.

Dartmouth has always been at the forefront of cancer immunotherapy. When Dartmouth Cancer Center was founded in 1972, immunotherapy was



▲ “Making a living drug isn’t easy—everybody’s cells are different,” says Charles Sentman, PhD, a professor of microbiology and immunology, and director of the Center for Synthetic Immunity. Sentman’s research helped lay the groundwork for several first-generation CAR T-cell therapies.

one of its initial programs. Shortly thereafter, in 1977, one of the main proteins that causes T cells to grow and fight cancer, interleukin-2, was discovered at Dartmouth Medical School by Kendall A. Smith, MD, and then-PhD student Steven Gillis.

A decade later, in 1987, Dartmouth Medical School immunologists Michael Fanger, PhD, Paul Guyre, PhD, and Edward Ball, MD, founded Medarex, a biopharmaceutical company that would develop antibody drugs for patients. Medarex was the first to bring to patients a drug that used antibodies to block an inhibitor of T-cell function, freeing up T cells to kill cancer cells.

The potential of immunotherapies to treat cancer really started to grow in the early 2000s as the next generation of Dartmouth researchers took to the labs. It was around that time that Charles Sentman, PhD, a professor of microbiology and immunology at the Geisel School of Medicine at Dartmouth and director of the Center for Synthetic Immunity,

started studying CAR T-cell therapy at Dartmouth. Back then, he says, the number of researchers worldwide investigating CAR T-cell therapy could fit in a small conference room. Researching a kind of immune cell called natural killer cells, Sentman helped lay the groundwork for several first-generation CAR T-cell therapies. This work helped propel Dartmouth as one of the early leaders in cell therapy.

The next few years saw a slew of successes with CAR T-cell therapy and other immunotherapy treatments. The work that started at Medarex led to immunotherapy drugs called ipilimumab and nivolumab, which showed impressive clinical efficacy in fighting melanoma and were approved by the FDA in 2011 and 2014. In 2013, *Science* magazine called cancer immunotherapy the “Breakthrough of the Year,” and in 2018 the Nobel Prize in Physiology or Medicine was awarded to a Medarex collaborator for advances in treating cancer with T-cell-based immunotherapies.

Today, that small room of researchers has ballooned to hundreds, including dozens of pharmaceutical companies. In 2020, Dartmouth began providing the first FDA-approved CAR T-cell therapy treatments to its patients, and in 2025 it offered a new experimental CAR T-cell treatment in clinical trials. Today, several research teams at Dartmouth are developing half a dozen different types of cell therapy drugs in pre-clinical trials.

The Missing Piece

Although its history is filled with success in cell therapy, Dartmouth Cancer Center has been missing one key capability ever since the first experiments were run in the 2000s: the ability to manufacture novel experimental therapy products to be used in clinical trials for patients.

Nationwide, there are only a handful of specialized facilities certified to do this. This means that Dartmouth discoveries have long faced challenges overcoming what those working on drug development call a “valley of death,” says Ernstoff. New drugs can hold lots of promise in the laboratory, he explains, but translating them into a clinical setting poses new challenges that require special infrastructure, techniques, and skills: in this case, producing cells that can actually go into patients in clinical trials.

“At Dartmouth, we are poised on one side with good laboratory science, and we’re poised on the other side with outstanding clinicians that know how to do clinical research, but we need to build a bridge between the two,” Ernstoff says.

With a foundational grant and the support of ongoing fundraising efforts, this will soon come to fruition, as Dartmouth Cancer Center launches its new center for cell therapy, named

IMPACT: Integrated Multidisciplinary Program for Advanced Cell and Gene Therapies. With Ernstoff at the helm, the philanthropy-powered center will give patients access to cutting-edge experimental cell therapies as soon as they’re available. Housed in new dedicated spaces slated to open this year at Dartmouth Health’s Dartmouth Hitchcock Medical Center, the new center will be able to manufacture Dartmouth’s own CAR T cells, as well as similar treatments like nanoparticle and small-molecule drugs and protein therapeutics. This, Ernstoff says, will “allow us to be a member of a relatively elite group of centers that are able to translate their science quickly into the clinic.”

Having a dedicated facility will give Dartmouth researchers the ability to conduct clinical trials entirely in-house, which will give Dartmouth Health patients more options as soon as they’re available and enable Dartmouth researchers to more quickly test the next generation of cell therapies.



▲ Mickey Patel, PhD, a senior research scientist, works in the Sentman laboratory on a project to develop a CAR T-cell therapy for Alzheimer's disease.

“It’s like something
from a sci-fi movie.
It’s a miracle.
And it saved
my life.”

—**Lisa Bianconi**
cancer survivor



“Making a living drug isn’t easy—everybody’s cells are different and there are logistical challenges with having to ship off cells to a manufacturing facility,” Sentman says. “If we can do all that here now, that’ll be a huge benefit for our cancer patients.”

Life After Cancer

For Bianconi, who participated in an industry-conducted clinical trial, her T cells had to be shipped to a manufacturing facility in California before she could begin treatment at Dartmouth Cancer Center. Two months later, the modified cells were put back in Bianconi’s body on August 29, 2022. One day went by, then two, with no side effects. But on the third day, Lisa felt like she had been hit by a truck. The drug had started to work.

“I’m not going to sugarcoat it,” Bianconi says. “It was hard.”

CAR T-cell therapy helps patients avoid the life-altering side effects of traditional treatments like fatigue, hair loss, nausea, and “chemo brain.” However, CAR T-cell therapy has its own side effects, such as flu-like symptoms and a weakened immune system. Infection due to a weakened immune system is one of the greatest risks with CAR T-cell therapy, and so patients are closely monitored in the hospital for three weeks following treatment, when they are most at risk.

For Bianconi, things had improved by the second week. Shortly after, she transitioned to outpatient care and then was able to continue recovering at home. By January 2023, two years after her first stomach pains, she was back working full-time at her job as director of music at Kurn Hattin Homes for Children and has been relapse-free ever since. She recently celebrated her 40th year as a teacher, for which she credits CAR T-cell therapy.

“Who would ever think that doctors could send away your cells, modify them, and put them back in your body to cure cancer? It’s like something from a sci-fi movie,” Bianconi says. “It’s a miracle. And it saved my life.”

For More Than Cancer

While still in their infancy, cell therapies are showing great success in treating a range of cancers. There are many CAR T-cell therapies that are FDA-approved and working well, and there are hundreds of ongoing clinical trials around the world for new treatments for everything from lung cancer to blood cancer.

At Dartmouth, researchers have several promising and patented treatments in the pipeline for which they’d like to run clinical trials. These include CAR T-cell therapies for multiple types of cancers and solid tumors, which represent the bulk of cancers but have historically not responded to CAR T-cell therapies.

“We’re really excited about these treatments,” Turk says. “They all have very promising pre-clinical results in animal testing and growing amounts of data on their efficacy on human cancer cells as well.”

But cell therapies aren’t just for cancer—some trials are showing promise against life-threatening autoimmune diseases and immunodeficiencies, such as lupus, Crohn’s disease, and HIV. Sentman’s lab is now working on CAR T-cell therapy applications to neurological diseases like Alzheimer’s, Parkinson’s, and ALS.

“Cell and gene therapy is a vital tool for the future of cancer treatment,” Sentman says. “But, going forward, it’s also going to be a way of treating complex diseases from autoimmunity to neurological.”

With its ongoing investments in research and medical spaces, Dartmouth is poised to trailblaze the future of cancer treatments that will save countless lives like Bianconi’s.

“Without the CAR T-cell treatment, the best medical care possible at Dartmouth Cancer Center, family, friends, faith, and a positive attitude, I would have never survived,” Bianconi says. “I often think about how fortunate I am, and every day I find meaning in life. Being alive is a true gift.”

Additional reporting by Eva Botkin-Kowacki.

To learn more about cell therapy, contact Jaclynn Rodriguez at 603-646-5287 or Jaclynn.Rodriguez@hitchcock.org.

Welcoming **Roy S. Herbst**

Internationally renowned cancer research pioneer Roy S. Herbst, MD, PhD, will begin as Dartmouth Cancer Center's director on July 13.



Dartmouth Cancer Center has appointed Roy S. Herbst, MD, PhD, as its sixth director. Herbst will lead integrated efforts to strengthen cancer research, education, and collaboration across Dartmouth and Dartmouth Health, expand access to advanced treatments and clinical trials, and continue to elevate cancer care throughout New England and beyond.

Herbst is internationally recognized as a pioneer in the development of targeted and immune-based therapies for the treatment of lung cancer. He joins the Cancer Center from Yale University, where he has served as deputy director and chief of medical oncology and hematology at Yale Cancer Center and Smilow Cancer Hospital in New Haven, Connecticut.

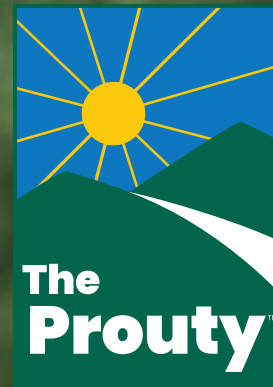
Herbst has helped shape modern cancer research, leading a shift to increasingly personalize therapeutic approaches and to expand the use of targeted therapies during the earliest stages of disease. His trailblazing work in the field of lung cancer has contributed to the approval of multiple therapies that are now the standard of care, and he continues to advance research focused on earlier detection and treatment.

In addition to his research and clinical leadership, Herbst is a dedicated educator, mentor, and advocate. He has been a major proponent of efforts to promote tobacco control and regulation (including e-cigarettes), authoring multiple policy statements and leading frequent Capitol Hill briefings. He is the recipient of the International Association for the Study of Lung Cancer (IASLC) Paul Bunn Scientific Award for his contributions to lung cancer care and research, and the American Association for Cancer Research Distinguished Public Service Award for Exceptional Leadership in Cancer Science Policy.

"I am honored to lead Dartmouth Cancer Center at this defining moment and to join a nationally recognized team at the forefront of cancer care, research, and education," Herbst says. "I am excited to usher in the future of cancer care alongside Dartmouth Cancer Center's dedicated and passionate community of supporters at The Prouty in July."

To learn more about Roy S. Herbst, go to dartgo.org/dccd/director or contact Jaclynn Rodriguez at 603-646-5287 or Jaclynn.Rodriguez@hitchcock.org.

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MEDICINE



How Modern Surgery has Outgrown the Operating Room

As rural America ages, Dartmouth Health member hospitals like Cheshire Medical Center are deepening their investments in surgical care.

By Mara Johnson-Groh

It looks like something out of a movie: Four long, articulated arms hang over a patient on an operating table. But behind the robot is a real-life surgeon performing a life-saving operation.

This scene is the future of surgery. It's also one that can be found at Cheshire Medical Center, a Dartmouth Health member located in Keene, New Hampshire. Cheshire now has one of these state-of-the-art medical robots, called the Da Vinci Xi, as well as a Velys orthopedic robot, which are providing patients with better surgical outcomes than ever before in the hospital's 53-year history.

The presence of these robots makes Cheshire an outlier among rural hospitals, particularly at a time when surgical care—much less cutting-edge, robotics-assisted surgery—is increasingly hard to access across rural America.

Today, there are 18% fewer surgeons in the U.S. than there were at the turn of the century. In rural areas, the number of practicing surgeons is down by nearly a third. Furthermore, while a fifth of Americans live in rural areas, only a tenth of all U.S. surgeons work there. And those surgeons aren't young—more than half of surgeons in rural America are over the age of 50, with many nearing retirement. This shortage combined



with aging infrastructure and growing elderly populations, who have the greatest surgical needs, means some rural hospitals are struggling to serve their populaces.

Against these odds, Dartmouth Health member hospitals, which serve 1.9 million people across northern New England, are working to improve their surgery departments with strategic investments in new technologies, like surgical robots, and infrastructure, as well as developing improved techniques and approaches to surgery.

“These robots and other surgery improvements are giving our patients the best possible care for some pretty complex problems, from general surgeries to gynecological procedures,” says Ashley Copeland, MS, RN, CNL, CNOR, Cheshire director of surgical services. “We’re proud to

offer these services in a time when many rural hospitals are struggling.”

“There’s a real top-notch surgical team here,” says Cheshire patient and local Keene business owner Mary Jane Doody. Doody has undergone multiple surgeries at Cheshire in the past four years for breast cancer and rotator cuff injuries. “Surgeons are really important and good ones can be hard to come by, so we’re lucky here.”

Growing Demand

The American population today is older than ever. Maine and New Hampshire are some of the oldest states, with median ages of 44.8 and 43.6 years, respectively. This is leading to a rapid rise in joint replacement surgeries for northern New Englanders. In the next decade,

according to an analysis of Census Bureau data, total knee and hip replacements are predicted to double.

Cheshire’s investments in robotics, which are increasingly used in hip and knee surgeries, will help them keep up with the demand for these operations. But better technology isn’t the only solution. Cheshire staff have noticed that giving patients physiotherapy right after joint surgery and sending them home that same day improved recovery outcomes, as opposed to keeping the patient overnight. This new approach not only allows Cheshire to see more patients, but also gives those patients improved recovery timelines.

“It’s more comfortable recovering at home than in a hospital bed,” Doody says.

Cheshire patient Elaine Dall also experienced a quick turnaround after she was diagnosed with breast cancer in 2016. Within two weeks of her diagnosis, she underwent a lumpectomy at Cheshire to remove the cancerous tumor in her breast and was back home the next day.

“The truth is, baby boomers like me are putting a burden on the medical system because there’s so many of us,” Dall says. “Yet at Cheshire Medical Center I always feel that I’m getting excellent care.”

Small Incisions, Large Tools

Cheshire launched a public fundraising campaign in November 2025 to further improve and modernize their spaces. The hospital currently has five operating rooms. Cheshire plans to add a new operating space and double the size of their existing operating rooms, which are much smaller than modern ones. The extra square footage is needed to make room for the new robotic technologies, which take up a lot of space.

Unlike times past, when surgeons had to make long incisions to access areas of the body that need treatment, many surgeries today are done with the help of robots that can access the body through tiny openings. The robots at Cheshire represent the next generation in laparoscopic or minimally invasive surgeries. While early laparoscopic robots have tools with tiny claws that can grab and open in one direction, the newer robots have more three-dimensional mobility and integrated sensors that can help surgeons reduce tissue damage.

The downside to these technologies is that they consist of multiple units that can take up a lot of valuable space in an operating room. When Cheshire's Da Vinci Xi robot was installed in 2024, it barely fit in the room. But already the squeeze is worth it—there were nearly 5,300 total surgeries at the hospital in 2025, up from 3,400 total in 2023, in part thanks to the robots' help.

“Right now, we’re in a transition period where we’re expanding our surgical department and incorporating a lot of new technology,” Copeland says. “It’s been our goal here at Cheshire to widen our surgical specialties and try to provide as much surgical care here as we can.”

Investing in Surgeries and Beyond

Investments in rural surgeries can bring an economic windfall as well as a health boon. An estimate from the American College of Surgeons found that a busy rural surgeon can bring in 40% of a hospital's revenue, produce \$4.4 million in payroll, and create an average of 26 jobs. But transformational improvements don't come easy. Cheshire's expansion plans—the subject of their capital campaign that launched in November 2025—are estimated to cost more than \$60 million. The campaign is already making huge strides toward that goal, thanks in large part to the largest single gift in the history of the Dartmouth Health system, a \$25 million donation from an anonymous local Keene family.

Other Dartmouth Health member hospitals are also raising money to improve their technologies, such as in New London, an hour north of Keene. There, community fundraising and a matching gift from The Burkehaven



▲ From left to right: John Dresser, RN, CNOR, Christina Hamm, BSN, RN, Emily Twitchell, RN, Ashley Copeland, MS, RN, CNL, CNOR, and Paul Sanders, MD, Chair of General Surgery, celebrate the arrival of the Da Vinci Xi robot at Cheshire Medical Center in 2024.

Photo courtesy of Cheshire Medical Center

Family Foundation in 2024 allowed New London Hospital to acquire two types of biopsy devices to improve breast cancer screening and diagnosis, and provide cutting-edge surgical intervention closer to home. In 2025, Southwestern Vermont Medical Center added a Da Vinci 5 surgical robot to support minimally invasive general surgeries, like gallbladder removal, hernia and colon surgery, and more. It is the first surgical robot of its kind in Vermont.

The funds raised for Cheshire will ultimately support more than just surgical improvements; further improvements include expanding the gastroenterology department, adding a second linear accelerator for radiation oncology, and additional cancer care treatment space.

Having surgical care nearby can be life changing, as was the case for Dall, who lives 15 minutes from Cheshire.

“I am so grateful to the doctors and staff at Cheshire,” Dall says. “Without them, I would have had to travel three hours roundtrip for the surgery and then daily for the following six and a half weeks of my radiation treatments. I just can’t imagine having to deal with that on top of a cancer diagnosis.”

To learn more about strategic surgical investments at Dartmouth Health member hospitals, contact Hilary Davis at 603-646-5910 or HilaryR.Davis@hitchcock.org.

Training Doctors for Every Community

A new program at Geisel School of Medicine provides unique experiential learning opportunities to help future doctors better help underserved communities.

By Mara Johnson-Groh

When medical student Erin Kelly MED '27 flew to Valdez, Alaska, population 4,000, for a family medical clerkship, she didn't know how profoundly career-altering the experience was going to be—or that she'd spend lunch breaks shrimping. Over six weeks, she worked with the local doctors and nursing staff, practicing new skills, reconnecting to the things that drew her to becoming a doctor, and learning what rural medicine truly entails.

"At one point I found myself fishing alongside the same patients I'd seen at the clinic that morning," says Kelly, a third-year student at the Geisel School of Medicine at Dartmouth who is now considering family medicine. "It made me realize every role, from bartender to physician, holds equal value in keeping this community thriving."

Kelly will be one of the first students to graduate from the new Rural Health Pathway of Concentration at Geisel, one of several new



▲ Erin Kelly MED '27 immersing herself in Alaska during a family medicine clerkship.

Photo courtesy of Erin Kelly MED '27

concentrations offered to medical students looking to augment their clinical training with curated co-curricular and experiential learning. Designed in response to a student request, the Pathways of Concentration program provides a small cohort of students a longitudinal, co-curricular experience that integrates intentionally with the medical school's curriculum. Over four years, the Pathways offer exploratory preclinical didactics and experiential learning, continued immersive clinical experiences during the clerkship years, and a final scholarly project, all around a specific area of focus.

The original Pathway, focusing on medical Spanish, graduated its first cohort in 2025. On the heels of its success, three more Pathways were developed and launched in fall 2025: Global Health, Rural Health, and Urban Health.

"The Pathways are focused on areas where patients may have historically been hard to reach, underserved, or distrustful of the healthcare system due to systemic inequities or challenges with access," says Sonia Chimienti, MD, FIDSA, program founding director and dean of educational affairs at Geisel. "By providing opportunities for more intentional deeper experiential learning beyond the standard curriculum, we hope to give our students the tools to become leaders and create systems of change within healthcare."

Each Pathway has tailored programs and experiences. For example, in the Medical Spanish Pathway, students go through a structured, clinically based language instruction program and must pass a rigorous language certification. The program

"It made me realize
every role, from
bartender to physician,
holds equal value
in keeping this
community thriving."

—Erin Kelly MED '27
medical student

is structured to help students better connect with patients and create a more welcoming and comfortable space for them. Upon receiving their language certification and meeting the requirements of the Pathway curriculum, students are encouraged to include it in their residency applications. Geisel also notes their satisfactory progress in the Pathway in their Dean's Letter, or Medical Student Performance Evaluation, which provides residency programs and potential employers with information about the student's overall academic experiences and performance in medical school.

"In our first cohort, two of the students were selected for residency positions in part because of their demonstrated language proficiency in Spanish," says Terri Eastman, MEd, CHES, director for integrated curriculum and interprofessional education at Geisel, and administrative director of the Pathways program. "This shows how the Pathway's experiences and certificates can really make our students more competitive in the residency world."

Students in the Global Health Pathway complete clerkships at clinics abroad, including in Tanzania, China, Rwanda, and a growing list of other partner locations. In addition to cultural differences, working in an international setting can force the students to practice with limited resources.

"It teaches them to think more critically about clinical decisions, including things like ordering tests," says Lisa V. Adams, MD, MED '90, associate dean for Global Health and faculty advisor to the Center for Global Health Equity at Geisel, and director of the Global Health Pathway. "It also helps them understand what it truly means to work with a community that might have a different culture, different religion, different healthcare systems."

Chimienti hopes to continue growing the Pathways program to include more focus areas. Already, the Pathways, which have limited cohort sizes, are receiving a surplus of interest from students.

"The students are incredibly passionate about these experiences because they provide a deeper layer of learning that supplements their formal curriculum," Chimienti says. "We are excited to continue supporting these Pathways for the benefit of our students' educational experiences, and ultimately to improve the health of the patients and communities we are privileged to serve."

To learn more about Geisel educational programs, contact Kim Labonte at 603-646-5110 or Kim.Labonte@dartmouth.edu.

Open for **Interpretation**

These Geisel School of Medicine students are learning to connect with deaf and hard-of-hearing patients when an interpreter isn't available.

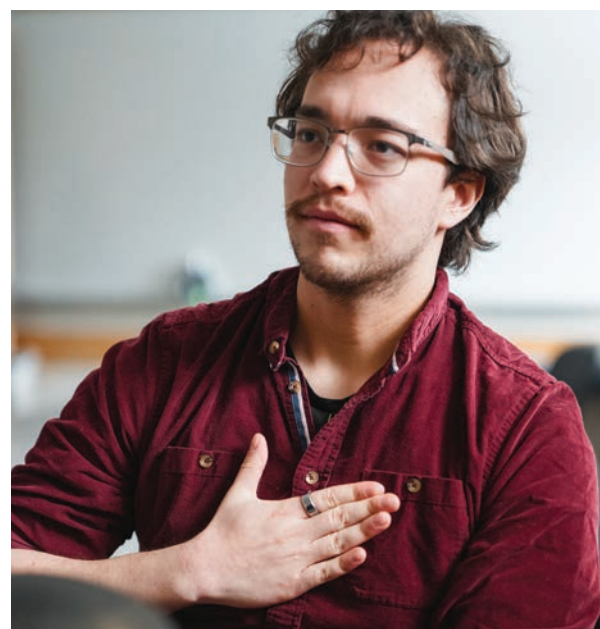
Continued from p. 1.

The classroom is silent but far from still. All eyes are on Jerome Wilcox, director of inclusive excellence at the Geisel School of Medicine at Dartmouth, as he makes eye contact with a student and poses a question with his hands and a shrug. She concentrates as she signs back, then laughs as the room fills with questions.

Wilcox explains aloud that the American Sign Language sign for “shelter” is different from what he teaches this group of Master of Public Health (MPH) students. Instead, he teaches the students to combine the sign for “safe” with the sign for “place,” which are easier to recognize coming from someone inexperienced in sign language.

The MPH students—members of Dartmouth’s UNICEF Student Chapter—are learning Humanitarian Sign Language, a simplified system designed for communication during crises. The sessions are voluntary and students receive no academic credit. In fact, it was the student-led club that reached out to Wilcox for lessons. He hopes to formalize the curriculum so more students can learn how to bridge communication gaps in emergency situations.





- ▲ Clockwise, starting top left: Stephanie Itumba MPH '26 practices signing the number 3. Itumba (left) and Kamryn Thomas MPH '26 learn the sign for "medicine." Enrico Khu MPH '26 signs "my." Chiamaka Agali MPH '26 (left) and Zinne Njoku MPH '26 say "thank you" in sign language.
- ▲ Jerome Wilcox, director of inclusive excellence, began to lose his hearing at age 40. One way he has adapted is by wearing multiple smart watches, as each offers better connection to other bluetooth devices around him.



TRY IT YOURSELF

Jerome Wilcox teaches students the American Sign Language (ASL) alphabet, numbers one through 10, and Humanitarian Sign Language: key signs for emergency situations—such as water, food, medicine, child, shelter, danger, yes/no, and thank you—along with simple phrases.

Learn how to sign a few of them:

MEDICINE



Hold your non-dominant hand open, palm up. Place your dominant hand above it with your middle finger touching the center of the palm. Wiggle the top hand back and forth, as if crushing a pill with your middle finger.

HELP



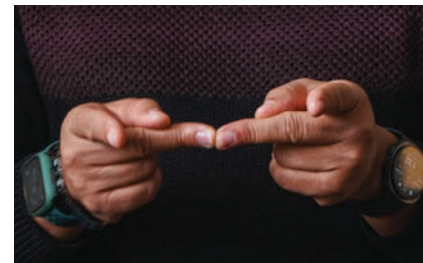
Place your dominant hand in a thumbs-up on top of the flat palm of your non-dominant hand. Lift both hands upward together to sign “help.” Move your hands in a sweeping arc away from your body to mean “help you.” Move them toward your body for “help me.”

SHELTER

“SHELTER”
COMBINES THE
SIGNS FOR “SAFE”
AND “PLACE.”



Make fists and cross your arms over your chest in an X, with the palm side of your fists facing you. Then uncross your arms, bringing both hands apart and slightly outward, turning your fists so the palm sides face away from you. This is how you say “safe.”



For “place,” make the letter “P” with both hands: With your pinky and ring fingers folded down against your palm and your pointer and middle fingers outstretched in a V, place the tip of your thumb at the base of the V, then turn your hands so your fingertips point downward. With both hands making the letter “P,” turn them toward each other and touch the middle fingertips together. Tap them, then move the hands apart in a circular motion toward your body, and touch the fingertips together again closer to you.

Signs of **Understanding**

The students know they may never become fluent in sign language. But fluency isn't the goal. Even limited communication can help deaf or hard of hearing patients feel more welcome and at ease in a crisis.

"This is a small step to meeting patients where they're at," says Zinne Njoku MPH '26, pictured here making the sign for "food."



To learn more about health sciences education at Geisel, contact Kim Labonte at 603-646-5110 or Kim.Labonte@dartmouth.edu.



Watch a video about
Humanitarian
Sign Language

When the Doctor Prescribes Ice Cream

A new model for infusing personalized palliative care into primary care ensures health is on your own terms.

By Ashley Festa

At age 84, Uldine Farrell's rapidly declining memory revealed something more than just normal aging—she had Alzheimer's disease. As her primary caregivers, Uldine's daughters struggled to accept what was happening to their ever-joyful mother.

"My sister and I were still trying to treat Mom as if nothing were wrong," says Cathy Parry, who lives in Loudon, New Hampshire. "When you love someone, it's hard to change the way you treat them. We needed to lower our expectations."

Uldine's longtime doctor, Julia Burdick, MD, an internal medicine physician at Dartmouth Hitchcock Clinics Concord in Concord, New Hampshire, helped Cathy and her sister understand the reality of Alzheimer's progression.

"Dr. Burdick gave us ideas about how to make life more comfortable for our mother," Cathy says, recalling mealtime challenges. "We knew Mom had to eat in order to stay alive. Dr. Burdick helped us change our perspective, and we started thinking more about Mom rather than ourselves. We would put food in front of her, but if she didn't want it, that's just the way it was. My mom loved ice cream, so sometimes she'd eat some ice cream before bed. It was not as nutritious as we would have liked, but it wasn't about us; it was about Mom."



Now, Burdick is working to ensure that other patients and their caregivers can have access to the same information and personalized care choices. Along with another Dartmouth Health physician, Henry Feng, MD, Burdick is building a model to integrate palliative care—traditionally an inpatient specialty—into primary care settings, bringing this approach to more patients when they need it.

Care for What Matters Most

Palliative care is different from end-of-life care—it's for anyone with a chronic condition that affects quality of life. This type of care includes easing symptoms such as pain and sleep problems; providing support for emotional, spiritual, and physical needs; and helping patients make healthcare decisions that align with their priorities. For example, a patient with fatigue might want to enjoy a family outing; the solution could be medication to give the patient enough energy to join the fun. Or, as in Uldine's case, it could be reducing stress around mealtimes by helping the family understand what's realistic.

At the crux of this approach is the question of how a patient wants to live, says Feng, an internal medicine physician at Dartmouth Hitchcock Clinics Concord and a clinical assistant professor at the Geisel School of Medicine at Dartmouth. "Modern medicine can keep a person alive," he says, "but are they enjoying their quality of life?"

Right now, palliative care is largely treated as a specialty, with patients having to see an additional provider to develop palliative-informed care plans. Without them, a patient's symptoms can sometimes land them in the emergency room unnecessarily.

And there, "our default is to provide all life-sustaining measures, but that might not be what the patient wants," says Susan Varga, MD, an emergency medicine physician at Dartmouth Hitchcock Medical Center and an assistant professor at Geisel. Burdick and Feng's model aims to not only empower patients and caregivers to take the right steps for their unique priorities, but also provide a roadmap for other providers they may encounter, too, such as specialists, home healthcare workers, or visiting nurses.

When patients have talked with their primary care doctors about their goals for care before a crisis occurs, Burdick says, healthcare providers can have confidence that they are acting morally and ethically, even if the patient's treatment isn't standard protocol.

Expanding Options

In the initiative, Burdick and Feng are developing ways to identify patients, like Uldine, who would benefit from outpatient palliative care intervention. To expand reach and maintain quality care, nurses, social workers, and other providers—not just palliative care specialists—will be trained to administer a new standardized screening tool, which can be used, for example, when a patient is discharged from the hospital.

"Patients don't know this type of care is available, so we can reach out to them if they've been in and out of the hospital a lot," Burdick says. "We can offer them a better layer of support to keep them out of the acute care system. If there's good communication between interdisciplinary care teams, there's more opportunity to treat the patient at home."

Although this collaborative framework is designed for Dartmouth Health patients, the researchers plan to generalize the model so other healthcare systems can modify and use it for their patient populations, too.

"Primary palliative care has existed for years [as a concept], but Dr. Burdick and I are taking it from abstract to concrete," Feng says. With the support of the Susan and Richard Levy Health Care Delivery Incubator at Dartmouth, a joint venture between The Dartmouth Institute for Health Policy & Clinical Practice and the Department of Community and Family Medicine at Dartmouth Health, "we are trying to expand this type of care with a generalizable framework and make it sustainable for other healthcare systems." For patients, Feng adds, "the value is immeasurable."

To learn more about palliative care at Dartmouth Health, contact Matthew Hall at 603-667-6309 or Matthew.R.Hall@hitchcock.org.



She Didn't Take No **for an Answer**

Sara K. Dye, MD, MED '75 RES '83 has transformed vascular and diabetes care in Native communities across the U.S. But first she had to fight to become a doctor.

By Jeremy Martin

The odds were stacked against Sara K. Dye, MD, MED '75 RES '83 when she set her mind on becoming a doctor, particularly as a woman of the Sac and Fox Nation, the largest of three federally recognized tribes of Sauk and Meskwaki (Fox) Indian peoples of central Oklahoma.

In high school, her guidance counselor suggested secretarial school. Medical schools in Oklahoma, Texas, and Kansas had already rejected her, and when she took the entrance exam for nursing school, she failed. A medical school interviewer had also raised the question: If Dye were to be admitted, how would she pay for her education?

◀ Sara K. Dye, MD, MED '75 RES '83 was recognized with the Career Achievement Alumni Award from Geisel School of Medicine in September 2025.

Dye fought for years to gain access to a medical school education. In 1971 she finally did, becoming the first Native American woman to attend Dartmouth Medical School. She went on to become one of only 16 Native women who were surgeons when she began her career—blazing the way for more to follow.

And being the first isn't something Dye has taken lightly. Her career has been characterized by extensive work to open the door to healthcare for others through her leadership within the Indian Health Service (IHS), a branch of the United States Department of Health and Human Services that advocates for more than 2.8 million Native American and Native Alaskan peoples across the U.S.

Kicking Open Healthcare Doors

On reservations, specialist care could be “200-some-odd miles this way and about 400 miles that way,” Dye says. “There might be one car between two families. And if that breaks down, they can't get into town. Or if there's a blizzard, they can't drive for hours to the doctor.” This dearth of access exists across many of the country's rural areas and has always been acute among Native populations.

While a surgeon at Carl Albert Indian Hospital in Ada, Oklahoma, Dye discovered that Native patients with diabetes were losing limbs at exceedingly high rates, a consequence of poor circulation that

“[Healthcare access] is less about proximity to major medical centers than bringing the right expertise to communities who need it.”

—Sara K. Dye, MD, MED '75 RES '83

sometimes accompanies advanced diabetes and is exacerbated by limited access to specialty care.

To address this disparity, Dye established the IHS's first noninvasive vascular laboratory. By using blood pressure cuffs and ultrasound to diagnose peripheral vascular disease early, Dye could identify blockages that could be cleared and predict amputations before they became inevitable. Besides providing better healthcare, it also spared patients from having to travel hundreds of miles for expensive diagnostic tests.

By this time, Dye was also traveling almost constantly across the U.S. to visit IHS clinics. She often gave lunch seminars that taught providers how to examine the unique features of diabetic feet.



▲ Top: The first two Native Americans to graduate from Dartmouth Medical School, Sara K. Dye, MD, MED '75 RES '83, and Jeral Ahtone, MD, MED '75 on campus as students. Bottom: Dye and Ahtone back on campus for reunion in September 2025.

Top photo courtesy of Dartmouth Medicine, Fall 1995

These and other seemingly small changes had an outsized effect on reducing amputation rates and diabetic foot complications among Native populations. So Dye kept going, looking for new ways to improve patient access and healthcare through the IHS.

One of Dye's visionary ideas was to implement a third-party billing system, the first of its kind for the IHS, so that tribal healthcare facilities would be better poised to bring in revenue and retain staff. She pushed for infrastructure improvements to telemedicine networks, an almost unheard-of proposition at the time, while advocating for partnerships with off-reservation hospitals to reduce duplications in services. And as assistant professor of family medicine at the University of South Dakota, and adjunct faculty at the University of North Dakota School of Medicine, Dye built programs to train future physicians in the unique challenges and opportunities related to Native healthcare.

Healthcare access, as she saw it, was "less about proximity to major medical centers than bringing the right expertise to communities who needed it," Dye says.

Eyes on the Prize

Dye's medical career began years before arriving at Dartmouth. Initially rebuffed from attending medical school, she began working as an x-ray technician in Tulsa, Oklahoma. It was there that she figured out how she might be able to fund her medical education.

A kind patient at the clinic where she worked, who had listened as she shared her dreams and worries about being able to afford medical school, told her about vocational rehabilitation services through the Bureau of Indian Affairs. "‘Something's wrong with your eye,' he had winked at me," Dye remembers, in reference to the congenital eye condition that Dye had since childhood. That eye condition, the patient explained, could qualify her for vocational rehab funding, and be her ticket to medical school. And he was right.

Armed with that funding commitment, both for the necessary pre-med courses and for medical school, she just needed a medical school to give her a chance.

That chance came soon after, when the Bureau of Indian Affairs told her about a medical school “back East” that had started a Native American recruitment program. In 1970, Dartmouth President John Kemeny, PhD, had vowed to strengthen the presence of Native American students at the College. By 1971, a handful of Native American men had enrolled at Dartmouth, but no women. Dye was the first.

Today, Dye is retired from being chief medical officer for the Aberdeen Area IHS and consulting surgeon at many facilities across the central U.S. She never wavered from her focus on access and advocacy, which has earned her multiple accolades over the years: the U.S. Public Health Service Physician Executive of the Year Award, the IHS Director’s Award, the Outstanding IHS Clinician Award, and the Friend of Nursing Award. In September 2025, she was recognized with the Career Achievement Alumni Award from the Geisel School of Medicine at Dartmouth.

“I am grateful for the many advantages Dartmouth gave me to prepare me for a wonderful career and a love for a lifetime of learning and service,” said Dye during her award acceptance speech. “Becoming a doctor often felt impossible, but obstacles can be a path to success. These obstacles produced in me the perseverance that I hope will inspire others.”

To learn more about and connect with alumni, contact Mae Leonard at 603-646-5313 or Mae.Leonard@dartmouth.edu.



Steering Medicine Forward

Claire Alford, MPH '26, embodies the future that renowned Native surgeon Sara K. Dye, MD, MED '75 RES '83 fought to make possible over five decades.

Alford, a descendant of the Absentee Shawnee Tribe, never expected to meet a Native woman doctor. But, like Dye, she aspires to become one and is pursuing a Master of Public Health degree at the Geisel School of Medicine at Dartmouth ahead of medical school, propelled by a desire to address health disparities she has seen firsthand.

Growing up in Santa Maria, California’s agricultural community, Alford watched farm workers suffer from treatable diseases while struggling to access care. That experience inspired Alford to work as a diabetes patient navigator at Indian Health Center of Santa Clara Valley before coming to Geisel. “Being able to help intervene and get them back on track was such a privilege,” she says.

Public health, Alford says, “allows providers to address inequities at the system level so patients no longer have to suffer from treatable things.” By carrying Dye’s legacy forward and honoring her ancestors, she continues a tradition of advocacy through education and service—proof that progress depends not only on movement, but on who steers it.



Research **Briefs**

Explore recent discoveries made by innovators at Dartmouth Health and the Geisel School of Medicine at Dartmouth that could transform health and medicine.



A Kill Switch Hidden Inside Every Cell

Every cell carries the design for its own destruction. The process—apoptosis—is how the body quietly removes damaged or dangerous cells. When that mechanism breaks down, cancer cells can proliferate. Understanding how that kill switch works could help answer one of the biggest open questions in oncology today.

Postdoctoral researcher Sukrut Kamerkar, PhD, and Henry Higgs, PhD, professor of biochemistry and cell biology, both at the Geisel School of Medicine at Dartmouth, are already on it. They discovered that a protein called LACTB acts as a regulator deep inside the mitochondria, reshaping its inner membrane to release the molecules that pull the trigger on cell death. When Higgs and Kamerkar reduced LACTB levels, cells stopped dying on cue. When they boosted LACTB levels, cells died faster. Their results were published in *Science Advances* in December 2025.

Their findings may have unlocked a layer of control that nobody knew had been governing cell death all along. If many tumors resist treatment because their cells won't die when they should, LACTB may be the very lever that cancer has been secretly hiding behind.

To learn more, go to dartgo.org/cellularkillswitch.



An AI Teaching Assistant That These Students Actually Trust

Medical education has a scale problem. Even at well-resourced institutions, educators can only reach so many medical students at once.

But AI tools could alleviate this scale problem, according to a study published in November 2025 in *npj Digital Medicine*. Thomas Thesen, PhD, associate professor of medical education at the Geisel School of Medicine at Dartmouth, and co-author Soo Hwan Park, MD, MED '25 tracked how 190 medical students used NeuroBot TA, an AI teaching assistant built by Thesen and Park to answer students' questions around the clock using only vetted course materials. Unlike chatbots prone to generating convincing but inaccurate information, NeuroBot TA pulled exclusively from textbooks, lecture slides, and clinical guidelines. Students overwhelmingly trusted it more than general AI tools, and nearly half found it a useful study aid.

Thesen's lab has a history of these innovations. Its AI Patient Actor platform, developed in 2023, simulates patient conversations to help medical students sharpen diagnostic and communication skills, and is now used in medical schools across the United States and abroad. Together, the tools point toward a future where AI doesn't replace medical educators but broadens their reach far beyond the classroom.

To learn more, go to dartgo.org/aiteachingassistant.



Tick-Tock: Cutting Time to Lyme Disease Diagnosis

Lyme disease can be notoriously difficult to diagnose quickly and accurately. Most standard tests detect the body's immune response to infection rather than the bacterium that causes it—and immune responses can take time to develop and vary greatly between individuals. But researchers at Dartmouth Health's Dartmouth Hitchcock Medical Center (DHMC) have developed a new tool that directly detects *Borrelia burgdorferi*, the bacterium responsible for most Lyme disease cases in the U.S., much earlier in the course of infection.

The team, led by Guohong (Grace) Huang, PhD, in the Laboratory for Clinical Genomics and Advanced Technology at DHMC, presented the work at the Association for Molecular Pathology's 2025 Annual Meeting in Boston. Using droplet digital polymerase chain reaction (ddPCR) technology, the researchers created three assays that can identify the DNA of *Borrelia* species—including one specific for *B. burgdorferi*—with very high sensitivity, detecting as few as 5 to 10 bacterial cells in a sample. This represents a substantial contribution to Lyme disease patient care, as conventional antibody tests can take weeks to turn positive and often cannot distinguish between past and active infections. The team is currently investigating the potential use of this test with skin biopsies of lesions that could be associated with Lyme disease in patients who do not have the typical "bull's-eye" rash and have not yet developed detectable antibodies.

To learn more, go to dartgo.org/lymetest.



Early Gut Microbiome Differences in Babies With Cystic Fibrosis

Researchers at the Geisel School of Medicine at Dartmouth have discovered that infants with cystic fibrosis (CF) show distinct differences in their gut microbiome within the first few months of life compared with healthy infants, and those changes may influence how the disease progresses.

In a study published in *mBio* in March 2025, the team analyzed stool samples from infants with CF and infants without CF. Although it is best known for damaging the lungs, CF also disrupts digestion and nutrient absorption early in life.

Led by Benjamin Ross, PhD, assistant professor of microbiology and immunology at Geisel, and clinician-scientists Juliette Madan, MD, MS, RES '21 MED '00 and Julie Sanville, DO, of Geisel's Department of Pediatrics and who both practice at Dartmouth Health, the team found that babies with CF experienced delayed and disrupted development of key gut bacteria involved in digestion and immune maturation. Notably, these differences appeared before gastrointestinal symptoms typically emerge.

The findings suggest microbiome disruption may be an early feature of CF itself, pointing to possible early-life interventions, including targeted microbiome therapies or tailored nutrition strategies to improve growth and health outcomes.

To learn more, go to dartgo.org/cfgutmicrobiome.



The Implant That Records the Brain—While Regrowing the Skull

Foreign objects don't usually do very well in the brain. Even electronic implants, placed against neural tissue, can risk immune response, scarring, and structural damage to the very organ they are meant to help. Such problems limit how long devices can stay and how well they perform over time.

But Dartmouth researchers have now built an implant that works with the body instead of against it. In a paper published in *Advanced Materials Technologies* in February 2026, Alexander Boys, PhD, assistant professor at the Thayer School of Engineering at Dartmouth, and Katie Hixon, PhD, clinical assistant professor of orthopaedics at the Geisel School of Medicine at Dartmouth and assistant professor of engineering at Thayer, combined their labs' distinct expertise: Boys' thin-film neural recording arrays were integrated with Hixon's bone-regenerating scaffold material, creating a single device that records brain activity while simultaneously regrowing the skull around it. In laboratory testing, the implant produced no adverse immune response and stimulated bone formation comparable to the scaffold alone.

In the future, such a device could support brain-computer interfaces, enable real-time pain monitoring, and extend the lifespan of neural implants used to treat epilepsy and Parkinson's disease, conditions where durable, long-term access to the brain is everything.

To learn more, go to dartgo.org/skullimplant.



Making Cancer Glow: A First-in-Human Sarcoma Surgery Trial

Surgeons removing soft-tissue sarcomas often struggle to see where the tumor ends and healthy tissue begins. As a result, incomplete removal occurs in an estimated 20 to 35 percent of sarcoma resections, according to studies in the *Annals of Surgery* and *Journal of Clinical Oncology*, increasing the risk of recurrence and, for aggressive cancers, death.

In a first-in-human clinical trial published in *Molecular Cancer Therapeutics* in May 2025, Dartmouth Cancer Center researchers demonstrated that a fluorescent imaging agent called ABY-029 can cause sarcoma cells to glow during surgery, giving surgeons a real-time map of tumor margins.

The ongoing project is led by orthopaedic oncology surgeon Eric Henderson, MD, founding medical director of the Sarcoma Oncology Program at Dartmouth Cancer Center and associate professor of orthopaedics at the Geisel School of Medicine at Dartmouth; Keith Paulsen, PhD, MS, Thayer '84 Thayer '86 professor of engineering at the Thayer School of Engineering at Dartmouth and scientific director for the Center for Surgical Innovation at Dartmouth Health's Dartmouth Hitchcock Medical Center; Kimberley Samkoe, PhD, associate professor of engineering at Thayer; and Samuel Streeter, PhD, D '14 Thayer '22 research assistant professor of engineering at Thayer, and a specialist in biomedical optics.

The trial found that ABY-029 safely illuminated tumor tissue in all patients, with high specificity. The results move fluorescence-guided surgery closer to routine use, offering surgeons clearer boundaries in the operating room and patients a better chance at complete tumor removal the first time.

To learn more, go to dartgo.org/makingcancerglow.

To learn more about medical and healthcare research at Geisel or Dartmouth Health, contact Matthew Haag at 603-646-5130 or Matthew.PHaag@hitchcock.org.



New & **Noteworthy**

Institutional milestones from across
Dartmouth Health and the Geisel School of
Medicine at Dartmouth

Byrne Family Cancer Research Institute Tops \$50 Million Goal

In January, the Byrne Family Cancer Research Institute at Dartmouth Cancer Center surpassed its \$50 million fundraising goal, thanks to a \$25 million lead gift from longtime supporter Dorothy Byrne, and additional support from community leaders, philanthropists, and Dartmouth alumni and families. Funds raised have supported the creation or expansion of dozens of initiatives dedicated to recruiting and retaining researchers and physician-scientists, and enhancing student scholarship and training programs; developing new tools and technologies to fuel cancer research; expanding best-in-class clinical trials, and accelerating innovative therapeutics to market.

dartgo.org/byrncancer50



VNH Is Now Dartmouth Health Home Care

Dartmouth Health has rebranded its home healthcare and hospice service to better align its mission as part of the overall health system's vision to set the standard for rural healthcare. Formerly known as Visiting Nurse and Hospice for Vermont and New Hampshire (VNH), Dartmouth Health Home Care will carry on a long history of serving patients in the Upper Valley region.

dartgo.org/dhhomecare

Dartmouth Ranks Among Top 100 Universities for Patents

For the third consecutive year, Dartmouth was ranked by the National Academy of Inventors on its list of top 100 universities worldwide granted patents in the United States. Dartmouth received 40 patents in 2025, including for medicines and methods to prevent or treat herpesvirus infections in newborn babies, and for a system that uses "attention-based" techniques to automatically sort and analyze detailed images from high-resolution microscopes.

dartgo.org/top100forpatents

Littleton Regional Healthcare Selects Dartmouth Health as Preferred Future Partner

In September, the Board of Trustees of Littleton Regional Healthcare announced they had signed a letter of intent, serving as the next step toward the hospital in Littleton, New Hampshire joining the Dartmouth Health system.

dartgo.org/littleton

New CFO and new CHIO for Dartmouth Health

Wendy E. Fielding, MBA, became Dartmouth Health's new chief financial officer (CFO) in January. Fielding was previously CFO for Dartmouth Health's Dartmouth Hitchcock Medical Center, and senior vice president of finance for Dartmouth Health. Dartmouth Health also welcomed Randa Perkins, MD, MBA, FAMIA, as its next chief health information officer in January. Perkins was previously chief medical information officer and senior director of clinical informatics at the H. Lee Moffitt Cancer Center and Research Institute.

dartgo.org/newcfo
dartgo.org/newchio

U.S. News & World Report Ranks Best Medical Schools

The Geisel School of Medicine at Dartmouth was placed in the top tier—Tier 1—in *U.S. News & World Report's* 2026 ranking of the best medical schools for primary care.

dartgo.org/usnewstier1

North Country Hospital Partners on Neonatal Care

In February, Dartmouth Health Children's announced a partnership with North Country Hospital (NCH), a not-for-profit critical access hospital in Newport, Vermont, to provide neonatal intensive care to NCH patients via telemedicine through the Dartmouth Health TeleICN. NCH is the 11th critical access hospital to partner with DH for TeleICN services.

dartgo.org/ncneonatal

New President and CEO at Southwestern Vermont Medical Center

Estevan Garcia, MD, began as CEO and president of Southwestern Vermont Medical Center, a member of Dartmouth Health, at the beginning of 2026. Garcia joined SVMC from Dartmouth, where he served as chief health and wellness officer, addressing the student mental health crisis by utilizing a public health preventative approach.

dartgo.org/svmcceo

Healing Harvest Food Pantry Opens in Bennington, Vt.

Dartmouth Cancer Center Bennington, located on the Southwestern Vermont Medical Center main campus, launched a new branch of the Healing Harvest Food Pantry in December, which supports cancer patients and their families who are experiencing food insecurity.

dartgo.org/benningtonhh

Three Dartmouth Health Members Receive Pinnacle of Excellence Awards

Three Dartmouth Health member hospitals were named 2025 Human Experience Award winners by Press Ganey, the global leader in healthcare experience solutions and services. Alice Peck Day Memorial Hospital received the Guardian of Excellence award in the emergency department category, New London Hospital received the Pinnacle of Excellence and Guardian of Excellence awards for its Express Care Plus clinic, and Valley Regional Hospital received the Guardian of Excellence award in the ambulatory care category.

dartgo.org/pinnacleofexcellence

Alumni Perspectives

Vitals Magazine asked four alumni what they see as the most urgent challenges to accessing health and medicine today, and how their work is shaping a healthier future.



► **Stephanie Rolin, MD, MPH, MED '14, MPH '08**

Forensic Psychiatrist and Physician Scientist, Howard University

Informing to Empower

Misinformation has become a real barrier to health and wellness. Patients are not just navigating insurance and waitlists. They're also sorting through a stream of conflicting, politicized, and sometimes false medical claims. When people can't tell what's credible, they may delay care, avoid treatment, or lose trust in clinicians.

I see this often in psychiatry. Young people and families come in after reading alarming things online about diagnoses or medications. Some of it is incomplete. Some of it is simply wrong. If we don't talk about it directly, it affects whether they engage in care at all.

That reality shapes both my clinical work and research, which emphasizes shared decision-making. In practice, that means slowing down, reviewing evidence clearly, and making sure patients understand risks, benefits, and alternatives. I also co-host "Rolin Forward," a public health podcast where we unpack health and policy debates so families can make sense of them.

Access only works when people understand what they're being offered.

Inviting Dartmouth and Dartmouth Health **ALUMNI**

If you would like to share your perspective in a future issue of *Vitals Magazine*, contact managing editor Eva Botkin-Kowacki at Eva.Botkin-Kowacki@dartmouth.edu.

Care as a System

Training at Geisel taught me a fundamental truth: Medicine is a science, but care is a system. Today, the greatest barrier to health is not a lack of expertise—it is the complexity of accessing it. Patients navigating healthcare often face a fragmented maze of specialists and insurers, where the burden of coordination falls on them at their most vulnerable. This is not a failure of compassion; it is a failure of design.

The physician-patient relationship remains the most powerful healing force in medicine. Yet it is still largely confined to brief encounters within clinic walls. The next decade of healthcare will be defined by redesigning care to extend human connection beyond physical space.

In my work, I pioneered the first physician-guided AI avatar—a new model for how doctors can remain continuously present beyond the exam room. These digital agents do not replace physicians; they amplify them. They provide real-time education and monitoring, making high-quality care continuous, personalized, and equitable. This is augmentation, not automation: restoring the physician's presence at scale.

Dartmouth has long asked not only what medicine can do, but how it must evolve. We now have the tools to remove friction from the system and strengthen the human core of care. The question is no longer whether technology will shape healthcare—but whether physicians will lead that transformation. That work is already underway.



◀ **Ryan Budwany, MD, MBA, MPH '05**

Chief Medical Officer,
PainHealth Interventional
Pain Management



► **Rajeev Fernando, MD,
FEL '10**

Founder, CEO,
Chief Medical Officer,
Chiraj Inc.

Access to Dignity After Trauma

The Yazidis are a small community in the Sinjar region of northern Iraq. In August of 2014, a terrorist organization abducted thousands of Yazidi women and children. Today, 3,000 remain missing. As chief medical officer for non-profits Chiraj and Medical Aid Initiative Norway, I am honored to work with a facility that provides medical, psychological, social, and legal services for Yazidi women and girls who survived.

Optimizing their mental health remains the biggest challenge. Numerous women and girls lost parents, husbands and children, and were exposed to extreme violence, rape and exploitation. Most are living with severe PTSD and need long-term, continuous psychological and social support. We are also receiving new survivors who have returned after many years in captivity, often after spending their entire adolescence with terrorists. Working with them requires very intensive, long-term mental health care and careful reintegration into their families and communities. As many of our survivors live in the mountains, we help with transportation to these services, too.

Survivors also need livelihoods and empowerment programs so they can rebuild their lives, become more independent, and reintegrate into society with dignity. Many of our survivors have lost a sense of their humanity. This year, on March 8—International Women's Day—we hosted an event that offered lunches, art therapy, and cosmetics.



► **Anubhav Kaul, MD,
MPH '13**

Chief Medical Officer,
Upward Health

Social Support Leads to Healthier Outcomes

One of the strongest predictors of how a patient will fare in the hospital isn't simply the severity of their disease—it's whether someone is sitting beside them. Research consistently shows that patients with strong social and caregiver support experience lower readmission rates and better recovery outcomes.

Patients are at their most vulnerable in healthcare settings. Without support, their questions can go unasked and their preferences unheard. My perspective has been deeply shaped by The Dartmouth Institute for Health Policy & Clinical Practice's promotion of shared decision-making—the idea that patients deserve not just information, but true partnership in choosing care that aligns with their values. Yet shared decision-making can only effectively happen when patients feel empowered enough to participate.

At Upward Health, a home-based medical group providing primary medical and behavioral care, we serve patients from diverse backgrounds who often face the greatest barriers to engagement: social isolation, language differences, housing instability, or mistrust of the system. Our community health workers and care teams show up consistently and build trust. Over time, that steady advocacy builds patient confidence and creates greater equity in the healthcare experience.

Access to care is not only about availability; it is about ensuring every patient's voice is heard and advocated for.



“Something my public health education at Dartmouth instilled in me: that we’re so much better together than we are in silos. I carry that into every clinical setting.”

—Nirali Chauhan, MPH '19

Read Nirali's story at dartgo.org/chauhan

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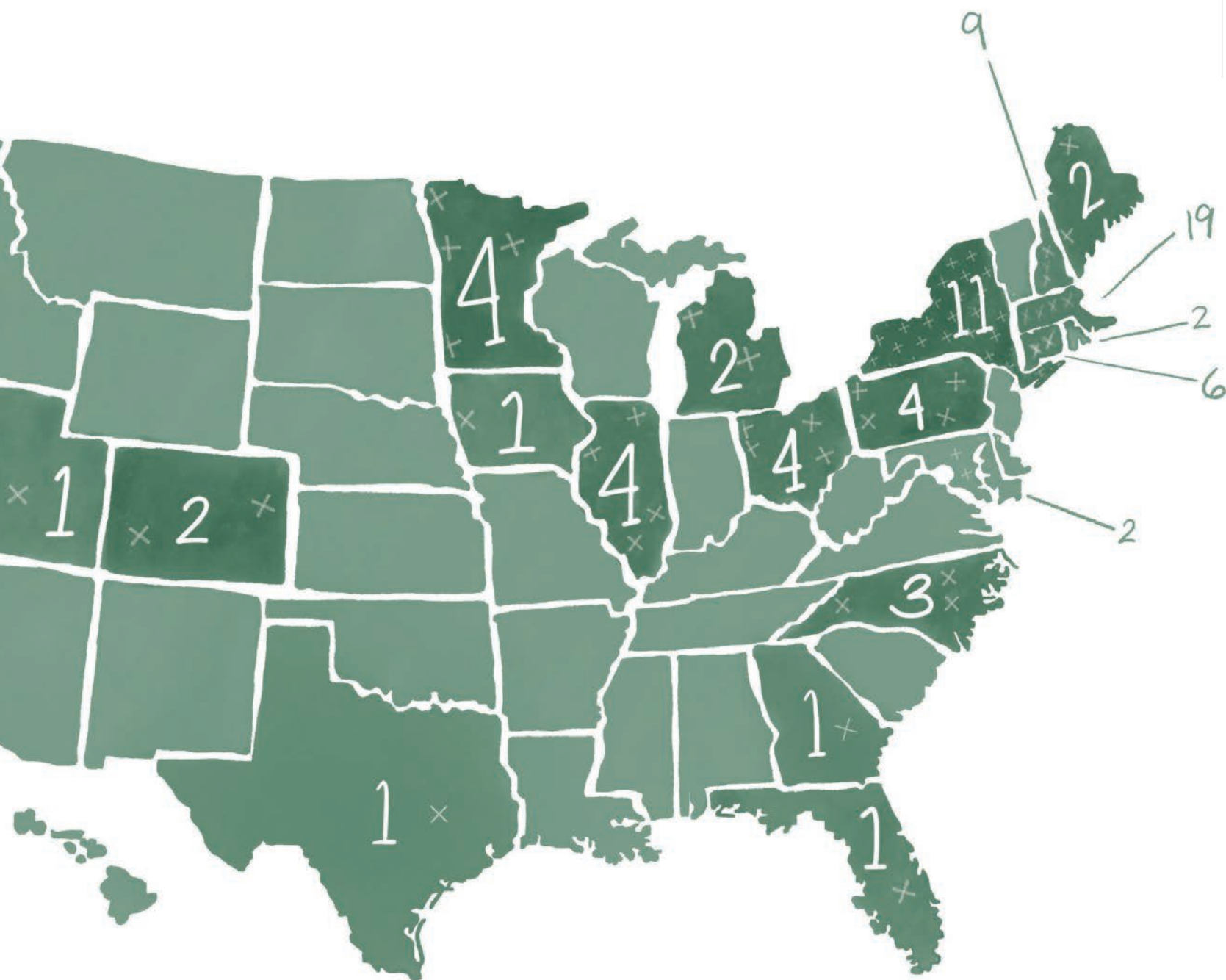
Geisel School of Medicine’s graduating class of medical students will take the next steps in their training in residency programs across the country.

Here’s where they’re going:

Specialties	Residents
Anesthesiology	9
Child Neurology and Neurology	3
Dermatology	3
Emergency Medicine	4
Family Medicine	5
Internal Medicine	16
Interventional Radiology*	1
Neurological Surgery	1
Obstetrics and Gynecology	4
Ophthalmology	2
Orthopaedic Surgery	4
Pediatrics	8
Physical Medicine and Rehabilitation	4
Plastic Surgery*	1
Preliminary and Transitional	16
Psychiatry	8
Radiation Oncology	2
Radiology-Diagnostic	3
Surgery-General	6
Urology	2
Vascular Surgery*	3

**Integrated residency program*





To see the full list of institutions where the Class of 2026 matched into residency, go to dartgo.org/matchday2026. To learn more or connect with alumni, contact Mae Leonard at 603-646-5313 or Mae.Leonard@dartmouth.edu.



With \$5M Gift, Geisel To Recruit **Two New Early Career Faculty**

The Patricia R. and Douglas L. Sacks Early Career Professorships are a generational investment.

By 2030, approximately 15 professors at the Geisel School of Medicine at Dartmouth are expected to retire. In addition to those retiring, more than 65% of tenured Geisel professors are in the later stages of their careers. This creates an urgent need to develop a strong pipeline of faculty who can support the long-term health of Geisel's teaching and research enterprise.

To help meet that need, a \$5 million gift from Patty P '10 MED P '20 and Doug D '80 P '10 MED P '20 Sacks will endow two early career professorships at Geisel. The Patricia R. and Douglas L. Sacks Early Career Professorships will aim to attract exceptional faculty to Geisel. By offering flexible funding and long-term stability for a five-year term, the professorships will empower holders during a critical career

stage, helping them establish a strong foundation from which to make significant and lasting contributions to Geisel, and to medicine, for years to come.

"A medical school is defined by its people," says Patty Sacks, who chairs the Geisel Board of Advisors. "By investing in early career faculty, we are choosing to invest in the people who make Geisel so special. We look forward to seeing these bright minds build their careers at Geisel, advance health and medicine, and transform new classes of students into compassionate health care leaders."

To learn more go to dartgo.org/sacksgift, or contact Kim Labonte at 603-646-5110 or Kim.Labonte@dartmouth.edu.

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Vitals Magazine explores the most salient topics in human health and highlights advancements from across Dartmouth Health and the Geisel School of Medicine at Dartmouth. Inside these pages, discover how people, programs, and communities are working to ensure that everyone, everywhere can lead their healthiest lives possible.



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