

gCOE セミナー
第 167 回 臨時生物科学セミナー

日 時 : 2009 年 4 月 3 日 (金) **16:30 ~ 18:00**

場 所 : 東京大学理学部 2 号館
223 号室 (第二講義室)

題 目 : **Regulation of maize plant architecture**

講演者 : **David Jackson (Cold Spring Harbor Laboratory, New York)**

概 要 : Maize domestication and improvement has included selection for enhanced yield through modification of vegetative and inflorescence architecture. Recent advances in maize genomics, and the vast collection of morphological mutants makes maize an attractive system to understand the molecular basis of plant architecture and how genetic selection has influenced yield. Recent work in our lab has focused on pathways that regulate tillering, bract suppression and inflorescence branching. As well as identifying new genes, we are also working hard to assemble pathways, with an eventual goal to understand development at a systems level. We have also started to develop a resource of fluorescent protein tagged maize lines that are extremely useful tools for understanding maize development and cellular organization.

Recent papers on maize architecture from our group:

Giulini, A., Wang, J., and Jackson, D. (2004). Control of phyllotaxy by the cytokinin inducible response regulator homologue ABPHYL1. *Nature* 430: 1031-1034.

Bommert, P., Lunde, C., Nardmann, J., Vollbrecht, E., Running, M. Jackson, D., Hake, S. and Werr, W.B. (2005). Thick tassel dwarf1 encodes a putative maize ortholog of the Arabidopsis CLAVATA1 leucine-rich repeat receptor-like kinase. *Development* 132: 1235-1245.

Bommert, P., Satoh-Nagasawa, N., Jackson, D. and Hirano, H.Y. (2005). Genetics and evolution of inflorescence and flower development in grasses. *Plant Cell Physiol.* 46: 69-78.

Bortiri, E., Jackson, D., and Hake, S. (2006). Advances in maize genomics: the emergence of positional cloning. *Curr. Opin. Plant Biol.* 9: 164-171.

Satoh-Nagasawa, N., Nagasawa, N., Malcomber, S., Sakai, H., and Jackson, D. (2006). A trehalose metabolic enzyme controls inflorescence architecture in maize. *Nature* 441: 227-230.

Gallavotti, A., Yang, Y., Schmidt, R.J. and Jackson, D. (2008). The relationship between auxin transport and maize branching. *Plant Physiology*, 147:1913-23.