



COLLEGE OF AGRICULTURAL AND ENVIRONMENTAL SCIENCES
AGRICULTURAL EXPERIMENT STATION
COOPERATIVE EXTENSION
DEPARTMENT OF VITICULTURE AND ENOLOGY
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Postdoc position in Viticulture and Enology

Location: UC Davis Department of Viticulture and Enology - Runnebaum Lab

Description: A postdoctoral position is available in the Runnebaum Laboratory in the Department of Viticulture and Enology at UC Davis, College of Agricultural and Environmental Sciences.

We are looking for a highly motivated individual with a background in multiscale modeling and multivariate statistical analysis to lead the development of modeling correlations, including predictions, between site characterization, and grape juice and wine chemistry. The overall goal of the research plan is to quantitatively establish connections between vineyard site, fermentation characteristics and wine chemistry and to assess differences between growing sites and reproducibility across vintages. The data encompass three categories: 1) site climate and soil, including data for estimating evapotranspiration; 2) fermentation; and 3) juice and wine chemistry.

- 1) Microclimate and evapotranspiration modeling (Runnebaum collaborating with McElrone): Further characterization and modeling of the microclimate and evapotranspiration conditions across sites provides deeper insight into the physical conditions to which the plant is exposed (microclimate) and how it is responding in the short-term by estimating evapotranspiration and correlating with vegetation measurements (e.g. NDVI), as well as data from Planet's Earth-imaging satellites, and irrigation management data, including in the context of heat waves.
- 2) Fermentation Modeling (Runnebaum): Fermentation and chemical data characterizing these sites can be analyzed to incorporate biological and multivariate statistical modeling to uncover characteristics that describe a site while differentiating the site from others within the experimental study. We have observed that different initial must conditions result in a variety of fermentation profiles, even under rigorous temperature control during fermentation.
- 3) Juice and Wine Chemistry (Runnebaum): Grape varieties grown across a range of microclimate and soil conditions provides an excellent opportunity to better understand how a single clone of a variety is able to adapt to its growing conditions. This adaptation will be measured by using juice and wine chemistry data.

Send applications by email directly to Dr. Ron Runnebaum (rcrunnebaum@ucdavis.edu) with the subject line "Postdoc Application". Please include a cover letter (containing research summary and career goals), curriculum vitae, and contact information of three references.

Qualifications:

A successful candidate should meet the following requirements:

- A recent Ph.D. in Engineering or related field
- Extensive experience in multiscale modeling;
- Experience in multivariate statistical analysis, especially using R software, XSTAT or similar;
- Experience in viticulture and enology is a bonus but not essential.

Other Responsibilities:

- Conduct research projects independently: design and execute experiments, analyze and interpret data;
- Write results in manuscripts for publication in peer-reviewed journals;
- Collaborate with other laboratories and industry by consulting on the design of their projects, executing the instrumental analysis experiments and reporting on the results;

Position is for one year with renewal for a second year possible upon satisfactory progress. **Available immediately.**