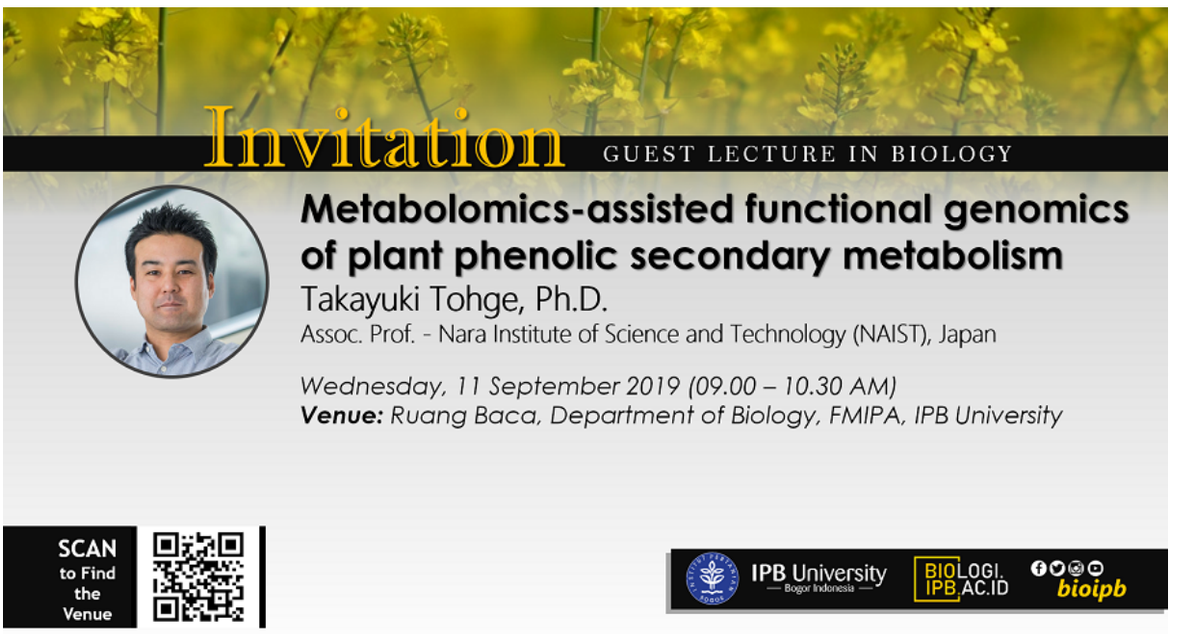
Guest Lecture: Takayuki Tohge, PhD



Invitation to Guest Lecture:

Metabolomics-assisted functional genomics of plant phenolic secondary metabolism

by Takayuki Tohge, Ph.D.
Assoc Prof. - Nara Institute of Science and Technology (NAIST), Japan

Wednesday, 11 September 2019 (09.00 – 10.30 AM)
Venue: Ruang Baca, Department of Biology, FMIPA, IPB University

Abstract: Plant secondary metabolites are widely diversified in their chemical structures, since during the long evolutionary period wherein plants have adapted to the environmental niches, several strategies such as gene duplication and convergent evolution of some key enzymatic genes have contributed to the evolution of the secondary metabolism. For the reason that polyphenolic secondary metabolites play important roles in both biotic and abiotic defenses in seed plants as well as being potentially important bioactive compounds with both nutritional and medicinal benefits for animals and humans. Investigation of this metabolism has been highlighted for long years, but recent technical developments allowing affordable whole genome sequencing as well as genomics and transcriptomics studies and available of natural mutant resources, have resulted in dramatic increase in the number of approaches for functional genomics. We integrated these approaches with metabolomic analysis to refine biosynthetic framework of polyphenolic secondary metabolism including natural variance, tissue and species specificity. I will present our metabolomics-assisted functional genomics approach which resulted in discovery of key genes involved in chemical diversity in Brassica model plants.