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**P3 Campus Lead**

**Academic interests:** Molecular biology in reference to: Plant responses to insects and pathogens, biosynthesis of important natural products

**Research Focus & Techniques of Expertise:** Research in Dr. Korth's lab focuses on how plants defend themselves against pathogens and insects. The group is especially interested in how natural plant defense compounds are produced in the plant. Tools of molecular biology, such as RNA and DNA blots, microarrays, real-time quantitative PCR, and transgenic plant production are widely utilized in the lab. Collection of plant volatile compounds is carried out in an on-site greenhouse and analysis is performed using gas chromatography.

**Current Research Projects:**

- We are part of a large scale collaborative project aimed at analysis of the *M. truncatula* genome. We make use of expressed sequence tags (ESTs) from insect-damaged leaves of *M. truncatula* and have utilized *in silico* and microarray analyses of EST-based sequences to identify a large number of insect-induced and -suppressed transcripts.
- A related project in the lab deals with regulation of enzymes important for the biosynthesis of terpenoids, the largest and most-varied class of plant natural products. This group of compounds contribute as antimicrobial factors in plant species such as rice, potato, and pepper. Many of the induced volatile signals released from leaves following insect herbivory are terpenoids.
- We study formation of calcium oxalate crystals in legumes, and especially the role that this mineral plays in defense against chewing insects.