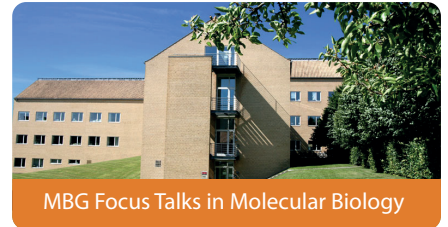


MBG FOCUS TALK

hosted by Section of Plant Molecular Biology



Thursday, 23rd of June 2016 at 9:00

AU Conference Centre, Meeting room2, Fredrik Nielsens Vej

Dr. Giles Oldroyd

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Encoding and decoding calcium oscillations in symbiosis signalling

The ability to take up mineral nutrients, particularly nitrogen and phosphorus, is generally the major limitation to plant growth. A number of plant species have evolved beneficial interactions with micro-organisms that facilitate the uptake of these nutrients. Legumes form symbiotic interactions with mycorrhizal fungi that facilitate phosphate uptake and with rhizobial bacteria that provide the plant with a source of nitrogen. The establishment of these symbioses involves a molecular communication between the plant and the symbiotic micro-organisms in the soil. Mycorrhizal fungi and rhizobial bacteria release signals that are recognised by the host plant and lead to developmental changes associated with the accommodation of the symbionts. Genetic dissection in legumes has defined the signalling pathways involved in these symbioses and this signalling process involves oscillations in calcium within the nuclear region. The symbiosis signalling pathway has become a model for understanding calcium signalling in plants. A number of channels present on the nuclear membranes are known to be essential for the establishment of symbiotic calcium oscillations and a calcium-regulated kinase present in the nucleus is sufficient to decode the calcium oscillations. In this seminar I will present our latest understanding of the molecular components responsible for encoding and decoding symbiotic calcium oscillations.