

学術講演会のお知らせ

UNL より講師をお招きして、学術講演会を開催いたします。多数のご参加をお待ちしております。

日時 2025年7月10日(木) 16時～

場所 農学研究科 B101

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University of Nebraska-Lincoln

UNIVERSITY of NEBRASKA-LINCOLN



Title: ***Decoding the Genetic Control of Maize Kernel Metabolism***

Abstract: Plant primary metabolism is fundamental to crop performance, influencing everything from growth and yield to environmental resilience and nutritional value. However, elucidating the genetic basis of metabolic traits is profoundly challenging due to the intricate nature of biochemical networks. Our research program aims to decode this complexity by integrating quantitative genetics with systems-level metabolic analysis, primarily using gas chromatography-mass spectrometry (GC-MS) to gain overview of primary metabolism.

This presentation will highlight two key stories from our research. First, by combining quantitative genetics with metabolic network simulation, we uncovered an unexpected connection between allelic variation in enzyme protein structure and the accumulation of kernel metabolites. Second, we investigated the evolution of metabolic diversity by comparing modern maize, landraces, and the maize ancestor, teosinte. This evolutionary analysis is identifying beneficial alleles and nutritional traits lost during domestication, offering clear targets for crop improvement.

Together, these approaches allow us to decipher the hidden connections between genes and metabolite phenotypes. Our work not only illuminates the genetic and evolutionary forces that shape crop metabolism but also provides a strategic framework for re-introducing valuable traits to enhance the nutritional quality and resilience of modern maize.

後援：神戸大学農学部同窓会「六篠会」

：世界展開力強化事業「食」プロジェクト

：神戸大学 国際共同研究強化事業【B型】－国際共同研究育成型－

問い合わせ：神戸大学大学院農学研究科 資源生命科学専攻 応用植物学講座

園芸植物繁殖学研究室 藤本 龍 (5827)



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