

UNIVERSITY OF HAWAI‘I SYSTEM ANNUAL REPORT



REPORT TO THE 2019 LEGISLATURE

Annual Report on Technology Transfer Activities

HRS 304A-121

December 2018

REPORT TO THE LEGISLATURE ON TECHNOLOGY TRANSFER ACTIVITIES PURSUANT TO §304A-121, HAWAII REVISED STATUTES

Technology Transfer Activities of the University of Hawai'i through October 2018.

Technology transfer activities at universities are often described as phases in a cycle: 1) faculty and students who are conducting research discover a potentially patentable invention; 2) the invention is disclosed to university administrators; 3) if the university believes that the invention has commercial promise, it will spend university resources to apply for patent protection; 4) if patent protection is pursued, university staff will engage in marketing efforts to “transfer” the intellectual property rights to an interested business entity; 5) under the negotiated license, the business may pay the university a periodic “maintenance fee” for the continuing right to exploit the patent. In addition, the business often pays the university a portion of any revenues generated by the patent as royalties, and the business (if it is a startup) may give the university a negotiated number of equity shares in the company. Any revenues received by the university pursuant to the license of the patent are then reinvested into the research phase of the technology transfer cycle to support further discoveries.

In recent years, the University of Hawai'i (UH) made a strategic decision to more actively pursue commercialization of its research products, the Hawai'i Innovation Initiative is one of the four strategic directions for 2015-2021. A specific set of tactics was developed to advance innovation and entrepreneurship within UH and the community. In particular, UH is committed to introduce new approaches to commercialization and technology acceleration through more flexible licensing, implementing a proof-of-concept accelerator to nurture UH-generated discoveries, and engage in greater community outreach and internal awareness and promotion.

Active support includes, for example: providing hands-on entrepreneurial training and mentoring to startup companies that are built around a UH invention and that rely on UH affiliated personnel, e.g. faculty, research staff, as “key personnel” in the startup. In selected cases, UH may directly invest in a company that holds UH-generated intellectual property.

Through the Office of the Vice President for Research and Innovation, UH reached the following milestones in its technology transfer program:

UH spin-off companies are developing novel commercial products and services, including:

- Adnoviv LLC: an intelligent “occupancy sensing” technology company using human presence detection for optimal energy savings currently being field tested
- Jun Innovations, Inc.: a supercooling technology to preserve the original freshness of perishable products for an extended period of time without ice crystals or cell damage

- KinetiCor, Inc: a medical imaging company using MRI motion correction technology to prospectively adjust for patient motion during MRI exams to enable MRI scanners to optimize medical images
- RealGreen Power, Inc: developing modular toilet systems to transform wastewater into clean water and generate clean energy
- Spectrum Photonics, Inc: using hyperspectral imaging to develop advanced detection technologies and remote sensor systems for detecting chemical, biological, explosives and narcotics
- The Office of Technology Transfer (OTT) continues its educational outreach on UH's technology transfer program to faculty, researchers and students through visits to UH Hilo, UH Maui College, UH West O'ahu and Kapi'olani Community College.
- The OTT hosted two seminars for the UH and Honolulu business communities addressing the commercial potential of discoveries in the fields of agriculture and medical research. The seminars were presented by attorneys with extensive experience and expertise in these fields.
- The Office of Innovation and Commercialization (OIC) under its new director/chief innovation officer has launched the following initiatives:
- Lab Ambassadors: a program to connect the OTT directly with productive laboratories using liaisons in the laboratories to assist in the commercialization process.
- Biological materials licensing: a new partnership with Kerfast will provide assistance in identifying, marketing, selling and distributing biological materials created by UH faculty and researchers
- Hi-Touch marketing: actively "push-market" UH technologies, the OIC contracted with IN-PART to market and facilitate introductions between UH and industry professionals.
- Innovation and Entrepreneurship Certificate: in collaboration with the UH Mānoa Outreach College and School of Architecture, OIC is launching a certificate program based on a series of seminars and workshops covering a diverse range of topics related to innovation and entrepreneurship.
- HI-END (Hawai'i Entrepreneurial Network Developers): an informal network of people and programs involved in entrepreneurship, innovation and tech investment meeting monthly to coordinate community events, share ideas, contacts and referrals and leverage resources to build and foster Hawai'i's entrepreneurship and innovation ecosystem

In October, UH and Hawaii Business Roundtable representatives visited the University of California San Francisco's and Stanford University's programs and facilities supporting their innovation and entrepreneurship ecosystem for ideas and information to grow Hawai'i's innovation and entrepreneurship ecosystem. Prominent business leaders and several legislators were also in participation, where extensive discussions took place on how to best coordinate and collaborate to advance an innovation and entrepreneurship agenda in Hawai'i.

The OIC continues to contribute in growing the innovation ecosystem at UH, including building on existing successful programs developed by various partners within UH:

- Collaborative workspaces iLab, sPACE and the FabLab are available to UH students to exchange ideas, work on projects and create prototypes.
- XLR8UH continues its program of providing education, mentorship, resources and investment to support UH startups
- PACE (Pacific Asian Center for Entrepreneurship) sponsors innovation and entrepreneurship competitions for students, as well as workshops and mentorships to encourage innovation and entrepreneur activities
- MIND Hawai'i (Medical Innovation and Design) held at the iLab brings students and faculty from various fields to develop solutions to medical challenges and is supported by UH faculty and the community
- National Science Foundation Innovation Corps (I-Corps) program train researchers to expand awareness of commercialization opportunities for their research. The OIC is currently assembling an application to provide all UH students and faculty the opportunity to participate in the program.
- Based on their efforts supporting governments and nonprofits around the world to reduce disaster risks, the Pacific Disaster Center Global (PDC Global) has developed multiple computer based tools to track, monitor and assess various types of disaster events. The OTT is protecting these new inventions by filing patent applications. Following the passage of Act 38 and Act 39 in 2017, Disaster Risk Reduction, LLC was formed in order to commercialize PDC Global's current tools.

In 2018, 41 inventions were disclosed, 19 U.S. non-provisional patent applications were filed, 8 U.S. patents were issued and a record high of 14 new license agreements executed. The inventions were generated by different units across the UH system: College of Engineering, John A. Burns School of Medicine, UH Cancer Center, College of Social Sciences, College of Natural Sciences, College of Tropical Agriculture and Human Resources, School of Ocean and Earth Sciences and Technology at UH Mānoa; UH West O'ahu; and the Daniel K. Inouye College of Pharmacy and the College of Agriculture, Forestry and Natural Resource Management at UH Hilo.