

Bold Ideas Accelerate Breast Cancer Research

Your support fuels groundbreaking discoveries

Fred Hutch Cancer Center's multidisciplinary breast oncology program brings together Fred Hutch and UW Medicine experts to drive progress along the full spectrum of breast cancer research and care. With your support, we are accelerating the pace of breakthroughs in breast cancer prevention, detection, treatment, and survivorship.

Last fall, we welcomed a new program leader: **Heather Parsons, MD, MPH**, associate professor at Fred Hutch and UW Medicine and holder of the Maudslien Endowed Chair in Breast Cancer Precision Oncology Research at Fred Hutch. Dr. Parsons, who joined us from Dana-Farber Cancer Center in Boston, is an expert in the emerging field of liquid biopsies — blood tests that can detect and monitor cancer. And her ethos of innovation comes through in her leadership. She will empower our researchers and clinicians to pursue bold ideas that fuel game-changing discoveries in research and care.

In 2025, with help from supporters like you, our researchers continued to make extraordinary breakthroughs. From leading advances in imaging technologies that could expand clinical trial access to identifying new vulnerabilities in recurrent tumor cells, our scientists are transforming what's possible to improve outcomes for patients. **Thank you.**

Measuring the 'unmeasurable'

When breast cancer spreads, it most often travels to the bones. Unfortunately, doctors have long struggled with a major problem: There has not been a reliable way to tell whether treatments are working when cancer is mainly in the bones. This can result in patients with bone metastases continuing ineffective treatments longer than necessary and also often makes them ineligible to participate in clinical trials.

Jennifer Specht, MD, is working to change that by leading a multicenter clinical trial testing a new method for predicting treatment effectiveness — including for patients with bone metastases. Dr. Specht is a breast oncologist and professor at Fred Hutch and UW Medicine and Clinical Research Director of Breast Oncology at UW Medicine, where she holds the Jill D. Bennett Endowed Professorship in Breast Cancer.

The trial followed 138 patients over three to five years and has shown that with FDG-PET/CT imaging technology, clinicians can predict progression-free survival for patients with bone-dominant metastatic breast cancer after just 12 weeks.



Dr. Jennifer Specht

Beyond
50

For more than 50 years, Fred Hutch has looked beyond what's possible today to a new era of discovery. With your partnership, our Campaign for Fred Hutch is transforming the pace and scale of innovation so we can redefine cancer and infectious disease for generations to come.

Fred Hutch is an independent, nonprofit organization that also serves as the cancer program for UW Medicine. Fred Hutch is proud to raise funds that fuel the adult oncology program on behalf of both Fred Hutch and UW Medicine.

UW Medicine

The scans measure how active cancer cells are, rather than just showing their shape or size.

Traditional imaging tools like CT scans, MRIs, and bone scans can detect cancer in the bones but do not reliably show whether treatments are helping, which is why bone tumors are often considered “unmeasurable.”

Dr. Specht’s discovery could fill this gap and provide patients access to clinical trials offering new experimental treatments after all other options have been exhausted. In addition, clinicians could soon use this technology to guide treatment decisions and monitor effectiveness more quickly than what is possible today to help patients receive better and more timely care.

Vulnerabilities in recurrent cancer cells open pathways to new treatments



Dr. James Alvarez

Recurrent breast cancers tend to be more treatment-resistant than primary cancers, meaning existing therapies are less likely to work. **James Alvarez, PhD**, associate professor at Fred Hutch, investigates vulnerabilities in recurrent breast tumor cells that could lead to more effective treatments.

Recently, he discovered that in cases of relapsed cancer, HER2-driven tumor cells rely heavily on an enzyme called dihydroorotate dehydrogenase (DHODH) to grow and survive — making it a promising target for new therapies.

Using CRISPR technology, Dr. Alvarez’s team examined 421 metabolic genes in primary and recurrent HER2-driven tumor cells. Though the primary and recurrent cancers are genetically the same, the team found that they rely on different survival strategies. Primary tumor cells can form the building blocks for DNA replication by recycling unused parts of other nucleotides, a process called nucleotide salvage. Recurrent tumor cells, however, cannot — they must make them from scratch, a process dependent on DHODH.

In preclinical models, Dr. Alvarez found that DHODH inhibitors stopped the growth of recurrent tumor cells completely, pointing to DHODH as a promising target for more effective treatments in recurrent HER2-driven breast cancers.

Dr. Alvarez is planning additional studies to examine how these mechanisms work in tumors in patients. His discoveries could pave the way for transforming outcomes for patients with recurrent breast cancers.



“I’m excited to be leading this group of incredible researchers and doctors to help reduce the burden of breast cancer in our patients and in the world.”

— Dr. Heather Parsons

Join us for a Discovery Dialogue on Wednesday, May 13, to learn more about recent and upcoming breakthroughs in breast cancer research at Fred Hutch.

Register by Friday, May 1.

Contact Briana Voigt at bvoigt2@fredhutch.org or 206-667-3733.

Thank you for supporting discoveries like these. To learn more about how your generosity fuels new advances in breast cancer research at Fred Hutch, **please contact us at 206.667.4399 or philanthropy@fredhutch.org.**