

**For Immediate Release**

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**Avon Walk Boston Ceremony Highlights Pioneer Valley Life Sciences Institute and UMass Amherst Research Projects**

Research grants to support three western Massachusetts research teams were announced on May 17<sup>th</sup> at the closing ceremony of the seventh annual Avon Walk Boston which is part of the Avon Foundation's annual fund raising to facilitate access to care and finding a cure for breast cancer. A total of \$453,282 was awarded for the projects, each of which seeks to understand how specific risk factors alter the probability that a woman will develop breast cancer.

UMass Amherst professor of Veterinary and Animal Science, Dr. D. Joseph Jerry, and Dr. Sallie Smith Schneider, both research scientists at the Pioneer Valley Life Sciences Institute (PVLSI), received funding of \$157,475 for a project to investigate "Changes in Gene Expression Profiles Associated with Parity." A full-term pregnancy can reduce the risk of breast cancer by up to 50%. This project is aimed at identifying changes in molecular pathways that render breast tissue resistant to cancer. These changes may represent opportunities for preventive therapies as well as better prediction of risk. Dr. Melissa Johnson, a plastic surgeon at the Baystate Medical Center, is a vital collaborator in this project. Professor Jerry is the director of the PVLSI's breast cancer working group and Dr. Smith Schneider is the associate director of the Institute's Center of Excellence in Apoptosis Research.

Associate professor of Environmental Toxicology Dr. Kathleen Arcaro, of UMass Amherst's department of Veterinary and Animal Science and Environmental Sciences Program, was awarded \$109,508 to study "The Role of Pregnancy and Lactation in Inhibiting Age-Induced Promoter Hypermethylation." Women who give birth and nurse a child before age 25 have a reduced lifetime risk of developing breast cancer. One type of change detected in the DNA of aging cells, called 'promoter methylation', can inhibit some of the genes required to repair damaged DNA and to control cell and tumor growth. This project tests the idea that birth and lactation at a young age alter the methylation clock of breast cells, thereby lowering the risk of developing breast cancer. Professor C. Douglas Anderton, Social and Demographic Research Institute, UMass Amherst, and Sallie Smith Schneider, PVLSI, are collaborators on the project. Nursing mothers can learn about donating breast milk for Dr. Arcaro's ongoing work at <http://www.breastmilkresearch.org/about.html>.

Dr. Elizabeth Stuart, professor of Microbiology, UMass Amherst, received \$186,299 to study "The Presence, Prevalence and Impact of Intracellular Chlamydia in Cells from Breast Milk." Dr. Stuart notes, "Our preliminary testing of DNA from epithelial cells isolated from human milk is the first to show the presence of intracellular, bacterial (Chlamydiales) DNA in breast tissue. Intracellular Chlamydiales alter important cell functions in milk-derived epithelial cells. Results from this study will begin defining the extent and impact of chlamydial infection on breast epithelial cells, and identify chlamydial associated alterations in cancer related genes and redistributions of important host cell proteins." Professors Arcaro and Anderton are co-investigators on the project.

Dr. Lawrence M. Schwartz, science director at the Pioneer Valley Life Sciences Institute (PVLSI) and professor of Biology at UMass Amherst, observes that, "Understanding the molecular and environmental mechanisms that influence women's risk of developing breast cancer is critical to improving diagnosis and treatment. This trio of awards is indicative of the outstanding breast cancer research initiated and performed in western Massachusetts as well as the unique resources that local scientists and physicians are developing."

### **About the Pioneer Valley Life Sciences Institute (PVLSI)**

PVLSI was created in 2002 as a joint venture of Baystate Medical Center and the University of Massachusetts Amherst with the dual missions of biomedical research and economic development. Drawing on each of the founders as well as its own researchers, the Institute brings together physicians, scientists, and engineers to create interdisciplinary and multidisciplinary teams focused on the molecular mechanisms of disease and the development of new diagnostic and therapeutic tools. For more information, go to [www.pvlsi.org](http://www.pvlsi.org).

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