NOT JUST TREATING BREAST CANCER,

BUT PREVENTING IT.

In 1993, our understanding of breast cancer was promising, but inadequate. *"Think pink"* was a new concept that hadn't yet entered our collective consciousness. Screening methods were limited, with few treatment options and little understanding of prevention strategies.

Today, breast cancer diagnosis is more accurate than ever and patients have multiple treatment options backed by decades of research. Prevention is better understood, and October is well-known as breast cancer awareness month.

That progress was made possible by exhaustive research and years of fundraising to support critical studies into every aspect of breast cancer prevention, diagnosis, treatment, survivorship and metastasis. Since its founding in 1993, the Breast Cancer Research Foundation (BCRF) has been on the front lines of supporting that research.

"BCRF scientists have been a part of every major breakthrough in breast cancer research in the last two decades," says Dr. Marc Hurlbert, Chief Mission Officer at BCRF. *"For example, our scientists have unraveled the mysteries of breast cancer – we know it's not one disease, that there are many different subtypes of breast cancer."*

BCRF's mission is to prevent and cure breast cancer by advancing the world's most promising research. To support BCRF and its groundbreaking work, GE Healthcare will donate $1 for every purchase of its Whatman products in October, with a minimum donation of $25,000 and a goal of $75,000. This donation is part of the $59.5 million BCRF will distribute to more than 275 scientists across the United States and 15 countries between 2017-2018. New grants will be announced October 1, 2017 .

LIFE SCIENCES DRIVES BREAST CANCER RESEARCH

Whatman products range from filter papers and membranes to innovative technologies for DNA sample collection and preparation. They are used by life sciences labs throughout the world, and in breast cancer research they help scientists discover biomarkers for early detection and treatment – two areas critical to BCRF's mission. For example, BCRF has supported research into diagnostic tests that help doctors determine whether a patient needs chemotherapy or not.

"Not every patient needs chemotherapy anymore," Dr. Hurlbert says. *"Some women have breast cancer that's driven by the hormone estrogen and other favorable characteristics that make them at a low risk of disease recurrence, and they can be treated with anti-hormone therapy instead of chemotherapy."*

Life sciences enables and accelerates molecular and precision medicine, helping researchers discover, make and use new medicines. With this information, doctors can deliver more precise diagnoses and treatments to improve patient outcomes and address diseases like breast cancer.

BCRF-funded scientists have discovered how to differentiate types of breast cancer and developed new drugs that target those specific types, some recently approved and others which are now waiting for FDA approval. Dr. Hurlbert says these scientific discoveries will play a large role in supporting breast cancer research in the future.

"I think life sciences research is critical to figuring out the basics of how healthy cells become cancer and how they spread," says Dr. Hurlbert. *"I think that's how life sciences research will continue to fuel advances."*

He also says that life sciences research could help scientists develop a simple blood test to check for cancer at its earliest stage and allow doctors to customize treatment for that type of cancer.

"It's exciting to think we could measure cancer cells and cancer DNA in blood," he says. *"We would be able to measure cancer in the blood, then monitor the cancer in blood to manage treatment. So basically you get a real-time 'liquid biopsy.' It looks like a promising area of research for the future."*

PRECISION PREVENTION

Dr. Hurlbert says one of the most promising areas of research is understanding how breast cancer metastasizes – when it spreads from the breast to other parts of the body, such as the brain, liver or lungs, and becomes more dangerous. This could have far-reaching consequences for not just breast cancer research, but all cancer research.

"We're trying to sequence the metastatic cancer from 1,000 patients to see if we can decipher what's enabling those cells to spread to other parts of the body," he says. *"And then we can understand that process – which might be a real way to end not only breast cancer, but likely all cancers."*

But the ultimate goal is to prevent cancer altogether, before it makes someone sick.

"Identifying the key risk factors of the disease could help us develop what we call 'precision prevention.' In a certain person, we could know that they're at risk and could prevent cancer before it even starts," he says. *"Ultimately, how we're going to get rid of this disease is if we can prevent it in the first place."*

Until then, the fight isn't over. In 2014, 236,968 women and 2,141 men in the United States were diagnosed with breast cancer and 41,211 women and 465 men in the United States died from breast cancer.

"In breast cancer, we've seen the mortality rate drop 38% in the last twenty years. And we are making progress at treating the disease," says Dr. Hurlbert. *"Unfortunately, there's still more than 40,000 women and men dying from the disease every year. We're not going to stop what we're doing until there are no deaths from breast cancer."*

BCRF BREAST CANCER RESEARCH FOUNDATION

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