New Cancer Center Director Brings Focus on Translating Science into Therapies

Tom Loughran, Jr., MD, became UVA’s fifth Cancer Center Director on August 15. He is internationally recognized for discovering large granular lymphocyte (LGL) leukemia, a rare and hard to diagnose cancer of the blood. His breakthrough didn’t come from years in the lab, but from one seemingly simple act—he noticed something about a patient that everyone else had missed.

In 1982, Loughran was beginning a three-year fellowship in hematology/oncology when a patient with a puzzling history of recurring fevers and infections was referred to the University of Washington. He examined her blood smear and noticed that almost all of her white blood cells were unusually large and had the structure of LGL. Chromosomal studies subsequently showed that these LGL were clonal—they met the definition of leukemia.

Loughran checked through five years of hospital records and discovered other patients that fit the same criteria but were never correctly diagnosed. This experience drove him into the lab to study the disease, beginning a lifetime of combining clinical care with basic and translational research.

Welcoming a New Director to UVA
His discovery of the disease based on the clinical observations of the initial three patients was published in the *Annals of Internal Medicine* in 1985.

Today, Loughran sees patients from around the world who come to him to confirm their diagnosis and find the best course of treatment. His discoveries about the underlying cause of LGL may one day lead to the development of targeted drugs to inhibit the genetic mutations that help give rise to the disease.

“Before I was a researcher I was a clinician first,” he says. “A clinician understands disease from the patient’s point of view. This integration of patient care with laboratory research was the foundation of my career and changed the way I approach my work.”

**A Vision for the Future of Cancer Care in Virginia**

Loughran inherits a center with a significant history of accomplishments in both basic science research—investigation of cancer at the cellular and molecular level—and patient care.

“I am impressed by the passion and skill of the researchers and clinicians at UVA Cancer Center,” he says. “I’m excited to work with the team at UVA to support their work in discovering breakthrough treatments and providing exceptional, highly-skilled care to patients from Virginia and beyond.”

Loughran hopes to build upon the Cancer Center’s strong base to reach its goal of earning NCI designation as a Comprehensive Cancer Center. There are 41 Comprehensive Cancer Centers in the United States, but none in Virginia.

In order to meet this goal, Loughran and his new leadership team are developing a set of priorities for the Cancer Center focused on expanding efforts in cancer prevention and control, and increasing the number of clinical trials offered at UVA. He hopes to attract several star physicians, as well as clinical and basic science researchers. It’s the first step in integrating excellent patient care with a thriving research enterprise.

“Clinical trials are the final proving ground for new cancer treatments, and sometimes a patient’s last hope,” Loughran explains. “It’s imperative that Virginians have access to the most promising clinical trials, close to home.”

Loughran hopes to strengthen UVA’s translational research program, moving discoveries made in our labs to the patient’s bedside. He brings with him a $10 million NCI-funded program grant that will leverage the talents of investigators from across disciplines to develop a completely novel nanotechnology platform for delivering therapeutic drugs for acute myeloid leukemia (AML). AML has a poor prognosis, and no new effective therapies have been discovered for decades. The new team hopes to start clinical trials next year.

At the same time, UVA Cancer Center will expand its public outreach, providing more screenings and prevention education, in essence “…building a coalition to fight cancer in Virginia with UVA at the center,” he explains. The center will recruit a population researcher to help identify, and then break down, barriers to treatments for different populations in Virginia.

Loughran envisions a very bright future for UVA Cancer Center. “If we capitalize on our existing strengths, build programs with international leaders, and develop unique, more effective ways to treat our patients, we will be able to help more and more people and become a destination point for patients from across Virginia and the U.S.”
THANKS to a tremendous outpouring of support from our community, the 2013 Charlottesville Women’s Four Miler raised $370,000 for breast cancer care and research at UVA. This is the largest amount raised in the race’s 31-year history. Runners worked hard to raise funds for the Four Miler and the Women’s Four Miler Training Program. Community businesses supported the cause, and hundreds of volunteers donated their time to make race day a success. Thanks to everyone for a fantastic year!

THE WOMEN’S FOUR MILER BREAKS RECORD

IN HER OWN WORDS

Better Together

Four Miler Unites Families and Friends

For Christiana Brenin, MD, a medical oncologist in UVA Cancer Center’s Breast Care Program, what began as a commitment to her patients has grown to become a joyful family occasion as well.

“Initially, I heard about the Four Miler from a patient,” says Brenin. “She was undergoing chemotherapy at the time, but still planned to take part in the Four Miler. When I heard that, I knew that I had to participate.”

Soon, Brenin had her two teenage daughters, Alexandra and Jessika, running with her. Not long after, her 84-year-old mother, Fotini Menemenlis, came too. In 2011, the run had a special poignancy, when Menemenlis was between surgeries related to her own treatment for breast cancer.

By then, the Four Miler had become a cherished tradition for Brenin, one that continues every year, and offers a special opportunity for the women in her family to be active together.

“My mother makes the pilgrimage from Montreal every year to participate,” says Brenin. “It’s a great bonding event between her and my daughters. My sister and her daughter from New York come too. We are all part of this glorious event on a beautiful morning, which is even better because we are sharing it together. The Motivational Mile is incredible. You feel like everyone on those posters is cheering you on. It’s exhilarating when you finish and so inspirational looking around and seeing all those women getting fit and supporting each other.”

“I see a lot of my patients and former patients there—and they are like an extended family,” adds Brenin. “Breast cancer has a long continuity of care, so you get to know your patients well. You bond with them and feel like you’re part of their families too.”

Brenin is part of a growing trend of families, friends, work groups, churches, and other organizations who tackle the Four Miler in groups or teams.

And, while it’s the women in Brenin’s family who run or walk, other family members and friends get involved by cheering them on and supporting them with sponsorship pledges. For almost everyone involved, it’s that shared experience that means the most.
At UVA, John Bushweller, PhD, and his team have identified a unique class of inhibitors that may block abnormal cell growth in acute myeloid leukemia. What’s more, Bushweller and his team quickly realized their discovery could be a paradigm for treating other forms of cancer, including ovarian, colon, and lung.

“Research in blood cancers has often paved the way for new treatments for cancers with solid tumors,” Bushweller explains. “The target we have identified has never been used to treat lung cancer, but our research strongly suggests it could have a substantial effect on our ability to kill lung cancer cells.”

Bushweller’s lab has developed compounds that alter the binding of one protein to another, namely CBFβ to RUNX proteins. As RUNX proteins appear to play a key role in lung cancer, this is potentially a completely new approach to treat the disease.

Bushweller turned to his colleague, lung cancer clinician and researcher, Thao Dang, MD, to help develop a pilot project to test the new compound for effectiveness on a panel of lung cancer cell lines.

“Lung cancer is the number one killer of men and women in the United States,” Dang explains. “Because the cancer is often advanced before a person starts to notice symptoms, the five-year survival rate is around 16%. It’s clear that existing treatments for lung cancer have limited effectiveness. We believe this new compound may have the ability to kill lung cancer cells without damaging healthy cells, leading to an effective therapeutic with fewer side effects for patients.”