

Advances in Hemipteran Research 2026

Thursday 29 October – Friday 30 October 2026
UCLouvain, Brussels Woluwe Campus, Belgium

Programme

Thursday

Session 1: Ecology & Insecticide Resistance

- 09:30 Registration and refreshments
- 10:00 **Welcome and Introduction by the *Conference Convenors***
- 10:15 **KEYNOTE: Demographics, sociality, behaviour and interactions: some evolutionary advantages of aphid populations**
Prof. Thierry Hance, Université de Louvain-la-Neuve
- 10:55 **Geographic patterns in genetic diversity of the meadow spittlebug *Philaenus spumarius*, a hemipteran vector of *Xylella fastidiosa***
Sam Mugford, John Innes Centre
- 11:10 **Nighttime warming and artificial light at night affect aphids and their parasitoids**
Kévin Tougeron, Université de Mons
- 11:25 Refreshments and posters
- 11:45 **Tracking fine morphological changes across the developmental stages of the pea aphid *Acyrtosiphon pisum* using (Harris) (Hemiptera: Aphididae)** 
Mariusz Kanturski, University of Silesia in Katowice
- 11:50 **Effects of Target and Background Colours on Aphid Landing Behaviour** 
John Owen, Harper Adams University
- 11:55 **Tracing the geographic origins of migratory aphids landing in the UK** 
Jen Thomas, Rothamsted Research & University of Exeter
- 12:00 **Aphid-virus interactions shaping sugar beet yellowing epidemiology**
Véronique Brault, INRAE
- 12:15 **The effect of *Myzus persicae* resistance to insecticides on the transmission of a non-circulative virus**
Christophe Plantamp, Anses Université de Lyon, INRAE, USC CASPER
- 12:30 **Assessing Insect Biodiversity in Organic Orchards with Morphology, DNA Barcoding, and DNA Metabarcoding**
Andrea Joyce, University of California Merced

12:45 Lunch

Session 2: Functional Biology

- 13:45 KEYNOTE: Building resilience to insect-vectored plant pathogens**
Prof. Saskia Hogenhout, John Innes Center
- 14:25 Identification of gene regulatory networks driving wing polyphenism in the pea aphid (*Acyrtosiphon pisum*)**
Scott Yim, University of Oxford
- 14:40 Gene regulatory network inference in the pea aphid reveals tissue-specific communities and highlights key hubs for organ physiological regulation**
Erwan Cruché, BF2I, UMR0203, F-69621, INRAE, INSA Lyon
- 14:55 Phylogenomics of Higher-Level Relationships within Aphidoidea (Insecta: Hemiptera)**
Xiaolu Zhang, Institute of Zoology, Chinese Academy of Sciences, Beijing
- 15:10 High resolution evolutionary genomics of the green peach aphid informed by a new telomere-to-telomere genome assembly**
Thomas Mathers, Wellcome Sanger Institute 
- 15:15 New lessons from CRISPR-Cas9 protocol in the pea aphid: diapause duration and germline mosaicism as key factors to improve mutation rates**
Sylvie Hudaverdian, INRAE
- 15:30 Molecular mechanisms involved in the control of reproductive polyphenism in the pea aphid**
Gaël Le Trionnaire, INRAE 
- 15:35 Lineage-Specific Expansion and Diversification of Cathepsin B Effectors in Aphids**
Mar Marzo, John Innes Centre
- 15:50 Refreshments and posters

Session 3: Virology

- 16:10 Physiological drivers of effective virus transmission**
Daniel Leybourne, The Agri-Food and Bioscience Institute, The University of Liverpool
- 16:25 Effects of Beet Mosaic Virus Co-infection on the Vector Transmission Efficiency of Beet Yellow Virus by Aphids**
Souheyla Khechmar, INRAE Colmar
- 16:40 Unravelling the plant genetic basis of virus-induced host manipulation**
Paul Munsch-Masset, INRAE 

- 16:45** **Virome of pea and the pea aphid: Identification of RNA viruses associated with them**
Akiko Sugio, INRAE
- 17:00** **Investigating the Molecular Mechanisms of Viral Co-Infection and Its Impact on Aphid-Mediated Virus Transmission**
Qiuyu Xu, INRAE Colmar
- 17:15 Closing comments
- 19:00 Dinner at Le Roy d’Espagne, *Grand Place 1, 1000 Bruxelles*

Friday

Session 4: Aphid Plant Microbe Interactions

- 09:00 Refreshments
- 09:20** **Welcome to day 2**
- 09:30** **KEYNOTE: Beyond Buchnera: the evolutionary consequences of symbiont turnover in Aphids**
Dr. Emmanuelle Jouselin, INRAE CBGP Montpellier
- 10:10** **Molecular mechanisms underlying nutritional acclimation during host alternation in Rhopalosiphum padi**
Aurélie Etier, INRAE - IGEPP
- 10:25** **Rhizosphere microbiome assembly during aphid herbivory and its consequences for aphid-plant interactions**
Karen Kloth, Wageningen University & Research
- 10:40** **Harnessing beneficial rhizobacteria to protect plants from aphid-vectored viruses**
Megan Parker, University of Chester
- 10:55** **In-depth analysis of the banana aphid (Pentalonia nigronervosa) microbiota suggests high levels of microbial exchange with the host plant**
Christopher A. Sambolín-Pérez, Institute of Sustainable Biotechnology,
Inter American University of Puerto Rico 
- 11:00** **Genetic diversity and host-associated structure of the black bean aphid, a vector of beet yellows, in northern France**
Yannis Nio, INRAE, UMR 1349 IGEPP 
- 11:05** **Chitinase-like proteins are aphid-specific salivary effector candidates**
Colin Turnbull, Imperial College London 
- 11:10** **Identifying the plant chemical cues triggering host alternation in Rhopalosiphum padi**
Gauri Binayak, INRAE, UMR IGEPP

11:25 Cultivar-dependent plant-insect interactions rather than pathogen susceptibility may explain differential grapevine Flavescence dorée incidence in Swiss vineyards
Jasmine Cadena i Canals, Agroscope - Virology, Bacteriology and Phytoplasmaology

11:40 Refreshments and posters

Session 5: IPM

12:00 Is there a link between protective endosymbionts, genotypes and parasitoids of the potato aphid (*Macrosiphum euphorbiae*) on strawberry crops?

Laura Marcela Martinez Chavez, Harper Adams University

12:15 Enhancing biological pest control: olfactory conditioning of parasitoid wasps

Nikoletta Foskolou, Harper Adams University



12:20 Persistence of mineral and garlic essential oil efficacy under heat stress: host plant and aphid pest responses

Adeline Rohart, University of Picardie Jules Verne



12:25 Solid vermicompost and its liquid derivative exhibit strong biocontrol properties against *Myzus persicae* aphids on sweet pepper

François Ronoz, UCLouvain



12:30 Faba bean strips between apple trees: an attempt at severing mutualist interactions between ants and the rosy apple aphid to increase control by its natural enemies

Mael Le Plage, INRAE, IGEPP

12:45 Looking Back to Look Forward: The Unsung Legacy of Louise Russell

Armando Rosario Lebron, Swansea University/Smithsonian



12:50 Flax-derived flavones disrupt feeding behavior in *Myzus persicae*, the main vector of beet yellows viruses in sugar beet

Katell Dassé, University of Picardie Jules Verne



12:55 Characterizing the microbiota of mass-reared parasitoids to improve biological control efficiency

Wendy Destierdt, UCLouvain



13:00 Lunch and posters

Session 6: Symbionts/Endosymbionts

14:00 From individuals to communities: rhizobacteria-mediated suppression of cereal aphids

Sharon Zytynska, The University of Manchester

14:15 Host plant-dependent modulation of plant responses by aphids with *Regiella insecticola* and evidence for symbiont transfer to plants

Surhud Sant, Max Planck Institute for Chemical Ecology

14:30 The hidden role of aphid facultative symbionts in a plant-virus and vector interaction

Andrea Ceribelli, University of Liverpool



14:35 Sharing nutrients in the bacteriocyte: Novel amino acid transporters in Acyrthosiphon pisum

Catriona Anderson, Newcastle University

14:50 Does help make lazy? Relaxed selection of aphid immunity in the presence of defensive symbionts

Dominic Stalder, Swiss Federal Institute of Aquatic Science and Technology



14:55 Modelling the pea aphid symbiotic metabolism integrating life stage- and tissue-specific dynamics of amino acids

Yohann Quivet, BF2i

15:10 Refreshments and posters

15:30 Unravelling metabolic vulnerabilities in the pea aphid–Buchnera symbiosis through quantitative modelling

Léo Gerlin, INRAE, INSA Lyon, BF2I, UMR0203, Villeurbanne



15:35 Patterns of symbiont-mediated resistance in aphids reflect natural enemy risk

Ailsa Mclean, University of Oxford

15:50 Dissecting Aphid–Buchnera Symbiosis through CRISPR/Cas9 Genome Editing in the Host and PNA-Mediated Gene Knockdown in the Symbiont

Shuji Shigenobu, National Institute for Basic Biology

16:05 Identification and Characterization of Membrane Transport Proteins in Buchnera aphidicola: Insights into Nutrient Exchange in Aphid Symbiosis

Veronika Pavlasova, Newcastle University



16:10 Predictions of the host-endosymbionts metabolic networks in the bedbug, Cimex lectularius: optimisation of symbiotic interactions for the utilisation of blood resources

Hubert Charles, INSA-Lyon

16:25 Closing remarks

16:30 Close

Posters

- 1. A global assessment of the viruses transmitted by the peach-potato aphid (*Myzus persicae*).**
James R. Bell, Keele University
- 2. Impacts of a silicon fertiliser on cereal aphid biology**
Miranda Bracy, Harper Adams University
- 3. Aphid obligate endosymbionts: Resilience and plasticity under heatwave conditions**
Wendy Destierdt, UCLouvain
- 4. What is the best method to infest plants with aphids?**
Martin Drucker, INRAE Colmar
- 5. Functional innovation in aphid IAPs through expansion, diversification, and morph-specific expression**
Karen Gaget, INRAE
- 6. Between two lifestyles: understanding the transition to intracellular mutualism through an aphid symbiosis**
François Gilbert, UCLouvain
- 7. Does host plant adaptation shape aphid micromorphology and sensory organs? SEM analysis of pea aphid *Acyrtosiphon pisum* (Harris) (Hemiptera: Aphididae) biotypes specialized on different legume hosts**
Mariusz Kanturski, University of Silesia in Katowice
- 8. Report of *Myzus persicae* resistance to flonicamid in France**
Claire Mottet, Université de Lyon, Anses, INRAE, USC CASPER
- 9. Alien plants as potential reservoirs of aphid-transmitted viruses**
Emma Pluchard, EDYSAN (Écologie et Dynamique des Systèmes Anthropisés), Université de Picardie Jules Verne
- 10. Exploiting a pangenome graph of the pea aphid to characterize polymorphisms associated with reproductive mode variation**
Stéphanie Robin, IGEPP, INRAE
- 11. Innovating Bedbug Control: Symbiotic Control within a One Health Framework**
Charlotte Tanneau, LBBE - Laboratoire de biométrie et de biologie évolutive
- 12. Flonicamid susceptibility dynamics: A sustainable path forward**
Liesbet Wilberts, Certis Belchim R&D