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UH CANCER CENTER RESEARCHER AWARDED $4.5 MILLION GRANTS TO STUDY BREAST CANCER AND OTHER CANCERS

HONOLULU – A University of Hawai‘i Cancer Center researcher was awarded two new National Institutes of Health (NIH) grants totaling $4.5 million to use "Big Data" to study preeclampsia, breast cancer, and acute leukemia.

"Hawai‘i is a fertile ground to do big data research. The state has a diversified population for genomics research, and state of the art high performance computing facilities for large-scale computation," said Lana Garmire, PhD, an assistant professor in the Center's Cancer Epidemiology Program. Garmire continued, "Both projects can make huge impacts on understanding the fundamentals of diseases to help cancer patients."

"These awards represent a great honor for a scientist like Garmire, who is becoming recognized as a leader in Big Data and team-centered science," said Dr. Randall Holcombe, UH Cancer Center director. "This area of research has become critically important for the analysis of large sets of data."

Identify biomarkers for preeclampsia and breast cancer risks
The $3.0 million Research Project Grant (R01) from National Institute of Child Health and Development (NICHD) will use Big Data to study preeclampsia and breast cancer. Currently there is no cure for preeclampsia and it is one of the leading cases of maternal and fetal deaths according to the World Health Organization. Garmire and collaborators will identify:

- Biomarkers for preeclampsia and breast cancer risks
- Biomarkers and molecular links that explain why preeclampsia mothers and their children have lower risks of breast cancers.
- Why certain ethnic groups such as Asians have a higher risk of preeclampsia.

Garmire will use local sample resources from Hawai‘i Biorepository (HiBR) and Kapiolani Medical Center, which is based on the multi-ethnic populations in Hawai‘i.

Research personalized treatments
The $1.4 million R01 from National Library of Medicine (NLM) is the continuation of
Garmire and collaborators will develop an integrative bioinformatics platform to study the complexity of tumor cells of individual patients. The study pushes the limit of technology boundaries by:

- Developing tools that reveal the genomics profile of a cancer patient to develop more personalized treatments.
- Applying big data (bioinformatics) on acute leukemia patients to find key genes and sequence of events that respond better to therapies.

Garmire's co-investigators are at University of California San Diego, Yale and the University of Hawai'i.

Information about Garmire and her research group: [http://garmiregroup.org](http://garmiregroup.org)

The University of Hawai'i Cancer Center through its various activities, cancer trial patients and their guests, and other visitors adds more than $54 million to the O'ahu economy. This is equivalent to supporting 776 jobs. It is one of only 69 research institutions designated by the National Cancer Institute. Affiliated with the University of Hawai'i at Manoa, the center is dedicated to eliminating cancer through research, education, and improved patient care. Learn more at [www.uhcancercenter.org](http://www.uhcancercenter.org). Like us on Facebook at [www.facebook.com/UHCancerCenter](http://www.facebook.com/UHCancerCenter). Follow us on Twitter [@UHCancerCenter](http://twitter.com/UHCancerCenter).