

OHSU Knight Cancer Institute

Ovarian Cancer Research Update - *The Power of Philanthropy*



Yukie Bean, CCRP, Senior Research Associate, and Dr. Pejovic reviewing research results.

We will end cancer as we know it.

Through innovative collaborative research and education, we provide prevention, detection and care—one person a time.

The OHSU Knight Cancer Institute is the only National Cancer Institute-designated comprehensive cancer center between Sacramento and Seattle.

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Treatment options for people with ovarian cancer have improved and many women are living longer after diagnosis. But ovarian cancer still ranks fifth in cancer deaths among women, accounting for more deaths than any other cancer of the female reproductive system.

The OHSU Knight Cancer Institute is striving to understand and ultimately defeat all cancers, and your steadfast support and encouragement fuels discovery, new options, and hope for people around the world affected by these diseases.

A Proven Track Record of Innovation and Discovery

Early in her career at OHSU, physician-scientist Tanja Pejovic, M.D., Ph.D., currently Professor of Obstetrics and Gynecology, within the Division of Gynecology and Oncology, at the OHSU School of Medicine, and her colleagues made an unexpected discovery while investigating BRCA1 and BRCA2 gene mutations in inherited and hereditary ovarian cancer.

Their ground-breaking research revealed that many people with a strong family history of this disease have reduced levels of the Fanconi anemia protein known as FANCD2 instead of the BRCA mutations.

The team built on this research to explain how the presence of cytoplasmic FANCD2 is associated with better survival rates for people with ovarian cancer. And now they are working to understand how FANCD2 activity can be influenced to increase the sensitivity of cancers cells to chemotherapy for better treatment outcomes.

Additionally, Dr. Pejovic and her innovative team are leaders in the Ovarian Cancer Brain Metastases Consortium. This alliance consists of investigators from six academic centers working to solve brain metastases in ovarian cancer. The drive to discover even more doesn't stop here.

Finding Solutions to Treatment Resistance

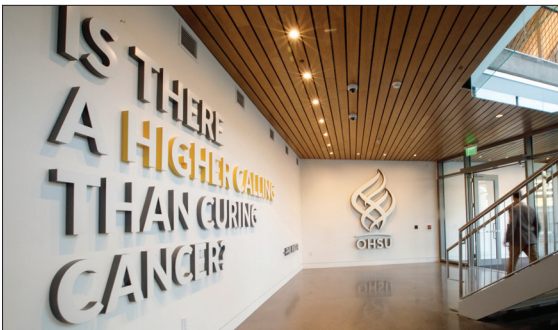
Dr. Pejovic and her team, in collaboration with researchers from OHSU and scientists from three other academic institutions, are launching a new investigation to find innovative ways to overcome chemoresistance in ovarian cancer. The study aims to find the molecular pathways that lead to treatment resistance and mortality in many patients with ovarian cancer.

The team will use an innovative and disruptive approach that, for the first time, will target a universal cell stress response pathway and its main effector: Y-box binding protein 1 (YBX1). The expression of this protein is increased in patients with all types of cancer and is associated with poor outcomes. The goal is to find better ways to prevent, detect, and treat all cancers and save lives.

In a concurrent study, led by Adam Krieg, Ph.D., assistant professor of Obstetrics and Gynecology, Division of Gynecology and Oncology, OHSU School of Medicine, he and his team are studying the formation of a rare and aggressive ovarian cancer called Small Cell Carcinoma of the Ovary, Hypercalcemic Type (SCCOHT). This cancer is very difficult to treat and predominately caused by mutations in the SMARCA4 gene. The average age of a patient at diagnosis is 24 and the overall survival rate is 10% but if caught early, the five-year survival rate is 30%.

The team is working to characterize the effects of SMARCA4 mutation/inactivation to identify better therapeutic targets to improve treatment options for patients with SCCOHT, endometrial cancer, and clear-cell ovarian cancer. Genes frequently mutated in these cancers are known to interact with SMARCA4. The commonality of their regulatory mechanisms means therapies identified for one may be useful for other cancers, and vice versa.

Philanthropy - A Key to Our Success



Most of the innovative research projects, collaborations, and breakthroughs described above have been possible because researchers, care providers, patients, donors, and philanthropic supporters changed the future of ovarian cancer research by believing in and supporting the Oregon Ovarian Cancer Registry—a library of carefully documented health histories and living cells that are maintained for current and future research.

Philanthropy, especially the generous and longstanding support of the Sherie Hildreth Ovarian Cancer (SHOC) Foundation has fueled this world-class research. Sherie Hildreth founded the SHOC Foundation in 2005 to do one thing—empower ovarian cancer patients everywhere. Over sixteen years, this dedicated grassroots organization has provided over \$1.25 million to support innovative ovarian cancer research at OHSU by Dr. Pejovic and her outstanding team.

Thanks to supporters like the SHOC Foundation and you, Dr. Pejovic and her team continue their tireless pursuit of finding better ways to prevent, diagnose and treat ovarian cancer. There is much more to accomplish. **Thank you for standing with us in our mission to end ovarian cancer as we know it.**

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