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HAWAII BUSINESS MAGAZINE NAMES NATIVE HAWAIIAN HEALTH'S ALIKA MAUNAKEA ONE OF 20 LEADERS TO WATCH



Epigenetics is a somewhat unfamiliar term for most of us, but you are likely to hear more about the subject this week, as *Hawai'i Business Magazine* recognizes Dr. Alika Maunakea “as an emerging leader who has already made major contributions to Hawai'i and whom we expect to have an even greater impact over the next two decades.”

As an epigeneticist, Dr. Maunakea studies the molecular interaction between the environment and genes, and how changes in this interaction is involved in diseases which are disproportionately prevalent in Native Hawaiian and Pacific Island populations—changes which are not due to differences in DNA sequence (i.e. genetics).

As Dr. Maunakea explains, “DNA is a fundamental building block of genes that provide the instructions for making all of the parts of the body. But DNA is only part of the story.”

“Although the genome is fixed for life, epigenomes are flexible and respond to signals from the environment to turn genes on or off. These “signals from the environment” can include diet and stress, says Dr. Maunakea. Dr. Maunakea’s research reveals that the epigenome not only turns genes on or off, it also instructs which parts of DNA in the genes are recognized and used in the cell, a normal biological process known as alternative splicing.

“More work is needed to understand how the environment may influence the function of the epigenome on important cellular activities, such as alternative splicing, that may together contribute to disease,” said Dr. Maunakea. “Further understanding may pave the way for new advances in disease diagnostics, prevention, and treatment.”

Born and raised in Wai`anae on O`ahu, Dr. Maunakea was inspired by his great-grandmother, Katherine Maunakea, a respected kūpuna and practitioner of la`au lapa`au, or traditional Hawaiian remedies.

“Ha`aha`a ke kanaka no ka i`imi na`auao” (meaning: “Humble is the person who seeks wisdom.”) “My great-grandmother taught me this `ōlelo no`eau when I was very young,” said Dr. Maunakea. “Growing up with her influence and observing her dedicated service in the Native Hawaiian community inspired me to seek wisdom, to share it, and work collectively to apply it to the benefit of our community.”

In addition to advancing the understanding of fundamental biological processes, Dr. Maunakea believes his work validates Native Hawaiian ancestral knowledge.

“`Olelo no`eau (meaning: wise-sayings) abound which indicate that Native Hawaiians centuries ago had an implicit understanding that the environment influences health—a fundamentally epigenetic concept,” said Maunakea. As examples, he said, “Pū`ali kalo i ka wai `ole” (meaning: “Taro, for lack of water, grows misshapen”) suggests that lack of caring for the land leads to illness.”

And “I pa`a ke kino o ke keiki i ka lā`au” (meaning: “that the body of the child be solidly built by the herbs”) was said of mothers eating herbs (dietary supplements) during pregnancy and nursing, to make the baby thrive and help prevent adult-onset diseases.

“We are indeed connected to our environment, the health of which directly impacts our health as well,” said Dr. Maunakea.

This perspective has significant implications on the current health care system. “By integrating traditional knowledge and evidence-based methodologies, we can create new and improve on existing diagnostic methods and therapies, and enable the application of interventions designed around prevention,” said Dr. Maunakea. He said that could shift the focus of the conventional health care model on disease treatment towards a traditional, environmentally inclusive and community-informed model of disease prevention and wellness.

“I work in biomedical sciences so that this message may inspire others from our community to see the value of our traditional knowledge, that we can continue to seek wisdom from it, and learn how to apply it to overcome the severe health challenges our community faces today for a better tomorrow,” said Dr. Maunakea.

See the article featuring all 20 honorees in [Hawai`i Business Magazine](#)

About the John A. Burns School of Medicine (JABSOM):

Ranked among the Top 20 Best Medical Schools in the U.S. for 2016 by *US News & World Report*, the John A. Burn School of has trained half of the physicians now treating patients in the State of Hawai`i. In its medical education (MD) and graduate medical education (MD Residency) programs, JABSOM is training 494 future physicians in 2014-2015.

More than 80% of the physicians annually identified as the “Best Doctors in Hawai`i” either trained or teach at the University of Hawai`i medical school.

JABSOM faculty bring external funding of about \$42 million annually into Hawai`i, most of it invested in jobs and services in the islands. The medical school also trains speech therapy and audiology professionals, medical technology students and some 200 students annually seeking graduate-level degrees in the biosciences: Cell and Molecular Biology (MS, PhD), Clinical Research (MS, PhD), Epidemiology (PhD), Developmental and Reproductive Biology (MS, PhD) and Tropical Medicine (MS, PhD).

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