OPENING THE DOOR

to a Deeper Understanding of Cancer’s Roots

The HCI lab headed by Bradley R. Cairns, PhD, developed a new technique to analyze RNA methylation, a process that helps ensure correct construction of the proteins inside cells. They investigated a set of enzymes that conduct RNA methylation, which when mutated are connected to cancer, infertility, and certain genetic disorders in humans. In the past, technical limitations greatly restricted understanding of the enzyme’s effects. The new method, published in the journal Nature Biotechnology, is a “beautiful tool” that opens the door into a new, rich area of cancer epigenetics research.

Gretchen Oakley, MD

Your Grandmother Had Thyroid Cancer—Are You at Risk?

Researchers at the University of Utah and HCI set out to find the answer to that question. They discovered an increased risk for papillary thyroid cancer in first-degree relatives of patients with the cancer—a study possible only by using a resource like the Utah Population Database, a collection of genealogies linked with medical records and cancer registries. Learn more about the research Gretchen Oakley, MD, Karen Curtin, PhD, Jason Hunt, MD, and their study colleagues published in the Journal of the American Medical Association: Oncology—Head and Neck Surgery.

Joshua Schiffman, MD

PERSONALIZED MEDICINE NATIONWIDE

Treatment of Melanoma with a Hijacked Virus

The science behind this Phase III clinical trial led by Robert Andtbacka, MD, CM, sounds almost like a video game—mothers hijack the virus that causes cold sores and change its genome so it attacks only melanoma cells. Inside the body, the virus replicates, breaks up the melanoma cells, and trains the patient’s immune system to chase down and deactivate melanoma-related proteins wherever they may be. It’s called oncolytic immunotherapy, and it hints at what’s possible for melanoma patients—a fighting chance at overcoming the disease and living longer.

Matthew VanBrocklin, PhD

A breast cancer test that shows subtypes of the disease, called the PAM50 classifier, received FDA approval and is now available to patients nationwide. Using genomics research led by Philip Bernard, MD, HCI investigator and associate professor in the Department of Pathology at the University of Utah, the test provides a risk of recurrence score in breast cancer patients, which will help doctors tailor treatment to each person’s particular disease.

Philip Bernard, MD

Achieving What’s Possible

Generous Donations Make New Research Building Happen

Year after year, HCI makes major strides in cancer research even though funding for cancer research is on the decline across the country. Generous private donations to Huntsman Cancer Foundation have made it possible for HCI not only to continue groundbreaking research, but also to build on it. Read about the Primary Children’s and Families’ Cancer Research Center, the $100 million research building planned for HCI.

Robert Andtbacka, MD, CM

New Frontiers in Melanoma Research

Laboratory research on the genes that power cancer used to depend on cell cultures or knockout mice. But cells cultured on plastic don’t behave like cells in living organisms and, using standard methods, it takes about a year to develop knockout mice for each different gene mutation. Researchers in HCI’s VanBrocklin Lab developed a unique mouse model that makes studying genetic factors in cancers within the living organism much quicker and more flexible. In 2013, they were awarded a five-year National Cancer Institute grant to study the role of a gene called o-KIT in melanoma using their mouse model.

Bradley R. Cairns, PhD

Falling Through the Cracks: What Current Colon Cancer Screening Guidelines Are Missing

In the largest study of its kind, researchers from HCI, including N. Jewel Samaddar, MD, found that up to 10% of colorectal cancers may be missed when current screening guidelines are followed by people with a family history of colon polyps that lead to colorectal cancer. If your dad, aunt, or even great-grandpa had colorectal cancer, this means you may need more screening for the disease than you thought. Results appeared in the October 2013 issue of Cancer.

N. Jewel Samaddar, MD

Overusing Cervical Cancer Screenings: Millions of Women Get Pap Tests When They Don’t Need To

A lot can change in 10 years. But HCI researchers found that isn’t the case when it comes to overuse of the Pap test—the standard method to detect precancerous cervical changes in women. Despite many updates in national health organizations’ recommendations, close to 14 million women got unnecessary Pap tests. Find out why groups of women don’t apply to, along with current cervical cancer screening recommendations from the Centers for Disease Control and Prevention.

Udana Kepka, PhD

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Udana Kepka, PhD

Personalized Medicine Nationwide

We live in an era where cancer research has never been better. Yet, according to the National Cancer Institute, 75% of the public feels overloaded by the amount of cancer information available. Jakob Jensen, PhD, conducted a study that found when people feel cancer information overload, they are less likely to participate in cancer screening and prevention behavior. Learn more about cancer misconceptions and possibilities for turning them around.

Jakob Jensen, PhD