

## Breast Cancer in Florida: Research and Awareness

The Bankhead-Coley Cancer Research Program represents the state's focused efforts to accelerate cutting-edge cancer research in Florida. Breast cancer is one of eleven types of cancer investigated by Program researchers and is a focus of public health awareness, especially during October. In fact, October 2009 marks the 25<sup>th</sup> Anniversary of National Breast Cancer Awareness Month.

According to the National Cancer Institute (NCI), the average yearly occurrence of breast cancer among Florida women from 2001-2005 was 12,597 cases per year. The average number of deaths per year in Florida for the same period was 2,654. Florida ranks second to California in prevalence projections according to the NCI. The good news, though, is that the breast cancer death rate has been sharply declining in Florida since 1990; many health advocates cite early detection and better treatment as the reason for the decline.

### **Bankhead-Coley Program: Research Highlights**

Since 2007, the Bankhead Coley Cancer Research Biomedical Program has funded thirty breast cancer projects. Highlights from a few of them are featured here, followed by one Floridian's encounter with this disease.

**Dr. Kevin Brown**, University of Florida, 2009 Bridge Grant, is using cutting-edge molecular genetics approaches to study molecular events that occur in DNA structures in both cultured breast cancer cells and mammary tumors. Dr. Brown's lab plans to study genes that are silenced in breast cancer as well as a drug to reverse that silencing. Understanding the changes in DNA structure holds promise for providing patients with better prognostic and diagnostic cancer markers.

**Dr. Quentin Felty**, Florida International University, 2009 New Investigator Research Grant, is studying persistent organic pollutants such as polychlorinated biphenyls (PCBs) that have been identified in human adipose tissue, blood, and milk. Since these chemicals have been shown to mimic the hormone estrogen, Dr. Felty's team is investigating the role of PCBs in estrogen-dependent breast cancer and tumor growth. This project uses a highly innovative, three-dimensional multicellular model grown in a proprietary biomatrix called HuBiogel™. Most studies performed outside a living organism (or in vitro) rely on a single cell type. However, this model uses a combination of cell types, simulating more real-life conditions. By identifying the factors at play, his work could help scientists understand the progression of breast cancer more clearly and identify women who might be likely to have chemical-driven tumors.

**Dr. Alexander Ishov**, University of Florida, 2007 Bridge Grant, is developing prognostic tools for breast cancer patients that can predict their response to taxanes, among the most powerful drugs for breast cancer treatment. A large number of patients are resistant to this therapy for unknown reasons. A tool to identify which patients are resistant to taxanes will facilitate more effective selection of patient therapies and add to understanding the mechanisms of breast cancer progression.

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## Breast Cancer in Florida: Patient Perspective

*The following story illustrates the value of research in improving patient survival rates.*

### **Glenna DiPiero, Cancer Survivor**

Glenna knew the routine. This was her sixth mammogram after all. Two weeks after the test, she would receive a letter from the doctor's office that everything was fine. However, not so this time. In three day's time, she received a call noting "suspicious" results.

"I thought this can't be. I have no symptoms; I feel great. There is no family history at all. . . . Your whole world changes. . . . Telling my children, two teenagers, was tough. I had just lost my sister-in-law to cancer. That's all my youngest could think of . . ."

"My cancer was caught very early. Also, it was a non-invasive cancer type."

Glenna had a lumpectomy, a surgery to remove the cancer, and then received two doses of radiation for five days at St. Vincent's Medical Center, Jacksonville.

"Due to its location and containment as well as my age, I was able to receive a treatment called MammoSite® 5-Day Targeted Radiation Therapy. It works through a small balloon attached to a tube. I received 10 radiation treatments in a week's time—two times a day. I was wiped out from it, but kept working and slept the rest of the time."

Although Glenna has a very positive prognosis, no one walks away from cancer unchanged. "I'm doing cancer walks and am a team captain. I have done cancer walks before because I always had an interest, but now it is a personal investment. I just want more and more research."

"I have a different perspective on life. I always knew that life is short. I have kids at home and things I want to do in life. Now I'm just trying to take advantage of it and spread awareness for other people so they are not afraid to get a mammogram."

She also joined a support group, a very positive experience for her. Group members chided Glenna for not asking them for help during treatments. "I thought I could do it myself and I'm not a person that likes to ask for help. But I believe these women; they would have come. I know I do not need to do this by myself—that is a change. They offered to go to my next mammogram with me." It is an offer Glenna will not refuse.