Investigator Hall of Fame

Susan G. Komen for the Cure®

C. Kent Osborne, M.D.

Professor of Medicine and Molecular and Cellular Biology
Director, Lester and Sue Smith Breast Center and the Dan L. Duncan Cancer Center
at the Baylor College of Medicine, Houston, Texas

"I wouldn't be a bit surprised that in the next ten years breast cancer mortality will be further reduced and it may not be anywhere near the public health hazard that it still is today." *— Dr. Osborne*

C. Kent Osborne, M.D.'s tireless endeavor to battle breast cancer began with a summer internship in a hematologist's office in the early 1970's. "It seemed to me, at that time, we were actually going to be able to do something about breast cancer," Dr. Osborne remembers. Forty years later, Dr. Osborne and others have done something about breast cancer with research that has helped extend the lives of thousands of women and men and improve the quality of life for millions.

About 65 percent of breast cancers grow when estrogen attaches to receptors inside the nucleus of cells. Dr. Osborne's research helped develop clinical tests that measure estrogen receptors in breast tumors and these tests are now used to tailor individual treatments for breast cancer patients.

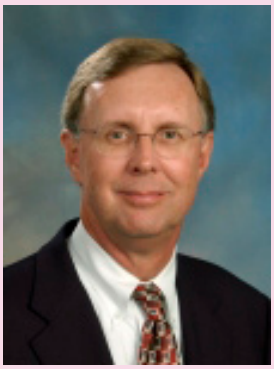
Dr. Osborne also led pivotal clinical trials testing new drug therapies, including studies that tamoxifen inhibits breast cancer cell growth by blocking estrogen receptors and more recently testing drugs in breast cancers that have become resistant to tamoxifen. He explains that "in cases where tamoxifen is no longer effective, the drug is somehow interpreted by the cell as a factor that stimulates growth rather than inhibiting it."

Tumor cells that become resistant to treatment find ways to get around the pathways blocked by the treatment and spread throughout the body. When we understand these processes, new avenues to treatment can be developed and Osborne's laboratory is doing just that; testing new approaches that attack cancer cells using functions they already have, for example, by fusing a poison to estrogen in a way that targets the cancer cells but spares normal cells. Other new approaches try to block all the pathways used by tumors to continue to grow. "We're seeing very dramatic responses in very large tumors, suggesting to me that this is going to turn out to be a new strategy that might become standard in some patients" Osborne said.

"I think Komen has been a leader in funding things that might be difficult to fund otherwise, and if we didn't have Komen funding, there would be trainees who would not become our future scientists and physicians and there would be many research ideas that would go without funding."
— Dr. Osborne

Osborne was also the first to show that epidermal growth factor (EGF) stimulates breast cancer growth, a discovery that has lead to effective new targeted therapies for breast cancers that do not respond to hormone therapies, particularly advanced breast cancers such as HER2 breast cancers.

C. Kent Osborne, M.D. is making an Impact.



Professional Accolades

1972 – Pfizer Award to the Outstanding Senior Medical Student
1980 – Taubman Memorial Lecture and Award
1992 – Bruel Memorial Award and Lecture, Cleveland Clinic
1994 – Susan G. Komen Breast Cancer Award for Scientific Distinction
1994 - Belsky Memorial Award and Lecture, NYU
1995 – 1st Annual Charles A. Moertel Memorial Lectureship For Dedication to Cancer Research, Mayo Clinic
1995 – Susan G. Komen Brinker International Award for Breast Cancer Research

Komen Funded Research

1993 - $35,000 - Mechanisms of Tamoxifen Resistance
1994 - $70,000 - Mechanisms of Tamoxifen Resistance
1996 - $105,000 - Mechanisms of Tamoxifen Resistance
2004 - $135,000 - The Role of Growth Factors/Stress Signaling Pathways in Developing Endocrine Resistance of Breast Cancer
2009 - $180,000 - Stress Kinase Signaling Pathways in the Development of Hormone Resistant Breast Cancer