



UC DAVIS AND JAPAN:
PARTNERING FOR A BRIGHTER FUTURE

UC DAVIS
UNIVERSITY OF CALIFORNIA

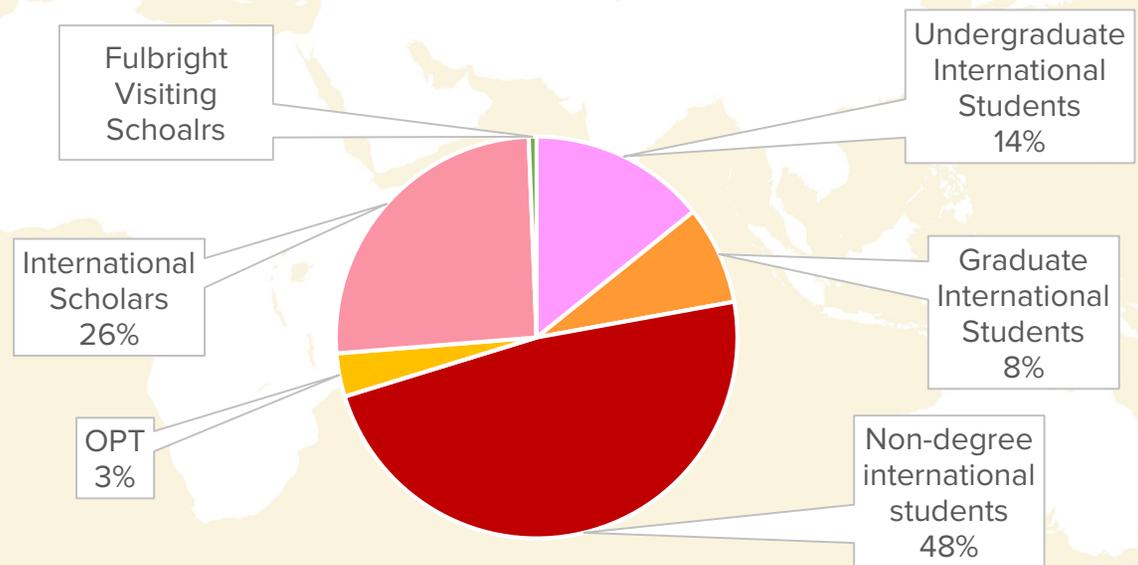
UC DAVIS AND JAPAN

UC Davis has a proud history of partnering with universities and government organizations in Japan. Together, our researchers are finding ways to predict seismic activity and prevent damage from earthquakes, develop new green technology to fight climate change, and preserve Japanese heritage. Since 2010, UC Davis researchers have co-authored over 1,700 scholarly publications with colleagues in Japan.

Together we have made new scientific breakthroughs, benefited from rich cultural and intellectual exchanges, and helped to prepare the next generation of leaders with world-class teaching and training.

UC Davis is committed to strengthening out dynamic and fruitful partnerships in Japan and across Asia. As our university expands its presence in the region, we look forward to continuing our work with partners in order to increase knowledge, exchange ideas, and positively impact society worldwide.

UC Davis Japanese Students and Scholars





PREVENTING EARTHQUAKE DAMAGE

For over 25 years, UC Davis researchers have partnered with Japanese colleagues to study earthquakes.

Our research includes predicting when and where major earthquakes may occur, modeling the effects of earthquakes, and testing stronger ways of building structures to help lessen the damage from future quakes.

UC Davis is home to the largest geotechnical centrifuge in the United States and one of the most sophisticated virtual reality laboratories in the world. Using these advanced systems, our researchers can test how different types of structures stand up to earthquake stress. Partnering with our counterparts across the world, our research is helping to save lives and prevent damage from future earthquakes by building better engineered buildings.

Most recently, UC Davis researchers presented their “seismic nowcasting” model at the Japan Geoscience Union. Like a thermometer of earthquake stress, the model shows Tokyo is likely to have a major earthquake soon.

Our work is providing valuable information to policy-makers, scientists, and governments to help with emergency preparedness and engineering policies.

SMART HOMES OF THE FUTURE

Homes and personal vehicles contribute to approximately 44% of greenhouse gas emissions in the United States, making them a major factor in fighting climate change. To advance research and adoption of sustainable home technology, UC Davis and Honda have partnered to build the Honda Smart Home.

The Honda Smart Home is a living laboratory for green home technology. The home uses 50% less energy and is 300% more water efficient than a typical U.S. home. Built from recycled and green materials, it features solar panels, electric vehicle charging, geothermal heating and cooling, advanced lighting and energy efficient appliances. UC Davis' Western Cooling Efficiency Center and California Lighting Technology Center both contributed significantly to the home's design.

With full-time residents – typically UC Davis students or staff – the home provides realistic data on home energy use to researchers at UC Davis, Honda and utility companies.

The Honda Smart Home was completed in 2014. It is located in UC Davis' West Village community, the largest planned net zero energy housing project in the nation.





REVOLUTIONIZING TRANSPORTATION

The Institute of Transportation Studies at UC Davis (ITS-Davis) is the leading university center in the world on sustainable transportation, hosting the National Center on Sustainable Transportation since 2013 (awarded by the U.S. Department of Transportation). It manages large research initiatives on energy, environmental, and social issues.

For many years, Japan's leading automotive

companies have been valued partners in sustainable transportation research. With their support, ITS researchers are leading influential international, national, and regional initiatives on electric, automated, and shared vehicles, low carbon fuels, urban mobility, bicycle use, and much more. In addition to technology research, ITS provides critical information and guidance to policy makers, empowering them to make more effective transportation and energy laws.

Our meaningful UC Davis-Japan collaboration is embodied in the lifetime work of Professor Ryuichi Kitamura, who passed away in 2009. Dr. Kitamura's pioneering career in transportation research spanned his time at UC Davis and Kyoto University. Faculty from both universities have established a graduate student scholarship fund and together choose recipients who foster intellectual and cultural exchange between East and West, just as Dr. Kitamura did.

BREWING UP BREAKTHROUGHS

Even as demand for coffee grows worldwide, climate change and new diseases pose new challenges for coffee growers.

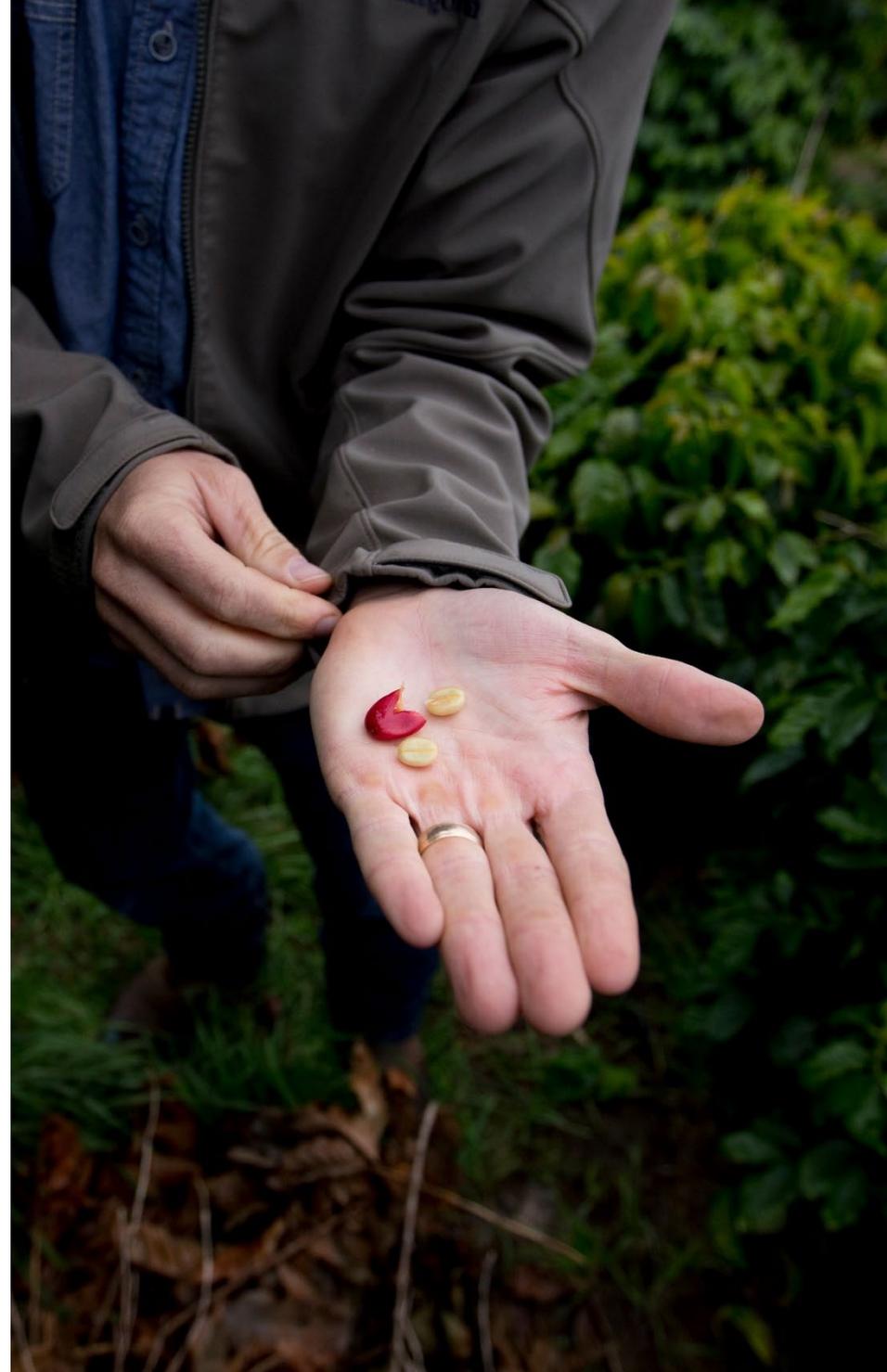
To better understand the coffee plant, UC Davis researchers published the first public genome sequence for *Coffea arabica*, the species responsible for more than 70 percent of global coffee production.

Publically available to researchers and companies worldwide, the genome sequence for *Coffea arabica* contains information crucial for developing high-quality, disease-resistant coffee varieties that can adapt to the climate changes that are expected to threaten global coffee production in the next 30 years.

Funding for the sequencing project was provided by the Suntory group, through its Suntory Global Innovation Center Limited, located in Kyoto, Japan. The *C. arabica* sequencing was of particular interest for the Suntory group, whose many brands include coffee drinks, marketed in Japan.

"We anticipate that functional analysis of the genes identified by the *C. arabica* sequencing will lead to development of new, disease-resistant coffee varieties with enhanced flavor and aroma characteristics," said Yoshikazu Tanaka, senior general manager for Suntory Global Innovation Center Limited, at the time of the project release.

Researchers at the UC Davis Coffee Center and its partner departments continue to research ways to improve the health, heartiness, sustainability, and flavor of coffee plants and products.





IMPROVING RACEHORSE PERFORMANCE

In partnership with the Japan Racing Association, UC Davis researchers have investigated the impact of treadmill training on racehorse performance.

The researchers found that young racehorses that had weekly training sessions on the treadmill increased their aerobic capacity, showing improvement over horses that were trained traditionally under saddle. None of the

horses in the study experienced any injuries, pointing to treadmill workouts as a safe and effective training tool for performance horses.

Research like this is just one example of the global reach of the UC Davis School of Veterinary Medicine is ranked #1 in the world. Recognized as a leader in equine medicine, the teaching hospital serves approximately 50,000 patients from around the world every year. It

is particularly renowned for equine research and providing world-class care for horses ranging from globally ranked athletes to beloved companion animals.

The School of Veterinary Medicine regularly partners with horse racing and breed clubs around the world to advance equine research and care.

INSPIRING DISADVANTAGED YOUTH

Every summer, UC Davis' Japan Children's Internship Program brings students to Japan to mentor Japanese orphans and foster-children living in children's homes.

Throughout their 10-week internship in the children's homes, UC Davis students not only care for, play with and teach the children, they also provide an opportunity for these disadvantaged youngsters to scale up their dreams and their ambitions.

The program offers invaluable language and cultural immersion for UC Davis Japanese students, who live in the children's homes throughout their internship. Through this cultural and educational exchange, this program gives Japanese youth a view of the greater world, and provides the mentorship and examples that will support them to aspire to higher education.





PRIVATE SUPPORT

Your support will help to accelerate the collaborative innovation and research UC Davis and Japan conduct. We invite you to join us in expanding our projects in Japan and beyond.

For more information on private support, please contact Marina Tan Harper at mtharper@ucdavis.edu or +1 (530) 754-2021.