



**JOHN WAYNE  
CANCER INSTITUTE**  
at Saint John's Health Center

Contact:

Sarah Phelan  
(310) 315-4054  
(424) 744-7309 (cell)  
sarah.phelan@stjohns.org

### **JWCI Research Paves a New Way to Fight Breast Cancer**

*The PLOS ONE-published findings link bacteria to a possible protection against the disease*

SANTA MONICA, CA, Jan. 8, 2014 — Researchers from the John Wayne Cancer Institute (JWCI) at Saint John's Health Center just published the results of breakthrough research that may change the future of breast cancer treatment and prevention. The team's discovery that healthy breast tissue contains more copies of bacterial DNA than tumor tissue from breast cancer patients hints that bacteria may actually be protective. The clinical impact of this study could lead to major improvements in treatment through the development of highly innovative therapies for breast cancer, such as utilizing probiotics in treatment and prevention or using bacteria to help assess the severity of disease.

"Although microbes and chronic inflammation have been linked to some cancers, our surprising preliminary finding leads us to challenge the traditional way of thinking about their relationship," explained Delphine Lee, MD, PhD, Director of the Department of Translational Immunology in the Dirks/Dougherty Laboratory for Cancer Research at JWCI. "Our data suggests a potentially beneficial role for certain bacteria and shows a previously unrecognized association between specific bacteria and healthy breast immune physiology. Our finding may be the first clue that specific microbes stimulate the resident immune cells to help control breast carcinogenesis."

Dr. Lee's next steps include investigating possible mechanisms for bacteria to protect against breast cancer and will pave the way for a whole new perspective about bacteria and breast cancer. Additionally, while Dr. Lee's team's proposal is focused on the breast, the idea that microbes or their components may contribute to immune physiology and immune surveillance may impact other solid malignancies.

The research team, led by Dr. Lee, had its findings published for the first time this month by *PLOS ONE*, the publication for the nonprofit publisher, membership and advocacy organization Public Library of Science (PLOS).

PLOS's mission is to accelerate progress in science and medicine by leading a transformation in research communication (learn more at [www.plos.org](http://www.plos.org)). The article is titled, "Microbial dysbiosis is associated with human breast cancer."

Dr. Lee was assisted by Cai Xuan, PhD, Jaime Shamonki, MD, Maureen Chung, MD, PhD, Maggie DiNome, MD, Alice Chung, MD, and Peter A. Sieling, PhD.

"To prevent breast cancer, we must understand the cause and the conditions that foster its development," explained Dr. Lee. "This research is a new step towards that understanding."

The full article, published by *PLOS ONE*, on this innovative research can be found at: <http://dx.plos.org/10.1371/journal.pone.0083744>.

Dr. Lee's research receives generous support from Carolyn Dirks and Brett Dougherty/Joseph B. Gould Foundation, Associates for Breast and Prostate Cancer Research and the Fashion Footwear Charitable Foundation of New York and QVC Presents "FFANY Shoes on Sale."

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**About the John Wayne Cancer Institute**

Since 1981, the family of John Wayne has been committed to pioneering cancer research in memory of their father, who died of cancer. For more than 30 years, the dedicated physicians and scientists at the John Wayne Cancer Institute (JWCI) have made groundbreaking discoveries that have changed the way cancer is detected, diagnosed and treated around the world. Today, the tradition of excellence continues as JWCI spearheads new research advances, while training the next generation of leaders in the fight against cancer through its renowned Surgical Oncology Fellowship Program. The Institute's programs focus on melanoma, breast, neurological, prostate and gastrointestinal cancers, as well as innovative research in cancer genomics, molecular biomarkers, and chemo- and immunotherapies. With its unique ability to rapidly turn scientific discoveries into novel approaches for early detection and treatment, JWCI provides immediate hope to cancer patients everywhere. For more information, please visit [www.jwci.org](http://www.jwci.org) or [www.facebook.com/JohnWayneCancerInstitute](https://www.facebook.com/JohnWayneCancerInstitute).