

CHILE AND UC DAVIS: TRANSFORMATIVE GROWTH TOGETHER



CLOSE HISTORICAL TIES

Chile is one of the world's largest exporters of grapes, apples, peaches, nectarines, pears and avocados. The booming fruit industry traces its roots back to the remarkable achievements and contributions of more than 50 Chilean graduate students who came to the UC Davis in the 1960s and '70s.

In 1965, the Convenio Chile-California, a 10-year exchange agreement between Chile and the University of California, sent UC professors to Chile and brought Chilean graduate students to UC campuses. Most Chilean students came to the Davis campus to study agriculture. The fruit boom that followed in the mid-1970s transformed the Chilean countryside and contributed to the nation's rising standard of living.

Many of these UC Davis alumni returned to teach at universities in Chile and shared their knowledge with farmers and students, creating a multiplier effect. They provided technical expertise on what crops to introduce to Chile and how to grow them. They identified California fruits and vegetables that grew well in Chile, leading to the country's thriving export market today. In addition to introducing new plant varieties, these graduate students shared management techniques and scientific research principles they learned at UC Davis, helping Chile's academic and agribusiness ecosystems to grow and flourish.



Notable UC Davis alumni in Chilean agriculture (pictured above, from left):

- José Domingo Godoy, fruit producer
- Anthony Wylie, former dean of agronomy at Santo Tomás University
- Carlos Fernández, former director at the nonprofit business incubator Fundación Chile
- Edmundo Bordeu, enology professor at Catholic University of Chile

Photo by José Luis Risetti, El Mercurio.





CHILEAN STUDENTS AND SCHOLARS AT UC DAVIS

Faculty and Staff with Connections to Chile

UC Davis continues to work strategically with partners in Chile to welcome Chilean students to campus. In 2008, former Chilean President Michelle Bachelet signed a comprehensive memorandum of understanding with UC Davis, and UC Davis has been a preferred partner for many Chilean government initiatives ever since.

UC Davis' university partners in Chile include:

- Universidad Andres Bello
- Universidad Arturo Prat
- Universidad Austral de Chile
- Universidad de Chile
- Universidad de Concepción
- Universidad del Desarrollo
- Universidad Diego Portales
- Univ<mark>ersida</mark>d de <mark>Talca</mark>

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Since 2013, UC Davis researchers have coauthored over 176 scholarly publications with colleagues in Chile. Currently, there are approximately 44 faculty, scholars and staff who maintain connections to Chile. Over the years, nearly 50 Chilean scholars and fellows have come to UC Davis to conduct research. UC Davis remains committed to strengthening our dynamic and fruitful partnerships in Chile.

Relationship data is dynamic; information contained herein may be incomplete. Last updated 05/03/2019.

UCDAVIS²



UC DAVIS CHILE LIFE SCIENCES INNOVATION CENTER: PROTECTING NORTHERN PATAGONIAN LAKES

In 2015, UC Davis launched the UC Davis Chile Life Sciences Innovation Center in Santiago. Driven to generate economic impact and traceable social development in Chile and across the globe, the center develops technological solutions based on collaborative science and delivers efficient, effective applications to the fields of food and agriculture. In addition, the center has expert capabilities to support the transfer of life science technologies to the Chilean industry and links UC Davis education programs with Chile. In partnership with Chile Lagos Limpios, the center is dedicated to protecting 23 national lakes in Chile. These efforts are based on the experiences of the UC Davis Tahoe Environmental Research Center, which has kept Lake Tahoe's waters pristine for nearly 60 years. In 2019, UC Davis donated the first monitoring station at Panguipulli Lake, and later another station at Ranco Lake, to gain a better understanding of the lakes' ecosystems. The information collected is used to create models to determine the best methods to balance socioeconomic development and environmental conservation.



DIVERSIFYING THE AGRICULTURE INDUSTRY

At the UC Davis Chile Life Sciences Innovation Center, researchers are developing new bioproducts to help the agriculture industry become more sustainable and profitable.

Bioproducts are developed from natural resources and agricultural waste products, and can often replace more expensive, less effective chemical products. For example, UC Davis scientists are researching ways to reduce reliance on agrochemical treatments to fight pests. After decades of relying on chemical pesticides, farmers are beginning to encounter pests that can resist traditional pesticides. UC Davis researchers at the Life Sciences Innovation Center are leading research into fungi, bacteria and nematodes that can be used to develop new bioproducts that protect crops from pests.

PROTECTING GLOBAL HEALTH

More than 50 Chilean students have completed postgraduate training at UC Davis' globally topranked School of Veterinary Medicine and have returned to Chile as leaders in promoting the health of animals, people and the environment.

For more 50 years, UC Davis has partnered with the University of Chile Faculty of Veterinary and Animal Sciences (FAVET). In fact, many FAVET professors are UC Davis alumni.

Today, our collaborations with FAVET—which include academic exchanges, joint research, postgraduate studies and more—are focused on One Health education and research. One Health is a holistic approach to promoting health, and finds solutions by studying how animal health, climate and environment, and human health interact. For example, many threats to human health, such as the Zika virus, stem from human interactions with wild animals or relate to environmental issues.

Together, FAVET and UC Davis are finding new solutions to global issues, and continuing to build capacity in One Health medicine in Chile.





PROTECTING FOOD, FIGHTING HUNGER

After being harvested, large amounts of fruits and vegetables never make it to the dinner table—especially in rural regions where producers often struggle against pests and rot that attack their products on the way to market.

Together with partners in Chile, the UC Davis Postharvest Technology Center is studying how to keep fruit fresh for longer while preserving taste, and how to improve handling of crops like stone fruit, citrus, avocados and berries. Researchers are also addressing the effects of processing on quality and nutritional characteristics, microbial food safety, and consumers' attitudes and perceptions. UC Davis' Feed the Future Innovation Lab for Horticulture has been developing technology to protect fruits and vegetables after harvest. Many of its technologies are developed to help low-income, smallholder farmers, and leverage low-cost materials or natural energy sources. For example, the lab has developed several low-cost technologies for drying fruits, vegetables, beans and seeds, including a solar-powered dryer.

The Innovation Lab partners with colleagues and distributes its solutions throughout Central America via its regional center at the Pan-American Agricultural School in Zamorano, Honduras.

FIGHTING CLIMATE CHANGE

By 2050, the world's population is projected to expand to 9 billion people. As our population grows, the demand for food, fuel and consumer goods will skyrocket, placing an unprecedented strain on the global agriculture industry.

The impacts of climate change on agriculture will have repercussions for livelihoods, food production and national economies. At the same time, breakthroughs in the agricultural sector have great potential for reducing greenhouse gas emissions and fighting climate change.

In partnership with colleagues in Chile, UC Davis has embarked on an enormous effort to support climate change policy and develop solutions. This effort includes agricultural management techniques to lessen the impact of climate change, as well as research on air quality, water resources, ecological forecasting, clean technologies and clean energy, past climate change events and ocean studies.

As our understanding grows, we are finding solutions that can be applied in Chile and beyond. For example, UC Davis plant breeding programs are developing new crops that can thrive in changing climates, securing the future of food for our growing population.







EXPLORING OUR UNIVERSE

UC Davis physics professor Tony Tyson is the chief scientist at the Large Synoptic Survey Telescope (LSST) in the Cerro Pachón ridge in northern Chile. The project involves more than 40 research institutions and national laboratories, with a total investment of \$1 billion.

The LSST will help address profound scientific questions, but the project's design is simple: conduct a deep survey over an enormous area of sky, quickly capture images of the entire visible sky every few nights, and continue for 10 years to achieve astronomical catalogs thousands of times larger than any previously compiled. Once completed, the telescope will be used to conduct a 10year survey of the sky that will address pressing questions about our universe. Using revolutionary technology, researchers will investigate the nature of dark matter and dark energy, hazardous asteroids, the remote solar system, the formation of the Milky Way galaxy and more.

Slated for completion by 2022, the 8.4-meter LSST will generate 100 petabytes of data accessible to anyone in the United States or Chile.



AN INVITATION

Your support will help our collaborative teams of UC Davis and Chilean researchers cultivate talent and make new discoveries. We invite you to join us in expanding our projects in Chile and beyond.

For more information on private support, please contact Juan J. Losada at <u>ilosada@ucdavis.edu</u> or +1 (530) 219-6064.