

# LIFE SCIENCES

## seminar series

### Frank Van Breusegem

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## Redox strategies for crop improvement

**April 28, 2016**

**Thursday, 16:00 – 17:00**

Seminar room 132, pavilion A11  
University campus Bohunice

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Recently, the agro-biotech industry aims to overcome the limitations imposed by the fluctuating environmental stress conditions on crop productivity. A common theme among (a)biotic stresses is the perturbation of the redox homeostasis. As a strategy to engineer stress tolerant crops, many approaches have been centered on restricting the negative impact of reactive oxygen species (ROS) accumulation. However, the current increased understanding of ROS acting as signaling molecules has opened new avenues to exploit redox biology for crop improvement. Key for this is the identification and perturbation of pathways and proteins with regulatory capacities. We conducted several genetic and chemical screens, together with proteomic approaches in order to obtain a more comprehensive overview on the different components of the network that govern the oxidative stress response. These efforts identified several genes as new members of the oxidative stress gene network in plants, together with small molecules that are able to interfere with specific events during the oxidative stress response in plants. The potential of these genes and molecules for providing abiotic stress tolerance in commercially relevant plants will be assessed in the future.