

## INTRODUCTION

The world's rapidly expanding populations have created a sense of urgency regarding global agricultural output, which needs to expand by at least 70% by the year 2050. Plants will provide a significant proportion of the world's food supply. This international conference focuses on a group of plant enemies that have a unique style of attack. Instead of simply removing plant tissue, survival, growth and reproduction are enhanced by manipulating the plant to create specialized nutritional resources. This attack strategy can have serious consequences for both natural and agro-ecosystems. Mechanisms of reprogramming host plants remain largely unknown but clearly involve secreted effectors that are applied during attack. Options for defense against reprogrammers include effector-triggered immunity. Historically the phylogenetically diverse plant enemies that reprogram plants have been studied by different groups. This interdisciplinary meeting will bring together the complementary strengths of key international laboratories to discuss advances in our understanding of the enemies that reprogram plants and their associated symbionts, the options that plants have for their defense, and the evolutionary potential of enemies to adapt to plant defense.

## 5 OCTOBER 2015

### ENEMY ATTACK: IDENTITY AND FUNCTION OF EFFECTORS PRODUCED BY INSECTS, NEMATODES, AND PATHOGENS

**11H30** Registration/Welcome Lunch

**13H00** Official opening

- Scientific director of LE STUDIUM, Pr Nicola Fazzalari
- Pr Marion Harris & Dr David Giron

**13H30** Dr Pierre Abad

Root knot Nematode effectors and modulation of plant cell machinery

**14H00** Dr Akiko Sugio

Plant-aphid-symbiont interactions: what are the factors maintaining their association?

**14H30** Pr Sophien Kamoun

Pathogen Effectors as Probes to Study Plant Processes

**15H00** Coffee break

**15H30** Pr Saskia Hogenhout

Multitasking, how single bacterial virulence proteins modulate plant development and attract insect vectors

**16H00** Pr Jeff Stuart

The Hessian fly as a model for the discovery of effector-encoding *Avr* genes in insects

**16H30** Pr Elisabeth Huguet

Unraveling candidate effectors expressed by plant manipulating insects

**17H00** Poster session / Wine & Cheese

**18.30** LE STUDIUM LECTURE

Dr David Giron

Insectes & Plantes: le secret de la jeunesse éternelle

LE STUDIUM  
LECTURES  
TOURS | 2015

ENTRÉE LIBRE

5 Octobre 2015 - 18h30

## Insectes & Plantes: le secret de la jeunesse éternelle

Hôtel de Ville, Salle des Mariages  
Boulevard Heurteloup  
37000 Tours

### INTERVENANT

Dr David GIRON

CR CNRS - Directeur adjoint de l'Institut  
Institut de Recherche sur la Biologie de  
l'Insecte (IRBI)

Cette lecture publique est organisée dans  
le cadre de la conférence :

**Insects, pathogens, and  
plant reprogramming:  
from effector molecules to  
ecology**

### INFORMATIONS

lecture@lestudium-ias.fr  
www.lestudium-ias.fr



**20H00** Dinner

## 6 OCTOBER 2015

### PLANT RESPONSES: PHYTOHORMONE SIGNALLING, NUTRIENT MOBILIZATION, CELLULAR REORGANIZATION, AND DEFENCE

**08H30** Opening

**08H45** Pr Moshe Inbar

Host plant manipulation by gall-forming aphids: from functional ecology to mechanisms

**09H15** Dr David Giron

Converging strategies in plant-manipulating insects: insect-induced effects on plants and possible mechanisms used by leaf-miners to manipulate their host-plant.

**09H45** Coffee break

**10H30** Dr Geraldo Wilson Fernandes

Biochemical and physiological mechanisms underlying plant responses to gall induction

**11H00** Pr Marion Harris

Gall Midges and Grasses: What We Hope to Know Someday

**11H30** Pr Graham Stone

Dissecting an extended phenotype: candidate genes for gall induction and formation by an oak cynipid gallwasp and its host

**12H00** Poster / Lunch

**14H00** Pr Jack Schultz

Darwin's Peach: A molecular basis of insect gall development

**14H30** Dr Paul Nabby

Genomic basis of insect-induced phenotypes within the Phylloxeridae

**15H00** Coffee break

**15H30** Pr Heidi Appel

Early plant responses to insect herbivores

**16H00** Dr Noah Whiteman

Genomics studies reveal that plants use metabolic, apparency and defense traits as strategies to mitigate herbivores

**16H30** Panel discussion: fundings, next meeting, ...

**18H00** End of day 2

**19H00** Departure for gala dinner

**19H30** Gala dinner

## 7 OCTOBER 2015

### ECOLOGICAL CONSEQUENCES OF REPROGRAMMING PLANTS AND CASCADING EFFECTS IN THE ECOSYSTEM

**08H30** Opening

**08H45** Dr Sylvain Pincebourde

Physical and physiological reprogramming of plants by insects: consequences in a changing climate

**09H15** Dr Issey Ohshima

From Juglandaceae to Ericaceae: the genetic background of host shifting between distantly related host plants in a leaf mining moth *Acrocercops transecta* (Lepidoptera: Gracillariidae)

**09H45** Coffee break

**10H30** Dr Carlos Lopez-Vaamonde

Evolution of the tripartite association between leaf-mining moths, *Wolbachia*, and their host plants.

**11H00** Dr Mauricio Quesada

Beetles as physical and biochemical ecosystem engineers: ecological and molecular evidence of trophic upgrading and consequences of branch removal to hosts

**11H30** Jérôme Casas & Jean-Christophe Simon

Summing up - General discussion

**12H30** Take away lunch

**14H00** End of conference

## SPEAKERS

### Pr Marion Olney Harris

North Dakota State University, Fargo ND - US

### Dr David Giron

IIRBI, UMR CNRS 7261, Université François-Rabelais Tours - FR

### Dr Pierre ABAD

Université de Nice Sophia-Antipolis - FR

### Pr Heidi Appel

University of Missouri - US

### Pr Jérôme Casas

IIRBI, UMR CNRS 7261, Université François-Rabelais Tours - FR

### Dr Geraldo Wilson Fernandes

Universidade Federal de Minas Gerais - BR

### Pr Saskia Hogenhout

Department of Cell and Developmental Biology, John Innes Centre - UK

### Pr Elisabeth Huguet

IIRBI, UMR CNRS 7261, Université François-Rabelais Tours - FR

### Pr Moshe Inbar

University of Haifa - IL

### Pr Sophien Kamoun

The Sainsbury Laboratory - UK

### Dr Carlos Lopez-Vaamonde

INRA Orléans - Unité de Recherche en Zoologie Forestière - FR

### Dr Paul Nabity

Washington State University - US

### Dr Issey Ohshima

Kyoto Prefectural University - JP

### Dr Sylvain Pincebourde

IIRBI, UMR CNRS 7261, Université François-Rabelais Tours - FR

### Dr Mauricio Quesada

Universidad Nacional Autónoma de México - MX

### Pr Jack Schultz

University of Missouri - US

### Dr Jean-Christophe Simon

Université Rennes - FR

### Pr Jeffrey J Stuart

Purdue University - US

### Pr Graham Stone

University of Edinburgh - UK

### Dr Akiko Sugio

INRA, UMR Institut de Génétique, Environnement et Protection des Plantes (IGEPP) - FR

### Dr Noah Whiteman

Department of Ecology and Evolutionary Biology, University of Arizona - US

## LE STUDIUM

Loire Valley  
Institute for Advanced Studies

[www.lestudium-ias.fr](http://www.lestudium-ias.fr)

1, rue Dupanloup • 45000 Orléans • France



LE STUDIUM

## CONFERENCES

TOURS | 2015

PROGRAMME

# 5-7 OCTOBER 2015

# Insects, pathogens, and plant reprogramming: from effector molecules to ecology



## LOCATION

Hôtel de Ville  
Place Jean Jaurès  
37000 TOURS

## CONVENORS

### Pr Marion Harris

LE STUDIUM RESEARCH FELLOW  
FROM  
North Dakota State University, Fargo,  
ND - USA  
IN RESIDENCE AT  
IRBI (Institut de Recherche sur la  
Biologie de l'Insecte - UMR 7261 -  
CNRS/University François Rabelais of  
Tours) - Tours, France.

### Dr David Giron

IRBI (Institut de Recherche sur la  
Biologie de l'Insecte - UMR 7261 -  
CNRS/University François Rabelais of  
Tours) - Tours, France.

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