

Gaining Momentum

Steven Leach reflects on his two years as Norris Cotton Cancer Center's Director

by Lara Stahler



It has been two years since Steven D. Leach, MD, joined Dartmouth's Norris Cotton Cancer Center (NCCC) as its new director. Leach, who also holds the Preston T. and Virginia R. Kelsey Distinguished Chair in Cancer, brought with him extensive experience in multidisciplinary clinical care, high-impact research, team science, mentoring, strategic planning, budgeting and fundraising, as well as a clear vision for a highly collaborative, Dartmouth-wide cancer center, and wasted no time setting his plan into action.

Among his achievements since joining Dartmouth are the successful submission of the Core Grant renewal application to maintain NCCC's designation as a National Cancer Institute (NCI) Comprehensive Cancer Center, convening a Cancer Center-wide Research Strategic Plan, fostering integral collaborations between diverse disciplines across Dartmouth and Dartmouth-Hitchcock Health, and fulfilling his declaration to bike the Prouty Ultimate.

Leach reflects on highlights of the past two years and lends insight into what's ahead.



Mark Washburn

Steven D. Leach, MD

Q: THE CANCER CENTER HAS RECENTLY COMPLETED ITS REGULAR REACCREDITATION PROCESS WITH THE NATIONAL CANCER INSTITUTE; CAN YOU DESCRIBE THAT PROCESS AND ITS CHALLENGES?

Leach: That was the most ambitious and massive undertaking I've ever been involved with, much less asked to lead. Submission of a 1,600-page grant application and full-day site visit was the culmination of nearly two years of preparation and rehearsals to propose that our cancer center enter its fifth decade of continuous NCI designation. It was a remarkably fulfilling process to lead and to see come to fruition. We were renewed with flying colors and are set to begin our 41st year as an NCI Comprehensive Cancer Center.

To compare, other preeminent institutions only this year earned the same designation that we received in 1990. The fact that we have held this prestigious status for as long as we have, speaks to our long legacy of excellence in clinical care, research, teaching, and community outreach.

Q: CAN YOU DISCUSS THE STRATEGIC PLAN YOU'VE BEEN DEVELOPING FOR THE CANCER CENTER?

Leach: The 2019 Research Strategic Plan mobilized more than 150 institutional leaders, Cancer Center members, and other stakeholders to critically analyze all of our academic activities. In the plan, we identified four priority areas for investment, all aligned toward our overarching strategic goal of breaking down traditional academic boundaries and accelerating transdisciplinary research across the entirety of Dartmouth College, Geisel, and the Dartmouth-Hitchcock Health system. These priority areas include: 1) Immuno-Oncology—reflecting the revolution of cancer immunotherapy that Dartmouth historically played a huge part in initiating; 2) Engineering Cancer Cures—reflecting the ongoing strength of our partnership with Thayer; 3) Promoting Precision Oncology—reflecting our strengths in revolutionizing personalized oncology and genomic medicine; and 4)

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Prevention, Treatment, and Survivorship in Hard-to-Reach Rural Populations—reflecting outreach activities within our two-state catchment area that serve to improve population health and strengthen our partnership with The Dartmouth Institute for Health Policy and Clinical Practice.

We're going to pursue those four priorities through the activities of our 16 disease-specific clinical oncology groups and four research programs. And we're going to focus these activities through the dual lenses of education and entrepreneurship, the latter as means to accelerate the delivery of our Cancer Center's discoveries to the world.

Q: YOU'VE JUST COMPLETED YOUR THIRD PROUTY. WHAT ARE YOUR IMPRESSIONS OF THE EVENT? ALSO, THE LAST TIME WE SPOKE, YOU WERE PLANNING TO DO THE PROUTY ULTIMATE. HAVE YOU DONE THAT?

Leach: It's been remarkable to complete my third Prouty. My impression is an ever-deepening appreciation for what an amazing event it is in terms of bringing together our communities. This year we had almost 300 Dartmouth undergraduate students there cheering us on, volunteering, and participating as athletes. On the other end, we had the residents of Kendal at Hanover sitting on Chieftain Hill, ringing cow bells with signs that read: "You're over the hill and so are we!" playfully reflecting on their seniority.

This event really reflects a coming-together of town and gown, of college and medical center, of all generations within our Upper Valley community to help our Cancer Center do the good that it does in caring for the patients of northern New England, and serving the world with our scientific discoveries.

I rode the Ultimate for the second year. I completed the full 100 miles on Friday, but my administrative commitments and desire to visit the indoor Prouty at One West (NCCC's inpatient unit) only allowed me to ride 35 miles on Saturday. I did the Ultimate with an asterisk!

Q: HOW ARE YOUR RESEARCH EFFORTS PROGRESSING?

Leach: They are ramping up. Moving here not long before our written reaccreditation submission was due meant I really had to focus on job number one, and put my own research on the back burner. Now that the grant process is successfully in the rearview mirror, I've been able to recruit some talented young people to work in my lab.

My lab has used not just human and mouse tissues and cells, but also zebrafish as a very productive genetic model organism to study human development and disease. I'm really excited by the fact that we're building a new zebrafish facility on campus, and launching a number of new cancer research initiatives related to that.

Q: IN THE TWO YEARS SINCE YOU CAME TO THE UPPER VALLEY, WHAT HAS MOST IMPRESSED YOU ABOUT THE DARTMOUTH COMMUNITY IN YOUR TIME HERE?

Leach: It has become very clear to me that the human scale of Dartmouth provides key opportunities for interaction between diverse groups of researchers and academic disciplines. We have all the talent of a big university but concentrated in a much smaller geographic spread. That means that you run into people spontaneously and end up talking about new ideas. These types of encounters really spark innovative and creative thinking.

We truly are a Dartmouth-wide Cancer Center, integrated across every component of a great liberal arts college, a medical school, an engineering school, a business school, a graduate school, and academic medical center. Connecting 123 members and 19 distinct departments as fluently as we do just doesn't happen at most places.

I'm also deeply impressed by the community's support for the Cancer Center – not only through the Prouty, which raised a record-breaking \$3.7 million this year, but also the generosity of the donors who support so many aspects of our work.

Q: WHAT DO YOU CONSIDER TO BE THE MOST SATISFYING ASPECTS OF YOUR LEADERSHIP ROLE AND YOUR BIGGEST ACCOMPLISHMENTS TO DATE?

Leach: I feel really lucky to be the face of a cancer center where so much incredible work is being done and to be able to tell the stories of the care our nurses and physicians provide and the kind of science that our researchers do. To bring an awareness to a broader audience of all the good that's done here has been really fulfilling.

Also, renewing our NCI Comprehensive Cancer Center status has been a monumental accomplishment. As part of that I was pleased to be able to report significant increases in research funding, clinical trials accrual, and investigator-initiated trial activity since the previous renewal in 2014. This speaks well for the future, as we hope to generate ongoing growth of the vibrant research portfolio our scientists and physicians have already created.

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Finally, I am very proud of our new Dartmouth-Hitchcock Cancer Fellows Program, where we have used clinical revenues to support protected academic time for our junior faculty to pursue cancer-related research. We just named our inaugural cohort of fellows, and it's been a joy to see them implement their ideas for improving cancer treatment and prevention.

Q: YOU'VE TALKED ABOUT THE UNIQUE OPPORTUNITIES THAT THE CANCER CENTER PROVIDES AS A "KEY CONNECTOR" HERE AT DARTMOUTH—IS THERE AN EXAMPLE OR TWO OF THIS THAT STANDS OUT IN YOUR MIND?

Leach: One great partnership has led to the development of a new approach to breast cancer surgery, effectively doubling the chances that a breast tumor will be removed in its entirety at the initial operation while also minimizing the amount of normal breast tissue removed. The invention of the Breast Cancer Locator and formation of the biotech startup CairnSurgical, Inc. was led by Richard Barth, MD, and grew out of our Cancer Center. It involved interactions between surgical oncologists, radiologists, and pathologists for breast imaging and pathology, the technological skills of engineers at Thayer, and the business savvy of folks at Tuck to launch this new company. It's a great illustration of innovators from multiple disciplines coming together.

Another example is our program in immuno-engineering where tumor immunologists, engineers at Thayer, and computer scientists have begun to unravel the signaling circuitry of tumor-fighting immune T cells and how can we improve on that by creating new types of cells and proteins that never evolved in nature. These efforts prove that our Cancer Center provides a vital bridge across disciplines, uniting diverse academic experts.

Q: WHAT ARE SOME OF THE ELEMENTS THAT MAKE THE CANCER CENTER AND THE DARTMOUTH COMMUNITY AN ATTRACTIVE DESTINATION FOR OUTSTANDING YOUNG SCIENTISTS, PHYSICIANS, AND EDUCATORS?

Leach: Our prominence and prestige as one of the country's 51 Comprehensive Cancer Centers and, with that, the resources that we're able to provide to young investigators, physicians, and teachers to help jumpstart their careers. But another key element I think our young faculty finds so attractive is the sense of connection to our community. They get to know our friends and neighbors in the Upper Valley. A big part of that is The Prouty, where our investigators get to meet their supporters face to face. It makes for a feeling of connection in the community and gives their work a sense of purpose. They hear personal stories that help them ground their work in real life.

Beyond that, the cancer center is especially well integrated into its host academic institutions. We catalyze interdisciplinary research across the entirety of Dartmouth and D-HH, generating high-impact, catchment area-relevant discoveries that are practice-changing, paradigm-shifting, and policy-influencing. It's a unique working environment that anyone interested in delivering outstanding cancer care and discovering cures would want to be a part of.



Steve Leach participated in the Prouty Ultimate.

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Q: LOOKING AHEAD, WHAT ARE YOUR GOALS FOR THE CANCER CENTER IN THE COMING YEARS?

Leach: We want to embrace new opportunities in pursuit of areas of science that are only beginning to unfurl. We have a powerful opportunity to capitalize on the new alignment of our clinical and academic missions, which will be vital towards fulfillment of our strategic plan. We want to further expand accrual to therapeutic clinical trials and develop an ever more robust pipeline of NCI-funded clinician scientists. We want to extend our clinical research activities, and to specifically generate new knowledge in implementation science, using our unique geography as a laboratory for the advancement of rural cancer treatment and control. And we want to leverage recent clinical capital investments to generate important knowledge of new therapies such as CAR T-cell immunotherapy and MRI-guided radiation.

This is a remarkable place to take care of folks, teach, learn, discover, and shape the future.

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