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IMPACT REPORT
Q1

FIRST QUARTER

Of Innovation,
Collaboration,
and Compassion



**College of Tropical Agriculture
and Human Resources**

University of Hawai'i at Mānoa

*The founding college of the
University of Hawai'i, established 1907*

www.ctahr.hawaii.edu

1907

Q1

College of Tropical Agriculture and Human Resources **Of Innovation, Collaboration, and Compassion**



"Others are beginning to recognize and appreciate what we at the College have known for more than a century, the importance of our research, instruction, and educational outreach mission that helps to create a better tomorrow."

Future. Lately, I've been thinking a lot about the future—new horizons, new possibilities. And I realize that so much of what CTAHR does offers promise and hope for what lies ahead as well. One reason our earth is in such a predicament is that not enough people were considering the future. Now others are beginning to recognize and appreciate what we at the College have known for more than a century, the importance of our research, instruction, and educational outreach mission that helps to create a better tomorrow.

The stories in this quarter's *Impact Report* exemplify our commitment to this work on so many levels. As the old Whitney Houston song says, "The children are our future," and this is a concept Mary Martini and the other members of the Energy House have taken to heart. As they help families become more positive, balanced, and productive, the children nurtured in them grow to be the society to come. Harry Ako and his team of aquaponics practitioners tune the traditional Polynesian arts of raising fish and vegetables for continuation in the 21st century and beyond. And Chris Lepczyk's classes and mentorship develop the next generation of stewards of our island, negotiating the fragile balance of our ecosystem to ensure our continued relationship with the 'āina.

I have faith in CTAHR's strong future, but more important still, I have faith in our ability to create a brighter future for Hawai'i and the global community as well.

Aloha,

A handwritten signature in gold ink, appearing to read 'S. Yuen'.

Sylvia Yuen
Interim Dean and Director of CTAHR

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Wild About Wildlife

Ever wonder who owns the wildlife in this state? You do! It's managed by the government, in trust for the people. So says Chris Lepczyk, who should know. Dr. Lepczyk, in CTAHR's Department of Natural Resources and Environmental Management (NREM), has students who have gone on to take part in that very management, or the management and conservation of other vital natural areas and resources. And with degrees in biology, geology, wildlife ecology, ecology, evolutionary biology, behavior, and fisheries and wildlife, Dr. Lepczyk is ideally suited to guide his students' varying research interests.

An important element of his position is the Environmental Problem Solving (NREM 494) capstone course he teaches. In this independent-learning class students work in small teams, surveying and interviewing stakeholders on a specific environmental topic of contemporary importance. Past projects have studied such pressing issues as invasive species, over-fishing, waste disposal, and designation of agricultural lands. Students often give back what they learn to the community, such as providing a marine debris project to the Kokua Hawai'i Foundation or sharing findings with non-governmental organizations when they deliver their final presentations.

Beyond the classroom, Dr. Lepczyk has a full lab of students engaged in a diverse array of research projects. One recent project, by Deidre Duffy, charted the introduction of birds and mammals to the Islands specifically for hunting purposes. She found that in the two decades following WWII, 44 game species were introduced, coinciding with a national rise in hunting. But since the early 1970s, when the Endangered Species Act was passed, not one animal has been imported for hunting on public lands, offering some hope for native flora and fauna. Hawai'i is unique nationwide in that all game animals are non-native species, with many being invasive, which poses a significant challenge to the State's desire to protect endangered species and also provide hunting opportunities.

While students from Dr. Lepczyk's class and lab have gone on to graduate school and jobs with agencies, universities, and non-profits, what's most important to him is that they have an education offering a lifetime of fulfillment. "I want them to be independent thinkers and socially responsible citizens who have the tools and knowledge to reflect deeply about the things they care about," he says. And the sentiment mirrors his teaching: lofty in ideals yet firmly grounded on the earth.

Dr. Lepczyk with students Darcey Iwashita (left) and Alisa Davis (right) holding photos of some friends they've made during the course of their work.



NREM student Mark Chynoweth studies movement patterns of feral goats using GPS collars.



Teaching a Community to (Grow) Fish

“T

hey called me the Wizard of Oz,” Harry Ako (MBBE) admits, “because when I told them how to do things, it worked!”

Dr. Ako and his team, including graduate student Kiara Sakamoto, had gone to American Samoa for six weeks to instruct a group, including High Talking Chief Afoa Apela Afoa, on how to build a simple and easily maintained aquaponic system. Created by Dr. Ako, it offers sustainable, low-impact production of tilapia, lettuce, and kai choi, using only 2% as much water as traditional farming methods for six times more productivity. Such a system is well suited to the Pacific islands, where land and fresh water are at a premium.

The self-contained nature of aquaponics, in which fish create nutrients for plants, which purify the water for the fish, is appealing conceptually, but it must be done right in practice. A similar system had been attempted, unsuccessfully, in Samoa before the CTAHR group came down. “Education, the human element,” Dr. Ako answers when asked how his methods differed. “We taught them what to do, and then we stayed. Every day we’d watch them and make sure they were doing it right.”

Dr. Ako’s grad students are integral to this process, in Samoa and in Hawai‘i. They test the water chemistry—essential for keeping the system running correctly—and teach others to do it; assist in building growbeds; be everywhere and do everything Dr. Ako may not have time for. Requests are coming in constantly for help in setting up and maintaining systems of widely varying sizes and complexity; this is clearly an idea whose time has come.

So thought the judges at the prestigious Social Enterprise Conference when team collaborator David Walfish proposed expanding the successful Samoan model into a business plan, Ho‘oulu Pacific, that would expand these systems across the Pacific. “About that contest,” says Dr. Ako—“when you look at all we did in Samoa, it was really no contest.” The group won, beating out more than 80 international teams from such schools as Harvard, Cambridge, Wharton, and MIT Sloan. The money will come in handy for getting the business plan, created by PingSun Leung (NREM), off the ground. But for Dr. Ako and his team, the real prize came before that, when they saw dreams of feeding their communities and starting their own businesses becoming reality for that first group in Samoa.

The aquaponic system created by Dr. Ako offers sustainable, low-impact production of tilapia, lettuce, and kai choi, using only 2% as much water as traditional farming methods for six times more productivity.



Samoa farmer Apela Afoa learning to test and analyze water quality for ammonia, nitrite, nitrate, and oxygen using liquid testing kits.



Good Energy House

“

I am pretty tired, but my work here is really gratifying and fun,” is Mary Martini’s (FCS) comment

on the work that’s gone into rehabilitating the Energy House, first built in the ’70s as a model for sustainable living and now the site for youth science programs of the Family Education Training Center of Hawaii (FETCH), and offices for Family and Consumer Sciences and 4-H. Both statements are understandable. It took a huge amount of effort to get the building to its present multipurpose, inviting, and structurally sound state, and it takes just as much commitment, thought, and “sweat equity” to sustain it. But the fun, and the benefits, come from sharing the work—and the excitement. The multidisciplinary program staff includes graduates and interns from across four CTAHR departments.

“We don’t just sit around and talk at or with the youth—we show them how to do things,” explains Dr. Martini of FETCH’s philosophy. Concrete tasks such as carpentry, gardening, and hydroponics give children (and adults!) a sense of accomplishment and mastery. This combination of the practical and the idealistic extends to the physical surroundings. Bookshelves bulge with books on gardening, CSA farming, building, nutrition, cooking, crafts, and music. In a small kitchen, hopeful future chefs are mentored—and given a sense of purpose. Members of a FETCH family work together to prepare, serve, and eat an evening meal—and learn better communication skills. The land around the house overflows with the edible bounty incorporated into those meals. Fruits and vegetables burst out of garden beds, hydroponic systems, and less conventional containers, like the sweet potatoes twining from stacks of old rubber tires. (Instead of digging for the harvest, student gardeners just dismantle the stack). The edible landscaping provides enough produce to support a family of four and serves as a model sustainable urban garden. The house roof, designed to promote cool airflow through the structure, will hopefully soon support solar panels.

But the “energy” in Energy House isn’t just solar electricity. There’s good energy here, purpose and momentum combined with a gentle peace. A participating teen catalogues, in minute detail, the guppies in tanks on the porch, while an upstairs office buzzes with scheduling for the next family event. The programs in the small red building aren’t just working to generate electrical power and food fuel, important though these are—they’re growing sustainable families and communities, too.



Mary Martini (right) with recent CTAHR graduate and program coordinator Adam Baker (left).

FETCH garden manager and TPSS student Justin Long leading a tour of 5th-graders through the Energy House gardens.



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