

GATERSLEBEN LECTURE



Speaker: **Prof. Dr. Alisdar Fernie**
Max Planck Institute of Molecular Plant Physiology
RG Central Metabolism, Wissenschaftspark Golm,
Potsdam, Germany

Title: **Refocussing plant metabolomics to investigate metabolite function**

Time/Place: **Tuesday, October 29, 2019, 2 pm**
Lecture Hall, IPK Gatersleben

Abstract:

The grand challenge of metabolomics is often claimed to be: *improving its comprehensibility*. Whilst this technical challenge is indeed a major hurdle, I will argue that a more important challenge is that of assigning function to the myriad of chemical structures apparent in (plant) life. Indeed, this is a bigger problem in that whilst we can measure a couple of 1000 metabolites we do not know the exact biological function of very many of the structures – either in planta or with respect to their bioactivities. For secondary metabolism this fact is compounded by the promiscuity of the constituent enzymes rendering reverse genetics a blunt tool to assign the function of specific metabolites since multiple metabolite levels change at once. I will present a possible solution to this and provide some examples whereby natural variance is aiding in our understanding of gene function.

Short bio:

EDUCATION:

1998 D.Phil., University of Oxford: “The Influence of fructose-2, 6-bisphosphate on heterotrophic carbon metabolism”
1995 B.Sc. (Hons.) Biochemistry and Molecular Biology University of Sheffield

EMPLOYMENT HISTORY:

05/2008 Group Leader (W2 position, unlimited) Max-Planck-Institute for Molecular Plant Physiology, Potsdam-Golm, Germany
01/2003-05/2008 Group Leader Max-Planck-Institute for Molecular Plant Physiology, Potsdam-Golm, Germany
01/2001-01/2003 Co-Group Leader Max-Planck-Institute for Molecular Plant Physiology, Potsdam-Golm, Germany
1999-2001 Post-doctoral Fellow, Max-Planck-Institute for Molecular Plant Physiology, Potsdam-Golm, Germany

PUBLICATION (last two):

Zhu, G., Wang, S., Huang, Z., Zhang, S., Liao, Q., Zhang, C., Lin, T., Qin, M., Peng, M., Yang, C., Cao, X., Han, X., Wang, X., van der Knaap, E., Zhang, Z., Cui, X., Klee, H., Fernie, A.R., Luo, J., and Huang, S. (2018). Rewiring of the Fruit Metabolome in Tomato Breeding. *Cell* 172, 249-261 e212.

Zhang, Y., Swart, C., Alseekh, S., Scossa, F., Jiang, L., Obata, T., Graf, A., and Fernie, A.R. (2018). The extra-pathway interactome of the TCA cycle: expected and unexpected metabolic interactions. *Plant physiology* (in press)



Prof. Dr. Nils Stein
(organizer)

**Prof. Dr. Thomas Altmann and
Dr. Astrid Junker**
(host)

If you are interested in personal discussions with the speaker please contact Nicole Wahle (phone: 039482/5219, email: wahle@ipk-gatersleben.de) beforehand.