B·DEBATE International Center for Scientific Debate BARCELONA

CRAG CENTRE DE RECERCA EN AGRIGENÒMICA CSIC IRTA UAB

SOPHIEN KAMOUN CV

SPEAKER AT:

THE DEATH OF PLANT CELLS.

FROM PROTEASES TO FIELD APPLICATIONS

October, 2nd and 3rd , 2013, Barcelona

Sophien Kamoun, Head, The Sainsbury Laboratory, John Innes Centre, Norwich Research Park, UK

Sophien Kamoun joined The Sainsbury Laboratory in 2007 and rose to Head of Laboratory in 2009. He also holds the rank of Professor of Biology at The University of East Anglia. Prof. Kamoun received his B.S. degree from Pierre and Marie Curie University, Paris, France, and his Ph.D. in Genetics from the University of California at Davis in 1991. He then was a postdoctoral fellow at the NSF Center for Engineering Plants for Resistance Against Pathogens, UC Davis, and at the Department of Phytopathology, Wageningen University, Netherlands. From 1998-2007, Prof. Kamoun carried out research on oomycete molecular genetics on the faculty at the Ohio State University, Department of Plant Pathology, Wooster campus. At The Sainsbury Laboratory, Prof. Kamoun continues to exploit genomics resources to improve understanding of plant pathosystems, unravel novel processes and concepts in plant-microbe interactions, and devise original disease management strategies based on the gained knowledge. Throughout his career, Prof. Kamoun has made unique and ground-breaking contributions to understanding plant-parasite interactions. His work on oomycete effector biology and pathogenomics has resulted in new approaches to breeding disease resistant crops.

B·DEBATE International Center for Scientific Debate BARCELONA

CRAG CENTRE DE RECERCA EN AGRIGENÒMICA CSIC IRTA UAB

SOPHIEN KAMOUN

SPEAKER AT:

THE DEATH OF PLANT CELLS.
FROM PROTEASES TO FIELD APPLICATIONS

October, 2nd and 3rd , 2013, Barcelona

Effector Specialization Following a Host Jump in the Irish Potato Famine Pathogen Lineage

Accelerated gene evolution is a hallmark of pathogen adaptation following a host jump. However, the biochemical basis of adaptation and specialization to new hosts remains largely unknown. Here, we describe functional specialization of a plant pathogen effector following a host jump. Orthologous protease inhibitor effectors from the Irish potato famine pathogen Phytophthora infestans and its sister species Phytophthora mirabilis are better adapted to protease targets from their respective host plants potato and Mirabilis jalapa. Single amino acid polymorphisms in the inhibitors and their target proteases largely underpin biochemical specialization. These results provide a molecular framework for how antagonistic pleiotropy drives effector specialization in a plant pathogen ultimately resulting in diversification and speciation.

B·DEBATE IS AN INITIATIVE OF: biocat "la Caixa" Foundation

WITH THE COLLABORATION OF: VIB Agrisera Antibodies for plant sciences