**White Rust Pathogen of Brassicaceae: *Albugo candida***

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**Summary of the practical:**

*Albugo candida* is an obligate biotrophic oomycete pathogen that causes white blister rust disease in Brassicaceae. It is comprised of many physiological races that infect distinct host species. Some *A. candida* races can also infect various Arabidopsis accessions, thus facilitating the characterization of effectors and resistance genes that are involved in this obligate biotrophic patho-system. *A.candida* induces a potent **immuno-compromised** state following infection of susceptible host plants, which can enable different pathogens to colonize and reproduce in the same tissue.

**Part 1 practical: Part 1 of the practical session will give an overview of the biology of this oomycete pathogen, followed by an examination of the colonization of A. candida infected tissue with trypan blue staining.**

Our analyses of multiple *A. candida* genomes revealed the presence of novel class of secreted CCG protein effector family. Multiple CCG effectors are recognized by an Arabidopsis resistance gene White Rust Resistance 4 (*WRR4*) transiently in *N. tabacum*.

**Part 2 practical: Part 2 of the practical session will give a demonstration and hands on experience to demonstrate the identification of recognized effector candidates transiently in *N. tabacum* by HR assay.**

Some of these candidate effector proteins are also recognized weakly without showing a strong HR. This weak recognition is identified by means of a luciferase assay by Particle bombardment approach.