

# Scientific Progress Report

Summary of Find the Cause Breast Cancer Foundation Consortium

*September 2015 - August 2016*

What follows is a summary of the “Investing In Prevention” Lab Consortium’s recent progress report to the Find the Cause Breast Cancer Foundation, the complete copy of which can be found on the Foundation’s website, [www.FindtheCauseBFC.org](http://www.FindtheCauseBFC.org)

In the world of medical research, results are measured in “baby steps.” One of the Consortium’s primary goals is to expand public awareness of cancer-causing chemicals through published manuscripts in high profile scientific journals and through presentations to international scientific associations, government agencies and funding organizations.

Since the Consortium was organized in mid-2014, these baby steps have been accomplished as follows:

1. 19 full-length, peer reviewed manuscripts directly related to our funding have been published by our scientists specifically acknowledging the support of Find the Cause.
2. 16 Abstracts, acknowledging Find the Cause, were presented at national and international conferences.
3. 13 by-invitation lectures, seminars, and presentations were delivered, all acknowledging Find the Cause, with two more scheduled this Fall.

Because of these steps, the Consortium scientists are more convinced than ever that breast cancer prevention is a realistic goal. Using multiple human and animal models the Consortium has advanced their understanding of the molecular mechanisms behind breast cancer and the means through which environmental agents contribute to both the incidence and severity of human breast cancer.

As you recall, each scientist and lab has a specific focus that compliments the work of the other consortium members. The following is a summary of progress made in each lab.

## Dr. Sherr’s

*lab has demonstrated how the AHR (an environmental chemical receptor in the breast cell) induces the development of cancer stem cells in both breast and oral cancers, which invade tissues and migrate to the brain. They have also discovered that the AHR can be activated, causing cancer, by our own body’s bacteria (our “microbiome”) which has been altered by exposure to environmental chemicals.*

## Dr. Sonenshein’s

*lab has identified a unique signaling pathway that promotes the migration and metastasis of breast cancer. Further, they have developed a technology that detects residual breast cancer cells circulating in human blood and tells scientists what chemicals the human was exposed to.*

## Dr. Monti’s

*computational biology lab has added several hundred suspected carcinogens to its high-throughput, genomic cancer-causing chemical predictive model. Since it’s initial development two years ago, this model has a predictability success rate approaching 85%. Dr. Monti is presenting his work to the National Institutes of Health in Bethesda in September.*

## Dr. Kupperwasser’s

*lab has generated preliminary data which indicates that estrogen-mimicking chemicals dramatically alter the normal development path of human breast cells. This finding suggests that early exposure to these chemicals may cause healthy cells to transform into full blown malignancies.*

**Very exciting work for a short two-year period!**