

Young Women's Breast Cancer Translational Program  
at the  
University of Colorado Cancer Center  
and  
Dianne O'Conner Thompson Breast Center

***Program Mission:** To provide comprehensive care addressing the unique challenges of young women's breast cancer while simultaneously advancing the understanding of the biologic mechanisms driving prognosis and outcomes, with special emphasis on pregnancy-associated breast cancer*

## Young Women's Breast Cancer

In 2005, the US alone was estimated to have 11,110 breast cancer cases identified in women under 40 with a concomitant 1,110 deaths. Statistics from similar countries world-wide demonstrate nearly identical rates of breast cancer incidence and death in young women. Moreover, despite the recent reduction in total incidence of breast cancer, mostly attributable to women over age 50, the annual incidence in the under 40 age range is not decreasing and the absolute number of affected women herein is increasing.

This population reflects the dominant child-bearing portion of humanity. Pregnancy-associated breast cancer is more than cases diagnosed during pregnancy. Cancers diagnosed in young mothers after pregnancy

but within up to 6 years from birth are more aggressive and deadly than those in women without or greater than a decade from childbirth. PABC is not a rare event or niche of breast cancer, but a significant and deadly subset of the disease that may, in fact, be increasing due to cultural shifts regarding child-bearing choices. In 2006, when 4.3 million women experienced live births, twenty-five thousand of these women will be diagnosed with invasive breast cancer and two-thousand may die from their disease within two years of giving birth. Our research is providing enhanced insight into this subset of young women's breast cancer, allowing it to progress as an important focus for goals of prevention, therapeutics, and survivorship interventions in the future.

## **The YWBCTP Team**

### **Directors**

Virginia F. Borges, MD,  
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### **Researchers:**

Pat Bell, HT (ASCP)  
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### **Clinical Members:**

Tina Finlayson, MD  
Anthony Elias, MD  
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## **The Research**

The Young Women's Breast Cancer Translational Research team is focused on identifying why young women's and pregnancy-associated breast cancer are more aggressive. We want to identify unique attributes of these cancers that we can use as targets for the development of effective therapies. These therapies will eliminate the increased risk of metastasis from these cancers and also prevent pregnancy associated breast cancers from arising. We are pursuing the role of normal pregnancy-induced immune suppression and post-breast feeding induced inflammation as mechanisms that cancer cells can use to become more virulent. We have shown for the first time in humans that the post-lactation weaning breast has increased inflammation that could be tumor promoting. We are conducting a clinical trial of fish oil and celecoxib (Celebrex™) in women with newly diagnosed breast cancer to study what impact these drugs have on changing the immune suppression and inflammation with the goal of increasing the ability of the immune system to eliminate the cancer. We are collecting samples from patients treated at our institution and in the local Denver area, as well as scouring the world for samples of young women's breast cancer and pregnancy associated breast cancer to include in our studies. We are focused on methods to determine the immune system: cancer: young woman interaction and how we can best alter the interaction to ensure the immune system: young woman win the struggle.

## **The Young Women's Breast Cancer Clinic**

Our clinical faculty are experts in the unique challenges that face young women undergoing diagnosis and treatment for breast cancer. We offer the most up to date breast imaging, including digital mammograms and MRIs, as well as minimally invasive diagnostic techniques. Our nurse navigator helps ensure ease of transit from diagnosis to medical consultations, and we provide comprehensive multidisciplinary unified initial consultations to minimize the stress and time required for thorough evaluation and recommendations. We routinely offer cutting edge breast cancer therapy to

women co-diagnosed with breast cancer and pregnancy, to maintain both excellent outcomes for the mother and safety for the developing baby. Our patients are extensively counseled on what they can do for themselves in managing the rigors of treatment and the often confusing and difficult road of young women's breast cancer survivorship. We work in close collaboration with our colleagues in Ob/GYN, Hereditary Cancer Clinic, gynecologic oncology, infertility, the Center for Integrated Medicine and with each woman's primary care providers. Our Survivorship Clinic provides consultation for women ending their active therapy phase of breast cancer. We tailor the treatment and support network to the needs of each individual. Our social workers are trained in the unique challenges of young women's breast cancer, including resources for the significant others and children. We offer an extensive list of clinical trials to ensure our patients have access to the cutting edge of breast cancer therapy at all stages of diagnosis and treatment.