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December 2, 2020

Review Panel, National Artificial Intelligence (AI) Research Institutes (Theme 8)
Directorate for CISE, Division of Information and Intelligent Systems, NSF
2415 Eisenhower Avenue, Alexandria, Virginia, VA 22230
National Institute of Food and Agriculture, USDA
1400 Independence Avenue, SW, MS 2201 Washington, DC 20250

Re: Support for UH Manoa Team in Competition for National AI Research Institutes

Prestigious Panel Members:

This letter is written to provide our support for Dr. Daniel Jenkins, Dr. Michael Melzer, Dr. Reza Ghorbani, Dr. Il Yong Chun, and Dr. Yao Zheng of the University of Hawaii at Manoa (UHM), regarding their collaboration with the research team at the University of California, Riverside to submit a proposal titled "AI Institute: Agricultural Ecosystem Sensing, Planning, and Representations for Innovations in Tree-crops (AESPRIT)," in competition for the National Artificial Intelligence (AI) Research Institutes program, Theme eight: AI-Driven Innovation in Agriculture and the Food System, sponsored by NSF and USDA.

My name is Shari Chang. I am the chief executive officer of the Girl Scouts of Hawai'i Council. As one of the members of our local STEM community, I believe I am in a unique position to express our appreciation for the UH Manoa team's active involvement in local STEM events and our support for their plan to introduce AI-driven agricultural research into K-12 education. I hope this letter may also serve as evidence regarding the team's talents and passion in community outreach and mentoring activities on par with their expertise in scientific research, which has already been well recognized internationally.


The UHM team has been in close connection with the local STEM community and participated in various STEM events, including the annual STEM festival hosted by the Girl Scouts of Hawai'i, the NSA/NSF GenCyber Camps, and other K-12 outreach programs hosted by the UH Office of Student Equity, Excellence, and Diversity, and Women in Technology. Recently, their preliminary designs of miniaturized harmonic radar tags and AI algorithms to track invasive pests like coconut rhino beetle in Hawaii were presented in the 2020 virtual STEM festival. The presentation incorporated an intuitive at-home experiment design for K-12 students to understand the physics of harmonic response. Being in a tropical island state whose natural biodiversity is particularly vulnerable to invasive species, I am very eager to see the future integration, deployment, and testing of their innovative approaches to facilitate our understanding, identification, and eradication of new invasive organisms.

In light of their proposal effort, our organization, among other local STEM entities, can provide strong partnerships in support of their commitment to research-education integration. In particular, the STEM Center for Excellence at Camp Paumalu is a sprawling 135-acre living laboratory located on O'ahu's North Shore that provides year-round opportunities in cybersecurity, astronomy, robotics, computer coding, botany, chemistry, environmental stewardship, etc. The center is capable of hosting high-quality STEM events and has worked with national partners, including NASA, SETI Institute, Raytheon, Palo Alto Networks, etc.

Together with the UHM team, we can leverage the facility to create engaging curriculums and programs to attract local young students and introduce them to the concept of AI-agricultural at the K-12 level.

Finally, I would like to acknowledge NSF and USDA's initiatives in supporting equal opportunity for women and minority students, which is critical to the healthy development of our society and an economic imperative to build the national intellectual capital. In addition to the nation-wide issue of uneven minority representation, the geographic isolation and lacking local opportunities in STEM fields for K-12 students in Hawaii make the issue more severe. Students growing up in Hawaii are rarely exposed to the high-tech sector. I genuinely believe the team's effort will invigorate the local STEM activates and educate a new generation of students with determination to pursue and create new opportunities in Hawaii. Therefore, I support, without hesitation, their proposed research work submitted to your agencies.

Sincerely,

A handwritten signature in black ink, appearing to read "Shari Chang", with a stylized, flowing script.

Shari Chang

Chief Executive Officer