UC DAVIS
COLLEGE OF AGRICULTURAL AND ENVIRONMENTAL SCIENCES

2017–2018 Endowed Fund Report

Will W. Lester Chair Fund in Pomology

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ENDOWMENT PURPOSE

The Will W. Lester Endowed Chair in Pomology was established in 1986 by the late Will Lester. Mr. Lester received his undergraduate degree in horticulture from UC Davis in 1940, and after his service in World War II, became an orchardist. He was an active contributor to the University Cooperative Extension Service and later served as director of the UC Davis Alumni Association and trustee of the Cal Aggie Foundation. He created the endowment to support the field of pomology, with the expectation that the chair holder will not only conduct exemplary research in the area, but will teach undergraduate and graduate courses and otherwise contribute to the scholarly activity of the department.

RESEARCH

The Will W. Lester Endowment provided vital support to the salaries and work of graduate students in my lab. Our work focused on the identification and characterization of key cellular and molecular determinants regulating the processes associated with fruit maturation and fruit postharvest storage. We are emphasizing the study of the biochemical factors affecting fruit climacteric behavior and the development of improved preharvest and postharvest practices.

TEACHING

I am the Instructor of Record of 3 courses: (i) PLS100AL (Undergraduate Plant Sciences Core Course, Laboratory of Plant Physiology) In this course, students are introduced to several basic topics of plant/fruit physiology and biochemistry; (ii) BIT161B (Undergraduate Plant Biotechnology Course) In this course, students are trained on the use of Databases and introduced to DNA/RNA techniques and plant transformation; and (iii) PBI200C (Graduate Plant Biology Core Course) where the students are exposed to an arrays of subjects that will be an important component of their Qualification Examinations.

STUDENTS

The Will W. Lester Endowment supported the work of 3 graduate students; Ms. Macarena Farcuh (Hormone balance and sugar metabolism reprograming in non-climacteric fruit); Ms. Kamolchanok Umnajkitikorn (Silencing of CHLOROPLAST VESICULATION promotes the tolerance of crops to water-deficit stress and high CO2) and Ms. Shiqi Zhang (Vacuolar sodium/proton antiporters). These students were also Teaching Assistants in the undergraduate courses PLS100AL (Farcuh and Umnajkitikorn) and BIT161B (Zhang).

OUTREACH

The Will W. Lester Endowment contributed to support high school students from the Biotechnology Program of the Davis High School. Also undergraduate students, working as research interns as well as visiting undergraduate students from the University of California Young Scholars Program, worked in the laboratory in different research projects partially supported by the W.W. Lester Endowment. These students participated and trained in new modern techniques in cellular and molecular biology. In addition, the students cooperated in the different field trials and had the opportunity of interaction with farmers directly.

NOTEWORTHY ACCOMPLISHMENTS

During 2017-2018, the research group published research papers in many top-notch journals (Journal of Experimental Botany, Plant Cell, Plant Physiology, Science Signalling, Plant Biotechnology Journal, etc.). In all these publications, the financial support of the Will W. Lester Endowment was acknowledged. The group presented their work at many International and National Congresses in: USA, Canada, Argentina, Uruguay, Israel, Turkey, China, Spain. The Endowment also contributed to the visit of scientists from China, Israel and Uruguay.

FUTURE USE

We are actively involved in the generation of crop plants with improved water-use-efficiency and nitrogen-use-efficiency. We are also continuing our work towards the development of fruit trees with improved levels of water-deficit tolerance. These studies will contribute to the development of crops with enhanced tolerance able to sustain the adverse environmental conditions brought about climate changes.

THANKS

I wish to express my gratitude to the late Will Lester, to his family and to the Will W. Lester Endowment. The Endowment makes possible to support the work of graduate and undergraduate students in areas of investigation that are vital for California's agriculture: The improvement of crop nutritional value and the development of crops with enhanced water- and nitrogen-use-efficiency. The support provided by the generosity of the Lester family makes this research possible.

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