Advances in Hemipteran Research 2026

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

Programme

Thursday

09:30 Registration and refreshments

10:00 Welcome and introduction by the *conference convenors*

Session 1: Ecology and Insecticide Resistance

Chair: James Bell, RES & Keele University & François Renoz, UCLouvain

10:15 KEYNOTE: Fast, clonal and never alone: how aphids escape the cost of clonality
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

11:55 Tracking fine morphological changes across the developmental stages of the Pea Aphid (*Acyrthosiphon pisum* (Harris) (Hemiptera: Aphididae))
Mariusz Kanturski, University of Silesia in Katowice

12:00 Effects of target and background colours on aphid landing behaviour
John Owen, Harper Adams University

12:05 Tracing the geographic origins of migratory aphids landing in the UK
Jen Thomas, Rothamsted Research & University of Exeter

12:10 Aphid–virus interactions shaping sugar beet yellowing epidemiology
Véronique Brault, INRAE

12:25 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

12:40 Lunch

Session 2: Functional Biology

Chair: Jean-Christophe Simon, INRAE

13:45 **KEYNOTE: Building resilience to insect-vectored plant pathogens**
Prof. Saskia Hogenhout, John Innes Centre

14:25 **Identification of gene regulatory networks driving wing polyphenism in the Pea Aphid (*Acyrthosiphon 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

Chair: Trisna Tungadi, RES & Keele University

16:10 **Physiological drivers of effective virus transmission**
Daniel Leybourne, The Agri-Food and Bioscience Institute, University of Liverpool

16:25 **Effects of Beet Mosaic Virus co-infection on the vector transmission efficiency of Beet Yellows 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: Hemiptera–Plant–Microbe Interactions

Chair: Akiko Sugio, INRAE

09:00 Refreshments

09:20 **Welcome to day 2**
François Renoz, FNRS Research Associate/Professor, UCLouvain

09:30 **KEYNOTE: Beyond *Buchnera*: the evolutionary consequences of symbiont turnover in aphids**
Emmanuelle Jousselin, 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 Phytoplasmology

11:40 Refreshments and posters

Session 5: IPM

Chair: Tom Pope, RES & Harper Adams University

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* on sweet pepper**
François Ronoz, UCLouvian

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 behaviour in *Myzus persicae*, the main vector of beet yellows viruses in sugar beet**
Katell Dassé, University of Picardie Jules Verne

12:55 **Characterising the microbiota of mass-reared parasitoids to improve biological control efficiency**
Wendy Destierdt, UCLouvain

13:00 Lunch and posters

Session 6: Symbionts/Endosymbionts

Chairs: François Renoz, UCLouvain & Federica Calevro, INRAE

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 characterisation 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 (*Acyrthosiphon pisum* (Harris) (Hemiptera: Aphididae)) biotypes specialised 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 characterise 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