

Press Release

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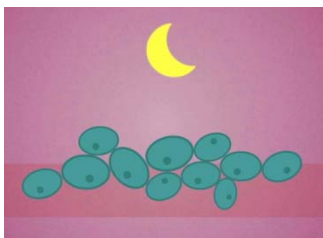


New Video and Comics Explore Link Between Breast Cancer & Toxic Exposures

Now Available: *The Breast Biologues: A Biology Dialogue about Breast Cancer and the Environment*

Aside from non-melanoma skin cancer, breast cancer is the most common form of cancer in women. Researchers at the Bay Area Breast Cancer and Environmental Research Center, based at the University of California, San Francisco, are hard at work seeking answers to its root causes. This basic science research is vital in the fight against this often fatal disease and a new video developed by UCSF, Lawrence Berkeley National Lab and Zero Breast Cancer, premiering on University of California Television (UCTV) on Monday, March 28, 2011, illuminate these important efforts.

Breast cells -- normal and otherwise -- come to life in a new video titled *The Breast Biologues: A Biology Dialogue about Breast Cancer and the Environment*. The engaging 15-minute video uses stylish animation, time-lapse microscopic images and narration by actor Peter Coyote to tell a story of scientific discovery that is relevant, timely and actionable.



The video answers questions such as “how does a normal breast develop?” and “what causes a normal cell to turn cancerous?” with clever visuals and accessible language. It has also been made into a comic book, available in both English and Spanish. It was produced by the Bay Area Breast Cancer and the Environment Research Center (BABCERC).

We know that a normal cell doesn't just turn into a cancer cell overnight.

Both the comics and the 15-minute video are at their most unique when discussing environmental influences -- specifically, **how exposures to suspected cancer-causing chemicals early in life might influence future breast cancer risk.**

UCTV will premiere the program on March 28 at 7:30pm (all times PDT). Broadcast schedules, online video and more are available at: <http://uctv.tv/search-details.aspx?showID=20673>. *The Breast Biologues* video, comic

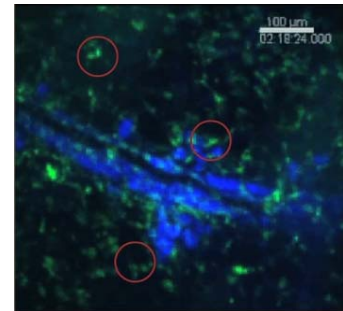
books, and an order form to request copies of the materials can also be accessed on the Center's website at <http://bayarea.bccrc.org/cotcpubs>.

Community health researcher Barbara Brenner of the Mount Sinai School of Medicine said "Fabulous material...our focus up until now in the Breast Cancer and the Environment Research Program has been the development of educational materials for our research participants and families, but not for the broader community. Your work gives us a jump start to engage and inform the communities we serve about the relationships between the environment and health.

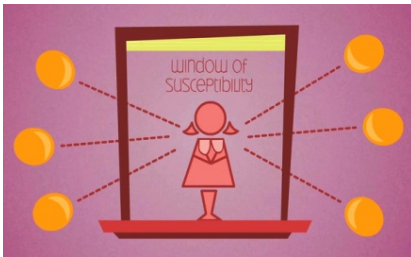
The Breast Biologues is the direct result of research by scientists at two Bay Area institutions, UCSF and Lawrence Berkeley National Lab, who have collaborated over seven years in the Center. As leader of the Center's community outreach project, ZBC is charged with integrating the community's interests and concerns into the research agenda – and, conversely also charged with disseminating and explaining research findings to the community at large. That "Biology Dialogue," or, "Biologue," gave rise to the video and comics about breast cancer and the environment.

The Biologue

"We suspect the increased breast cancer risk from environmental agents is a consequence of disrupted cell interactions. *The Breast Biologues* uses images of normal and tumor cells to vividly demonstrate that interaction," said Zena Werb, PhD. Werb, professor and vice-chair of anatomy at UCSF, is principal investigator for the basic science element of Center.



The green cells that are around the duct and around the blood vessel are inflammatory cells that don't move. There are more of these cells of different sizes in the fat. You can also see round inflammatory cells in the blood stream. So this shows how dynamic some of the inflammatory cells are even in normal breast tissue.



Based on Werb's most recent findings and understanding of normal breast development, *The Breast Biologues* suggests that cancers might get their start by hijacking the breast's normal developmental processes. *The Breast Biologues* hypothesizes that a girl during puberty experiences a "**Window of Susceptibility**" -- a period when her changing breast cells are extra sensitive to environmental toxins. That exposure, it is proposed, increases her risk of developing breast cancer later in her life.

"The science is complex: it can be challenging to explain. In the *The Breast Biologues*, radiation is the example that helps explain how the environment can set pre-cancerous cells in motion. It's broken down into steps and illustrated," said Paul Yaswen, PhD of Lawrence Berkeley National Laboratory and a co-investigator in the Center.



The Center studies ionizing radiation because there is an abundance of evidence about its ability to cause cancer. As explained in the *The Breast Biologues*, girls who were exposed during puberty to high levels of radiation at the close of WWII in Japan were much more likely to develop breast cancer than older girls or adult women who were similarly exposed. This finding supports the hypothesis of puberty as a window of susceptibility as it relates to ionizing radiation.

Many chemicals and environmental exposures may affect breast cancer risk. The best documented environmental exposure known to cause cancer is high-dose radiation

“We believe it’s important to share this information with the public,” said Janice Barlow, RN, executive director of ZBC. “We hope our research will result in public health policies that help decrease the exposure of girls and women to the environmental chemicals that are found to increase breast cancer risk, and in the establishment of public health programs that teach girls and women about lifestyle choices that can reduce their risk of developing the disease.”

Background

The Breast Biologues is a result of the collaboration between Lori Schkufza, an animation consultant; the Bay Area Breast Cancer and the Environment Research Center’s basic science researchers: Dr. Zena Werb at University of California, San Francisco, Dr. Paul Yaswen at Lawrence Berkeley National Laboratory, and Dr. Mary Helen Barcellos-Hoff, formerly of Lawrence Berkeley National Laboratory, currently at New York University Langone School of Medicine; and Casandra Aldsworth and Janice Barlow at Zero Breast Cancer, Chair of the Center’s Community Outreach and Translation Core. The comic books were designed by Kim Huff of Kimber Communications and translated into Spanish by Gabriela Marín.

The Breast Biologues Education Kit is supported by Award Number U01 ES012801 and U01 ES019458 from the National Institute of Environmental Health Sciences and the National Cancer Institute. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institute of Environmental Health Sciences, the National Cancer Institute or the National Institutes of Health.

The Bay Area Breast Cancer and the Environment Research Center (BABCERC) is one of four centers nationwide that studies the environmental causes of breast cancer by focusing on mammary gland development during puberty when the breast may be especially vulnerable to environmental influences. The Center is based at the University of California, San Francisco, under the leadership of Dr. Robert A. Hiatt, Director of Population Sciences, UCSF Helen Diller Comprehensive Cancer Center. The Center includes a basic science project, an epidemiology project, and the community outreach and translation core and is a collaborative project involving University of California, San Francisco, Kaiser Permanente, Northern California, California Department of Public Health and Zero Breast Cancer. More information about the BABCERC can be found on its Web site: <http://bayarea.bcerc.org>.

Zero Breast Cancer is a nonprofit organization dedicated to finding the causes of breast cancer through community participation in the research process. We focus on identifying environmental factors and the role they play in the development of breast cancer at all stages of life and across generations. For more information, visit: www.zerobreastcancer.org.

University of California Television (UCTV) broadcasts educational and enrichment programming from the campuses, national laboratories, and affiliated institutions of the University of California, reaching 23 million homes nationwide on satellite (Dish Network, Ch. 9412) and cable (<http://www.uctv.tv/cable>) and worldwide via live stream, video archives and podcasting at <http://www.uctv.tv>.

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