



UNIVERSITY OF HAWAI'I  

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CANCER CENTER

# Application of AI to Breast Cancer for Hawai'i & the USAPI

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A Cancer Center Designated by the  
National Cancer Institute

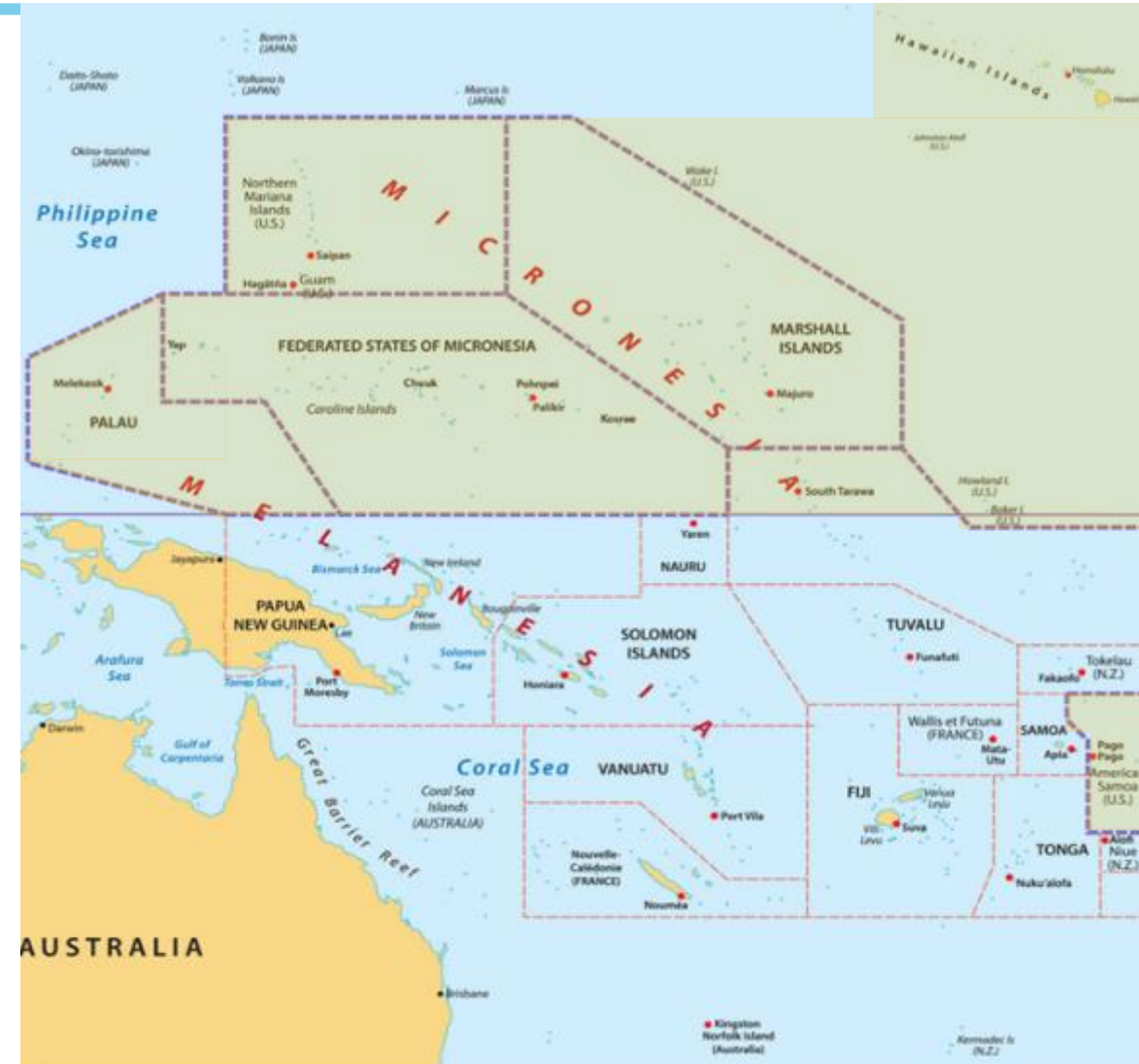
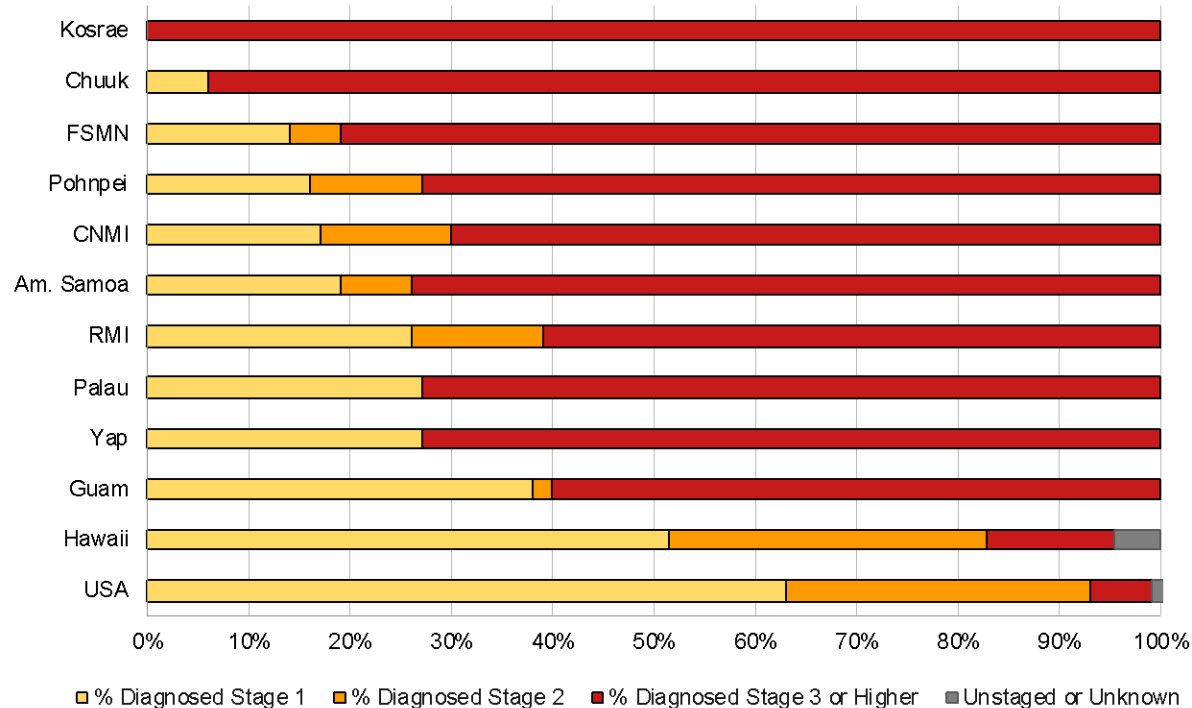


# Elevated Advanced-Stage Breast Cancer Rate

University of Hawai'i Cancer Center Catchment Area

--- U.S. Affiliated Pacific Islands

Advanced stage breast cancer rates in the Pacific are higher than in the USA mainland, especially where mammography is inaccessible



(Sources: SEER\*Stat Database: Hawaii 1975-2017 and SEER Cancer Statistics Review 1975-2017). Courtesy of Hernandez and Buenconsejo-Lum.

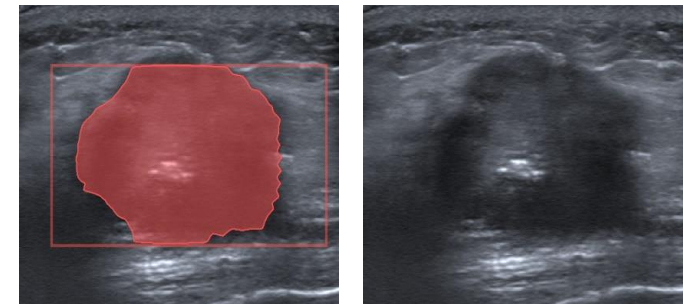
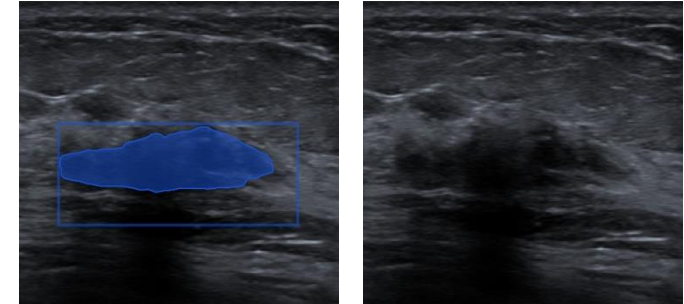
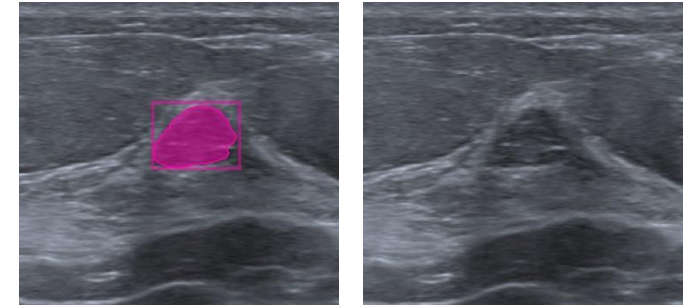


# Accessible Breast Cancer Early Detection and Risk Evaluation

**Our hypothesis:** Portable, handheld, AI-enabled breast ultrasound (BUS) devices operated by a local healthcare worker could greatly reduce advanced-stage cancer rates.

**How can breast US + AI help reduce the advanced-stage cancer rate?**

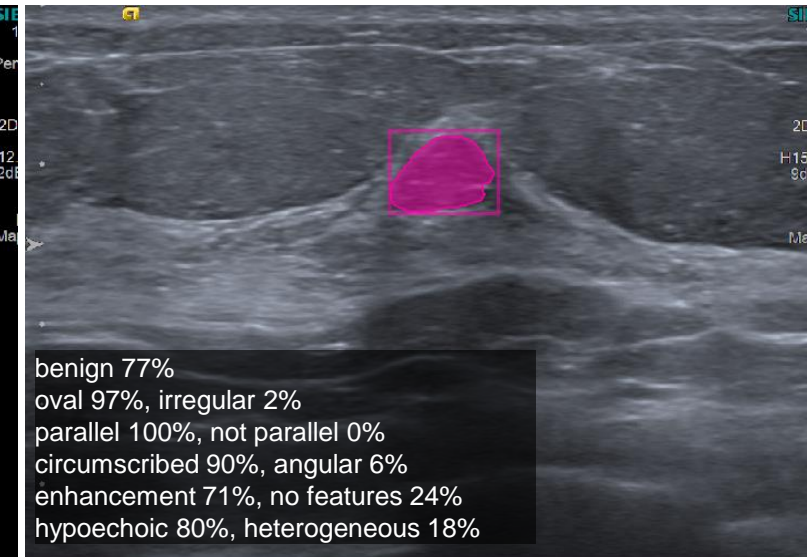
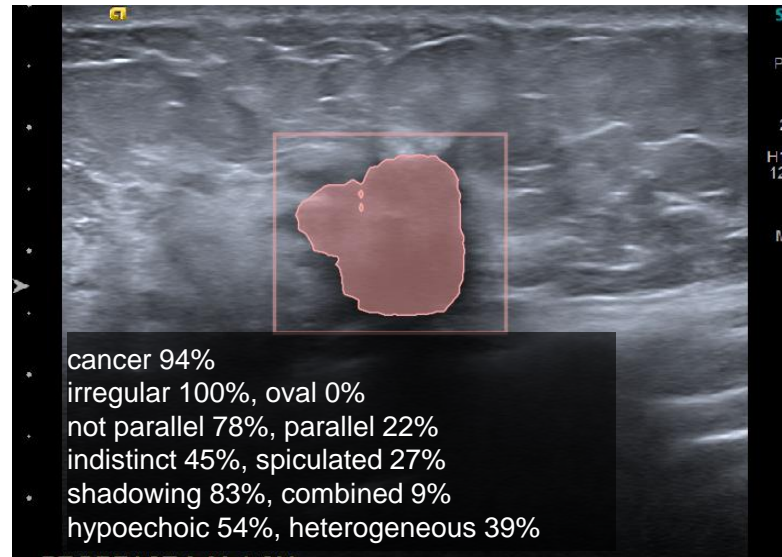
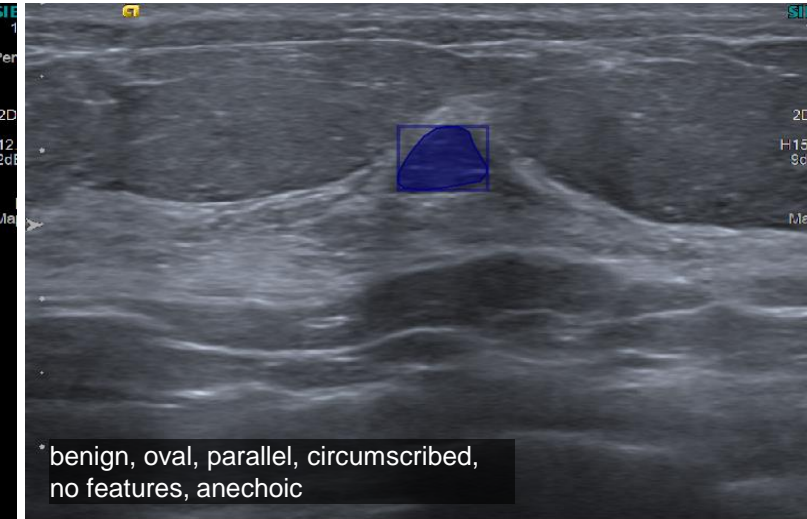
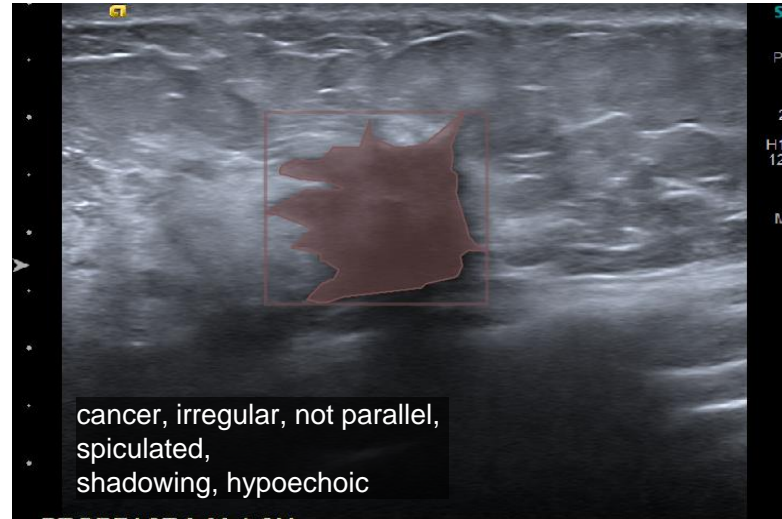
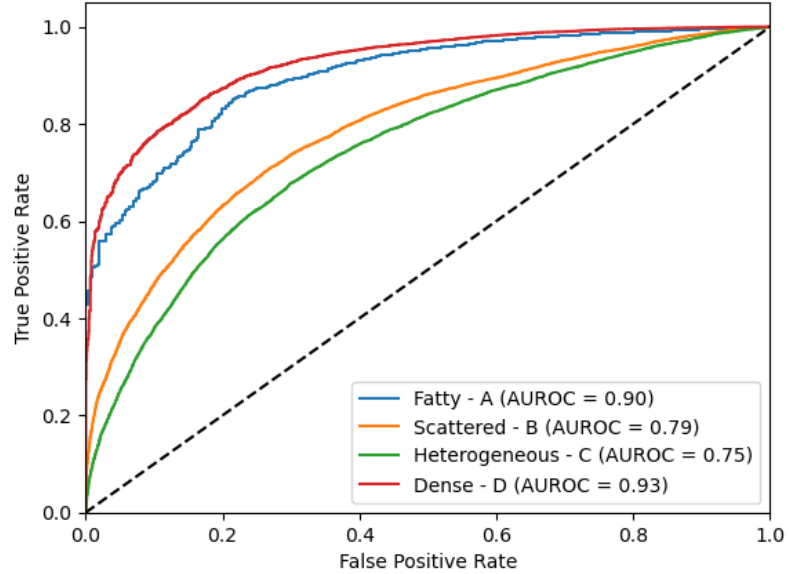
1. Finding breast cancer
2. Evaluating breast cancer risk

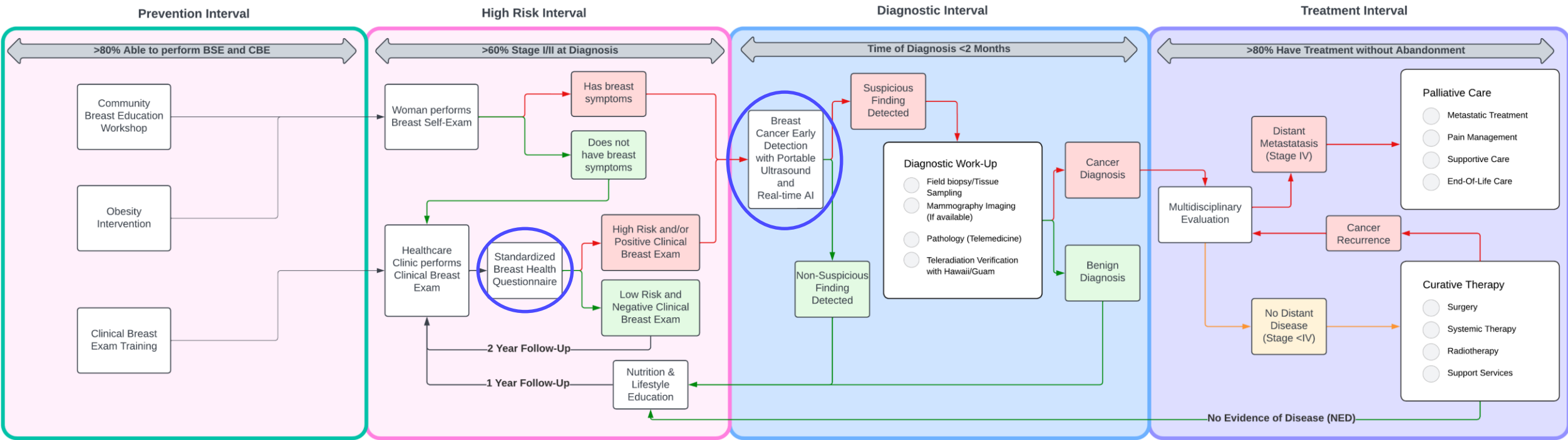




# Accessible Breast Cancer Early Detection and Risk Evaluation

Receiver Operating Characteristic Curve - Breast Density Image-Level







# Improving Breast Cancer AI for Women in Hawai'i

Most breast cancer AI is developed on datasets of White women from the continental US and Europe. Subgroup testing typically includes all AANHPI women as a single category.

## Do cancer risk AI models have acceptable performance among Asian subgroups?

BCSC 5-year risk	White N = 91,308	Filipina N = 6,551	Chinese N = 24,051	Japanese N = 2,485
	% of invasive cancers discovered within 5 years			
<1.67% chance of developing cancer in the next 5 years	54	90	93	89
≥1.67% chance of developing cancer in the next 5 years	46	10	7	11





# Thank you to Honolulu Chapter of the ARCS Foundation!

