Adoptive cell therapy (ACT) is a type of immunotherapy that involves obtaining, expanding, and then reintroducing a person’s own T-leukocytes to treat cancer. The University of Washington Cancer Vaccine Institute demonstrated that T-cells isolated from peripheral blood, in contrast to harvesting tumor infiltrating lymphocytes directly from tissue samples, can be effectively expanded for clinical use in HER2+ breast cancer. Generating sufficient numbers of autologous T-cells for clinical use requires resource-intensive ex vivo T-cell culture.

Aiming to direct resources to those most likely to benefit, Dr. Tachiki performed a study to determine which patient factors predict favorable T-cell expansion. Using pre-existing data for 26 subjects, Dr. Tachiki found an inverse relationship between subject age and cell expansion and a positive correlation with baseline whole blood lymphocyte counts (coefficient 0.39, p=0.04). Her study found no association between hormone receptor status or number of chemotherapy courses and cell expansion. These findings may guide patient selection for future ACT clinical trials.

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Dr. Tachiki plans a career as a physician-scientist in hematology and oncology. She begins a fellowship at the University of Washington in July. This residency project built on her prior basic science research experience and advanced her ability to perform clinical research.

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