

UH Cancer Center researchers: Developing data-driven cancer care

University of Hawai'i Cancer Center researchers developed a computational algorithm to analyze "big data" obtained from tumor samples to better understand and treat cancer.

"A growing problem in cancer research is figuring out how to analyze the many kinds of big genomic data for different cancers," said Gordon Okimoto, co-director of Biostatistics and Informatics Shared Resource at the UH Cancer Center.

"The overwhelming quantity and complexity of the data has created an analysis bottleneck that has slowed the translation of the knowledge within the data to the clinic," said Okimoto. "We have figured out a way to mine these data for the benefit of cancer patients."



Dr. Gordon Okimoto, UH Cancer Center

Okimoto and his collaborators have developed a computational algorithm called the Joint Analysis of Many Matrices by Iteration (JAMMIT). The tool uses advanced mathematics to identify different patterns across multiple molecular data types, such as gene expression and genetic mutations, that when taken together accurately predict what treatments would be best for a given cancer patient.

"The algorithm could accelerate the approval of powerful treatments for many cancers, improve clinical outcomes, and reduce costs for treating cancer," said Randall Holcombe, incoming director of the

UH Cancer Center. "I believe this discovery can open a path to more precision medicine clinical trials that could be initiated and run locally in Hawai'i."

Startup based on JAMMIT technology

Okimoto and Thomas Wenska started SNR Analytics, Inc. The start-up is focused on securing the intellectual property and funding for the development of a computational pipeline based on the JAMMIT algorithm for the discovery of predictive gene signatures for cancer and other complex diseases.

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Osher Lifelong Learning Institute Q&A:

Keeping the mind engaged **for life**

Carole A. S. Mandryk is the new director of the Osher Lifelong Learning Institute at the University of Hawai'i at Mānoa (OLLI-UHM).



What is the Osher Lifelong Learning Institute?

OLLI-UHM is an educational membership program offering non-credit, college-level courses and other activities to encourage older learners (aged 50+) to engage their minds, enrich their lives, and serve the community.

Older adults are a resource for society, with continuing social, developmental and intellectual needs. OLLI-UHM provides a forum to meet those needs and validate their contributions.

How does this program benefit participants?

We know that lifelong learning keeps the mind sharp, fighting cognitive impairment most effectively when mentally challenging activities are combined with active social engagement. That is exactly what OLLI-UHM excels at, providing members with an ever-expanding array of courses, workshops, film series, arts events, museum tours and more, in an engaging supportive social environment.

"It's really an important part of my life. The classes are interesting, but the bonus is meeting people from different fields that I would never have met otherwise," said OLLI-UHM member Jeanne Nowaki. "It also keeps me alert and aware of current events."

Who teaches classes?

Classes are taught on a volunteer basis by active and retired

professors, as well as community members who are experts in a particular subject. Some members teach in areas entirely different than their professional expertise, as they expand their knowledge base with post-retirement passions. Members may be students in one class and the instructor or facilitator in another.

As Jack Sullivan, a member since the program started in 1996 explains, "They love their subject so much they are willing to do this without pay."

How can people sign up?

Fall classes start Sept. 28. Subject areas include politics, history, botany, anthropology, art, math, and classical, Victorian and modern literature.

Please contact Carole Mandryk at mandryk@hawaii.edu or 808-956-8224 to learn about workshops and special events.

Uala Leaf Cafe at Windward CC:

Making healthy food in a **Blue Zone**

Windward Community College's Uala Leaf Cafe has been recognized as a Blue Zone Approved Restaurant, a designation awarded by the Blue Zones Project community well-being movement.

The cafe received the designation after successfully completing the Blue Zones Project Restaurant Pledge, an initiative that aims to encourage food establishments to optimize their restaurant environments to promote better health and well-being.

"Blue Zones uses evidence-based ways to live longer, better lives," said Charlene Akina, workforce development officer at Windward CC. "It embodies our mission statement, 'Foodservice Beyond Education' and our core values of pioneering, growing, excelling, voyaging and caring for family."



One of the pledge challenges tasked restaurants with creating a bite-sized, 100-calorie dessert in line with healthy diet and recommended daily calorie intake. Uala Leaf Cafe was able to modify its 680-calorie bread pudding into a 100-calorie "nice bite" treat (shown above).



Chef Mike Roth, Uala Leaf Cafe, Windward Community College

Uala Leaf Cafe is the experiential operations arm of Windward CC's Hi'ilaniwai Foodservice Innovations program, which gives students the kitchen skills necessary to excel in the food service workforce. Students receive valuable on-the-job training that prepares them for restaurant and food service careers.

Moving forward, Uala Leaf Cafe hopes to add to its healthy menu options and reduce its plastic footprint. As more and more food establishments and purveyors

become "Blue Zones aware," Uala Leaf Cafe hopes to continue to uphold its pledge and serve as a model for health and well-being.

Akina added, "The [Blue Zones] pledge is posted in our kitchen to remind us all of our commitments to include best practices to help our customers live longer, better lives. We want to be the neighbor that creates nutritious, 'onolicious and localicious lunch choices for our Ko'olaupoko communities and beyond."



- Hale Akoakoa Building, first floor
- Open to public Monday-Friday during semester, 11 a.m.-1:30 p.m.
- Closed Saturday, Sunday, state holidays
- Phone: 808-235-7358
- Cash only
- Menu: windwardcce.org/uala-leaf-cafe

Cavefish offer clues for mental health

A research group led by UH Mānoa biology Assistant Professor Masato Yoshizawa has found similarities between behavior in cavefish and humans with autism and schizophrenia. With this significant discovery, the researchers are attempting to resolve fundamental mechanisms of these diseases, and eventually hope to develop therapeutic methods in autism and schizophrenia.

An article focusing on these implications appeared in *Science*. In it, researchers found that blind cavefish differ from their surface relatives in that they don't have a social structure and don't school. They also almost never sleep and are hyperactive, tending toward



Surface fish (top) compared with cavefish

repetitive behavior with seemingly higher anxiety than their surface relatives. The cavefish genome shares a high percentage of classic risk factor genes for human

psychiatric diseases, according to Yoshizawa's study. This, combined with their behavioral traits, makes the cavefish an interesting potential candidate for further testing compared with the typical lab mouse.

Yoshizawa presented his findings at the 23rd International Conference on Subterranean Biology in Fayetteville, Arkansas. His presentation, "Adaptation through changes of behavioral and morphological traits in Mexican Cavefish," garnered attention for its implications regarding the potential for the fish research in understanding human mental disorders and possible treatments.