

Professor Philipp Zerbe, UC Davis

Investigating Plant Terpenoid Metabolism and Bioproduct Applications



Wollemi Pine (Wollemia Nobilis) at the UC Botanical Garden - photo © Alex Madonik 2024



Join us on Sunday, January 19, 2025 at the North Berkeley Senior Center for networking, a buffet lunch, and a chance to explore the exotic chemistry of plants. Professor Philipp Zerbe will present new results from his laboratory at UC Davis, including their studies of the scent compounds from the Wollemi Pine (shown above). This ancient species dates to the era of the dinosaurs, and was thought to be extinct until its discovery in the remote mountains of New South Wales, Australia in 1994. Its survival in the wild is threatened, and the UCB Botanical Garden is one of many centers working to preserve the species. [Professor Zerbe is working with researchers at the Botanical Garden](#) to study the unique chemistry of this mysterious plant.

Location: North Berkeley Senior Center, 1901 Hearst Ave, Berkeley CA 94709

Cost: \$20 / \$10 for students and unemployed ACS members

[Lunch Reservations \(12:00 PM\)- Please Click Here](#)

If you can't join us in-person, you can still join us online!

[Register for the free Zoom Meeting at 1:00 PM- Click Here](#)

We look forward to seeing you on January 19th!

You can see the Wollemi Pine for yourself in bed 508 at the [UC Botanical Garden](#), open 10 AM to 5 PM every day except Tuesday and holidays.

Abstract

Plants are nature's master chemists; they deploy complex networks of specialized metabolites to interact with other organisms and adapt to their environment. Among these metabolites, terpenoids encompass the largest class with critical functions in plant development, chemical ecology and stress adaptation. Terpenoid chemical diversity also offers a rich source for bioproducts, including flavors, fragrances, pharmaceuticals and more. A deeper understanding of the mechanisms underlying the diversity of plant terpenoid metabolism can offer innovative avenues toward agricultural and other industrial applications. Toward this vision, the Zerbe Lab integrates functional genomics, metabolomics and various protein biochemical and genetic approaches to investigate the biosynthesis and physiological function of terpenoids in food, bioenergy, and medicinal plants. We will discuss the discovery of common and species-specific terpenoid pathways across different plant species that provide new insights into the evolutionary divergence of terpenoid metabolism, its role in plant-environment interactions, and how this knowledge can be applied toward crop improvement and bioproduct engineering.

About the Speaker

Philipp Zerbe is a Professor at the Department of Plant Biology, University of California at Davis. His research group focuses on the discovery and engineering of specialized terpenoid metabolism in food, bioenergy and medicinal plants. For his research, Dr. Zerbe received the 2015 Arthur Neish Young Investigator Award, a 2016/17 Hellman Fellowship, and 2018 Elsevier Young Investigator Award. Prior to his position at UC Davis, Dr. Zerbe received his PhD from the Ruhr-University Bochum, Germany (2007) with emphasis on structure-function studies plant hormone metabolism, followed by positions as a Postdoctoral Fellow and Research Associate at the University of British Columbia (Vancouver, Canada) where he focused his research on the discovery of terpenoid metabolism with relevance for bioproducts and stress tolerance in food crops and forest trees.