

**DEPARTMENT OF ENVIRONMENTAL SCIENCES
FRANK T. BINGHAM MEMORIAL
FELLOWSHIP IN SOIL SCIENCE**

Graduate students in the Department of Environmental Sciences are encouraged to apply for the Frank T. Bingham Memorial Fellowship in Soil Science. The award will enable students to pursue short-term specialized training at other government, university, or private facilities and will cover expenses up to \$2,000 during the calendar year of 2009-2010 academic year.

Applicants must be enrolled and in good standing in a program leading toward a graduate degree in Soil and Water Sciences. They must obtain approval of their major professor and a written invitation to pursue the training under the direction of a mentor at his/her institution. The fellowship will be viewed not merely as a travel and expense fund to use a specific piece of equipment, but must demonstrate an educational component with an identifiable mentor.

In addition to the written invitation, applicants should prepare a brief application of no more than one page (application on third page). The deadline for completed applications is **December 15, 2009**. The award(s) will be announced on January 7, 2010. Dispersal of funds prior to training is possible. Expenses incurred prior to or following the December 15th deadline are eligible as long as they are incurred before the start of the 2010-2011 academic year.

FRANK T. BINGHAM

Professor of Soil Science 1921-1987

Frank T. Bingham was born in Pasadena, California, in 1921, and passed away in Riverside, California, on January 14, 1987. He first came to the University as a summer employee at the Citrus Experiment Station while attending secondary school in Riverside. In 1939, he enrolled at UC Berkeley, majoring in soil science. Each summer he worked as a laboratory assistant in the Department of Soils & Plant Nutrition, now the Department of Environmental Sciences at UC Riverside. He graduated from Berkeley in January 1943 and immediately joined the U.S. Navy and served in the Pacific Theater as a gunnery officer aboard the USS Indiana.

Following his military discharge, he joined UC Riverside and worked for about one year, again in the Department of Soils and Plant Nutrition. In 1947, he returned to UC Berkeley, undertaking graduate study under the direction of Hans Jenny. Frank completed his Ph.D. degree in Soil Science in 1951 and once more returned to UC Riverside as a junior chemist in the Department of Soils & Plant Nutrition. His dissertation research involved the development of a laboratory method to assess the availability of soil phosphorus to crops. The method, which now bears his name, proved to be very successful and is still used today, particularly in soils that are high in organic matter.

At UCR, Frank was promoted through the ranks, becoming Professor of Soil Science in the College of Natural and Agricultural Sciences and Chemist in the Agricultural Experiment Station in 1967. During his early career he continued research on phosphorus in soils and its availability to crops. In recognition

for his research contributions on soil phosphorus chemistry, he was awarded the Blue Ribbon Paper award of the Soil Science Society of America in 1962.

Frank spent a large part of his career studying the chemistry of arid-zone soils and examining the trace element chemistry of soils and their plant availability. He made significant contributions to our understanding of soil salinity effects on crop growth as well as the chemistry of boron in soils and factors influencing its phytotoxicity. He also made notable contributions in the area of environmental quality, particularly as related to soil contamination by trace elements, their phytotoxicity and accumulation by food crops. He was among the first to show that plant availability of trace elements is dependent upon, and influenced by, inorganic ion speciation in the soil solution. His work on the chemistry of soil aluminum was also widely recognized. For example, the Swedish National University invited him to speak at an international workshop on aluminum toxicity.

Bingham was a recognized expert in arid-zone agriculture and was frequently invited to foreign nations to assist in obtaining solutions to salinity, sodicity, and boron problems of agricultural soils. He lectured and conducted research in Egypt and Chile under the auspices of the Ford Foundation and the Rockefeller Foundation and was a senior Fulbright lecturer in Spain. His accomplishments in research led to invitations from scientists in Venezuela, Peru, and Brazil to assist in solving their soil problems. His fluency in Spanish, in combination with his professional expertise, was a great asset to them in this work.

Twenty-five students completed graduate degrees under the direction of Bingham. Academically, he was a demanding teacher; personally, he was a caring individual. Through frequent correspondence and occasional visits, he established long-lasting professional, as well as close personal relationships with his students, which he maintained until his death. Bingham hosted numerous postdoctoral researchers from the U.S. and other countries, including Israel, Korea, Egypt, People's Republic of China, Chile, Spain and Brazil.

Bingham was a member of Alpha Zeta, Sigma Xi, Soil Science Society of America, American Society of Agronomy, American Society of Horticultural Science, American Institute of Biological Sciences, Western Soil Science Society, and the International Soil Science Society. He was a Fellow of the Soil Science Society of America and the American Society of Agronomy and elected president of the campus chapter of Sigma Xi.

At UCR, he served as a member of the Privilege and Tenure Committee and chaired the Personnel Section of the Budget Committee of the Academic Senate. He was also the campus faculty representative to the National Collegiate Athletic Association and an advisor to the Chancellor on athletics.

Frank was an outdoor person and enjoyed skiing, fishing and hiking. Playing tennis was his lifelong hobby. Nothing would stop him from spending the lunch hour of each working day on the tennis courts. He was as enthusiastic in his recreation as in professional activities. Although in his last year he realized his life was drawing to a close, he maintained an active personal and professional life almost to the last moment.

BINGHAM FELLOWSHIP APPLICATION

Name: _____

UCR Faculty Mentor: _____

Duration of Training: _____

Please answer the following questions on a separate sheet of paper:

1. List the reason(s) you are applying for this award.
2. List the type of specialized training you are seeking.
3. List the facilities, equipment and/or training available at the host institution that is not available at UCR.
4. List how the training will facilitate your thesis/dissertation research.

Submit to:

Dr. Linda Fernandez,
Scholarship Committee,
Department of Environmental Sciences

Applications can also be filed electronically by sending them to:
linda.fernandez@ucr.edu