

## Monday 26 August

## Main Hall

8:15 - 9:15



## Plenary Lecture 1

8:15 **PL1** The Tangled Bank of Insect-Microbe Symbiosis  
Nancy A. Moran

Department of Integrative Biology, The University of Texas at Austin (United States of America)

**Introducer:** Takema Fukatsu (National Institute of Advanced Industrial Science and Technology)

## RoomA

## Symposium 14-1

9:45 - 11:45



## Potential application of Empirical Dynamic Modeling for insect population dynamics

**Chair:** Shigeki Kishi (National Agriculture and Food Research Organization), Noriyuki Suzuki (Kochi University)

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|-------|--|-------|--|
| 9:45  | <b>14-1-01</b> Introduction to EDM for entomologists<br>Shigeki Kishi  | 10:45 | <b>14-1-05</b> EDM analyses for long rice pest records in Japan<br>Takehiko Yamanaka   |
| 10:00 | <b>14-1-02</b> Application of Empirical Dynamic Modeling for investigating environmental effects on mosquito population dynamics<br>Chih-hao Hsieh   | 11:00 | <b>14-1-06</b> Iteratively forecasting the weekly Western Flower Thrips ( <i>Frankliniella occidentalis</i> ) population in a pepper greenhouse with a data-driven ensemble model<br>Kin Ho Chan         |
| 10:15 | <b>14-1-03</b> Multiple facets of the effects of interaction variability on population sensitivity to pesticide applications<br>Koya Hashimoto   | 11:15 | <b>14-1-07</b> Wave interference can disrupt tethered suppression gene drives in continuous space<br>Ruobing Feng  |
| 10:30 | <b>14-1-04</b> Nonlinear time series analysis on the interaction between the citrus whitefly and the whitefly-specialist ladybird as a test for top-down effect of biocontrol candidate<br>Noriyuki Suzuki | 11:30 | <b>14-1-08</b> Investigating the Termicidal effects of <i>Syzygium aromaticum</i> and <i>Allium sativum</i> Against the <i>Heterotermes indicola</i> (wasmann) (Isoptera: Rhinotermitidae)<br>Fazal Said |

## Symposium 14-2

13:30 - 18:15



## Genetic Population Engineering for Pest Management

**Chair:** Jackson Champer (Peking University), Xuechun Feng (Shenzhen Bay Laboratory), Nicky Faber (Wageningen University & Research)

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|-------|--|-------|---|
| 13:30 | <b>14-2-01</b> Failure mode analysis for a genetic biocontrol technology<br>Michael J Smanski  | 14:30 | <b>14-2-05</b> Genetic determinisms of <i>Wolbachia</i> -induced cytoplasmic incompatibility in the invasive pest, <i>Drosophila suzukii</i><br>Nicolas O. Rode |
| 13:45 | <b>14-2-02</b> The impact of genetic diversity on gene drive efficiency in <i>Drosophila melanogaster</i><br>Nicky Faber                   | 14:45 | <b>14-2-06</b> Modeling to support target product profiles for mosquito gene drives<br>John M. Marshall   |
| 14:00 | <b>14-2-03</b> Gene drive based population suppression targeting <i>dsx</i> in the malaria vector <i>Anopheles stephensi</i><br>Xuejiao Xu | 15:00 | <b>14-2-07</b> New germline Cas9 promoters show improved performance for homing gene drive<br>Jie Du  |
| 14:15 | <b>14-2-04</b> Male-only strains for genetic biocontrol of spotted wing <i>Drosophila</i> and the New World screwworm<br>Max Scott         | 15:15 | <b>14-2-08</b> Unravelling <i>Anopheles</i> mosquito embryogenesis and sex determination with long-read RNA sequencing.<br>Matteo Vitale                        |

## Daily schedules

Sunday 25 Aug

- |       |  |       |   |
|-------|--|-------|---|
| 15:30 | <b>Coffee Break</b>  | 17:00 | <b>14-2-12</b> The expression of RTAcS-Bddsx system under thermo-control for female repression in <i>Bactroera dorsalis</i><br><b>Cheng Chang</b>         |
| 16:15 | <b>14-2-09</b> Mosquito population modification and the malaria eradication agenda<br><b>Anthony A. James</b>  | 17:15 | <b>14-2-13</b> An integral gene drive for population modification of the malaria vector <i>Anopheles gambiae</i><br><b>Nikolai Windbichler</b>            |
| 16:30 | <b>14-2-10</b> Genome engineering and gene drive development in the disease vector <i>Culex quinquefasciatus</i><br><b>Xuechun Feng</b>                      | 17:30 | <b>14-2-14</b> Spreading insecticide sensitive allele <i>RyK<sup>M4758I</sup></i> with gene drive in <i>Drosophila melanogaster</i><br><b>Shimin Chen</b> |
| 16:45 | <b>14-2-11</b> Improved population suppression by gene drive targeting <i>doublesex</i> from dominant nonfunctional resistance alleles<br><b>Weizhe Chen</b> | 17:45 | <b>14-2-15</b> Allele Sails for Insect Population Modification<br><b>Maciej Maselko</b>   |

Monday 26 Aug

### Annex Hall1

#### Symposium 14-3

9:45 - 11:45

#### Sterile Insect Technique (SIT) Applications for Area-wide Integrated Pest Management (AW-IPM)



**Chair:** Lawrence Nkosikhona Malinga (South African Sugarcane Research Institute)

- |       |   |       |   |
|-------|---|-------|---|
| 9:45  | <b>14-3-01</b> Effect on sterility and flight ability of <i>Ceratitis capitata</i> irradiated with X-ray as an alternative to gamma irradiation for the sterile insect technique<br><b>Desmond Edward Conlong</b> | 10:45 | <b>14-3-05</b> A Study in Ebony: Functional genomics evidence linking the <i>ebony</i> gene to the black pupae phenotype in tephritid fruit flies<br><b>Daniel Fernando Paulo</b> |
| 10:00 | <b>14-3-02</b> Applicability of Rhodamine-B for Mark, Release, and Recapture of Gamma-Irradiated Males <i>Aedes aegypti</i> : Persistence, Dispersal, and Its Effect on Survival<br><b>Beni Ernawan</b>           | 11:00 | <b>14-3-06</b> Comparing gamma and X-ray irradiation for the sterilization of <i>Thaumatotibia leucotreta</i> in a commercial SIT programme<br><b>Megan Mulcahy</b>               |
| 10:15 | <b>14-3-03</b> Experience and Lessons Learnt on the Application of SIT against the Primary Vector <i>Anopheles arabiensis</i> in South Africa<br><b>Givemore Munhenga</b>   | 11:15 | <b>14-3-07</b> Population suppression with dominant female-lethal alleles is boosted by homing gene drive<br><b>Jinyu Zhu</b>   |
| 10:30 | <b>14-3-04</b> Simulating Millions of Mosquitos Using Cutting Edge Continuous-Space Modeling Techniques<br><b>Samuel Evans Champer</b>  | 11:30 | <b>14-3-08</b> Effect of X-ray irradiation on the sterility of Eldana saccharina for the sterile insect technique in sugarcane<br><b>Lawrence Nkosikhona Malinga</b>              |

Tuesday 27 Aug

Wednesday 28 Aug

#### Symposium 14-4

13:30 - 18:15

#### Bemisia tabaci: a pernicious pest and a super vector



**Chair:** Rajagopalbabu Srinivasan (University of Georgia), Alvin M Simmons (Agricultural Research Service)

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|-------|---|-------|--|
| 13:30 | <b>14-4-01</b> Recent phylogenomic advancements, and biogeographical and ecological nuances of the <i>Bemisia tabaci</i> cryptic species group<br><b>Judith K Brown</b> | 14:30 | <b>14-4-05</b> Horizontally obtained <i>Rickettsia</i> "symbiont" is not inherited by the parasitic wasp <i>Eretmocerus hayati</i><br><b>Yin-Quan Liu</b>                              |
| 13:45 | <b>14-4-02</b> Whiteflies in Changing Environments<br><b>Alvin M Simmons</b>  | 14:45 | <b>14-4-06</b> Four decades of <i>Bemisia tabaci</i> -transmitted viruses in Europa's orchard<br><b>Dirk Janssen</b>   |
| 14:00 | <b>14-4-03</b> Whitefly infestations may drop down under a future climate<br><b>Elisa Garzo</b>   | 15:00 | <b>14-4-07</b> Alterations in the expression profiles of secreted small RNAs by the whitefly <i>Bemisia tabaci</i> upon Tomato yellow leaf curl virus infection<br><b>Murad Ghanim</b> |
| 14:15 | <b>14-4-04</b> The costs and benefits of two secondary symbionts in a whitefly host shape their differential prevalence in the field<br><b>Shu-Sheng Liu</b>            | 15:15 | <b>14-4-08</b> Differential interactions of <i>Bemisia tabaci</i> cryptic species with old- and new-world begomoviruses<br><b>Rajagopalbabu Srinivasan</b>                             |

Thursday 29 Aug

Friday 30 Aug

15:30	<b>Coffee Break</b>	17:15	<b>14-4-13</b> Armet from whitefly saliva acts as an effector to suppress plant defences by targeting tobacco cystatin <b>Hui Du</b>
16:15	<b>14-4-09</b> Mixed infections of whitefly ( <i>Bemisia tabaci</i> )-transmitted viruses in the southwestern United States influence virus transmission and prevalence <b>William M Wintermantel</b>	17:30	<b>14-4-14</b> A Low-Cost Egg Staining Method for Improved Phenotyping of Whitefly Resistance in Crop Plants <b>Benjamin van Raalte</b>
16:30	<b>14-4-10</b> Making a mixed infection: effect of acquisition sequence on propagation of TYLCV and ToMoV by <i>Bemisia tabaci</i> <b>Alana Jacobson</b>	17:45	<b>14-4-15</b> Attraction of <i>Nicotiana benthamiana</i> to <i>Bemisia tabaci</i> is related to a chemical signal in plant volatile, undecane <b>Xinyue Zhang</b>
16:45	<b>14-4-11</b> Tracking <i>Bemisia tabaci</i> -transmitted sweet potato leaf curl virus through field production and vegetative propagation: Implications for breeding and production <b>Sharon A. Andreason</b>	18:00	<b>14-4-16</b> Insecticide susceptibility and biotype identification of <i>Bemisia tabaci</i> (Gennadius) in Taiwan <b>Ying-shiou Lin</b>
17:00	<b>14-4-12</b> CRISPR/Cas9, Cas12a Ribo Nucleoprotein Mediated Genome Editing: A New Avenue in Insect Pest Management <b>Asokan Ramasamy</b>		

## Annex Hall2

## Symposium 14-5

9:45 - 11:45



### Insect vectors of plant pathogens: the biology of epidemics and development of public policy

**Chair:** Andres Antolinez (Cornell University), Monique Rivera (Cornell University)

9:45	<b>14-5-01</b> Building an multidisciplinary approach to help decision makers solve vectored disease problems <b>Neil McRoberts</b>	11:00	<b>14-5-05</b> Field-inspired research on the biology and management of insect vector-borne disease <b>Michelle Lynn Heck</b>
10:15	<b>14-5-02</b> Understanding the impact of policy change and agronomic practice on carrot virus and vector management in the United Kingdom <b>Adrian Fox</b>	11:15	<b>14-5-06</b> Intruding into a conversation: harnessing vibrational communication for interfering with <i>Xylella fastidiosa</i> transmission <b>Daniele Cornara</b>
10:30	<b>14-5-03</b> Management and regulations for invasive vectors of plant diseases in New Zealand <b>Jessica Vereijssen</b>	11:30	<b>14-5-07</b> A secondary metabolite produced by an organelle-like bacterial mutualist may affect the microbiota of the Asian citrus psyllid <b>Atsushi Nakabachi</b>
10:45	<b>14-5-04</b> Vector behavior and epidemiology of vector-borne bacteria <b>Alberto Fereres</b>		

## Symposium 7-1

13:30 - 18:15



### Evolution of termites and cockroaches (Blattodea)

**Chair:** Thomas Bourguignon (Okinawa Institute of Science and Technology), Frederic Legendre (Museum national d'Histoire naturelle, Paris)

13:30	<b>7-1-01</b> The molecular signatures of healthy ageing in termites <b>Mark C Harrison</b>	14:00	<b>7-1-03</b> Blattodea diversification during the Angiosperm Revolution: insights from their rich fossil record <b>Corentin Jouault</b>
13:45	<b>7-1-02</b> Reproductive biology and embryonic development of <i>Anaplecta japonica</i> , 1977 (Blattodea, Anaplectidae) <b>Mari Fujita</b>	14:15	<b>7-1-04</b> Pervasive relaxed selection in termite genomes <b>Nathan Lo</b>

14:30 **7-1-05** Unveiling the Biology of Stylotermitidae: Gaining Insights through Nesting Chamber Reconstruction, Ontogenetic Development and Symbiotic Protist Diversity  
**Ren-han Liu**

14:45 **7-1-06** The divergence and disparity of late Mesozoic cockroaches as indicated by Myanmar amber  
**Xin-Ran Li**

15:00 **7-1-07** Evolution of termite tandem runs, with a few references to cockroach mating  
**Nobuaki Mizumoto**

15:15 **7-1-08** Transgenerational epigenetic effects on caste differentiation in termites  
**Kenji Matsuura**

15:30 **Coffee Break**

16:15 **7-1-09** Evolutionary genomics of termite sociality  
**Dino McMahon**

16:30 **7-1-10** Phylogeny and rapid karyotype evolution of African and Madagascar Oxyhaloinae cockroaches (Blaberoidea: Blaberidae).  
**Zuzana Kotyková Varadinová**

16:45 **7-1-11** Genome-scale phylogenies and their use in Blattodea  
**Simon Hellemans**

17:00 **7-1-12** Blattodea phylogenomics and wing evolution  
**Dominic A Evangelista**

17:15 **7-1-13** Identifying key genes in termite soldier differentiation through comparative analysis with *Cryptocercus* woodroaches  
**Yudai Masuoka**

17:30 **7-1-14** Behavioral ecology of the mating pair in subsocial wood-feeding cockroaches: the beginning of the sociality in their life history.  
**Haruka Osaki**

17:45 **7-1-15** The origin and trends of coevolution between Blattodea and their obligate endosymbiont, *Blattabacterium*  
**Yukihiro Kinjo**

18:00 **7-1-16** Genome-wide expression analysis of duplicated genes in termites  
**Kiyoto Maekawa**

Room C-1

Symposium 7-2

9:45 - 11:45



Evolution of life history trade-offs in insects

Chair: Abel Bernadou (University of Toulouse), Jürgen Heinze (University of Regensburg), Judith Korb (University of Freiburg)

9:45 **7-2-01** Stressful interactions: how does genetic variation shape plastic responses to combined thermal and nutritional stress?  
**Christen Kerry Mirth**

11:00 **7-2-05** The genetic underpinnings of the trade-off between resistance and life history traits in *Plodia interpunctella* and its granulosis virus  
**Signe White**

10:15 **7-2-02** Invasive mosquitoes are bigger in size and produce more fertile eggs  
**Ayda Khorramnejad**

11:15 **7-2-06** Summer diapause in aphid parasitoids: a space-for-time approach along longitudinal climatic gradient to better understand temperature effects  
**Lena Jago**

10:30 **7-2-03** Influences of artificial selection for locomotor activity on the life-history and reproductive traits in the red flour beetle  
**Kentarou Matsumura**

11:30 **7-2-07** The astonishing diving lice: introducing the truly marine insects  
**María Soledad Leonardi**

10:45 **7-2-04** Royal homeostasis in termites: the advanced maintenance systems exist in long-lived queens and kings  
**Eisuke Tasaki**

Symposium 7-3

13:30 - 18:15



Arthropod Ecology in the Anthropocene

Chair: Evan Economo (Okinawa Institute of Science and Technology Graduate University), Rosemary Gillespie (Professor & Schlinger Chair Director, Essig Museum of Entomology, University of California, Berkeley)

13:30 **7-3-01** Acceleration of biological responses in the Anthropocene  
**Yi-Wen Chen**

13:45 **7-3-02** Impact of elevated temperatures on bumblebee cognition  
**Maxence Gérard**

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|-------|---|-------|---|
| 14:00 | <b>7-3-03</b> Echoes of Silent Spring. Tracing the Historical and Contemporary Decline of Insects and Allies in Japan.<br><b>Makihiko Ikegami</b>                       | 16:30 | <b>7-3-10</b> Multiple drivers simultaneously impact dung beetle communities across a tropical land use gradient<br><b>Friederike Gebert</b>                        |
| 14:15 | <b>7-3-04</b> Current Status and Conservation matters of endemic weevils in the Ogasawara Islands, Japan: How to Confront the Green Anole Crisis.<br><b>Yoshie Kaga</b> | 16:45 | <b>7-3-11</b> What causes outbreaks of spruce budworm?<br><b>Deepa Pureswaran</b>   |
| 14:30 | <b>7-3-05</b> Butterfly diversity under climate change<br><b>Valentina Todisco</b>  | 17:00 | <b>7-3-12</b> Land-use change impacts on litter invertebrate community and functional traits in tropical agroecosystem<br><b>Mukhliah Jamal Musa Holle</b>          |
| 14:45 | <b>7-3-06</b> Insularization drives physiological condition of Amazonian dung beetles<br><b>Renato Portela Salomão</b>  | 17:15 | <b>7-3-13</b> Arthropods in the Anthropocene: Two Approaches to Measuring Change<br><b>Evan P. Economo</b>  |
| 15:00 | <b>7-3-07</b> Uncovering the hidden lives of insect pests<br><b>Jocelyn Holt</b>  | 17:30 | <b>7-3-14</b> The functional traits of moths reach a mid-elevation peak in the French Pyrenees.<br><b>Louise Ashton</b>   |
| 15:15 | <b>7-3-08</b> Temperature tolerance of parasitoids<br><b>Katherine Malinski</b>   | 17:45 | <b>7-3-15</b> Plant phenology affects apparent competition between exotic and native plants via herbivorous insect<br><b>Yuzu Sakata</b>                            |
| 15:30 | <b>Coffee Break</b>   | 18:00 | <b>7-3-16</b> Expanding range a sign of things to come? The unique case of spotted lanternfly, <i>Lycorma delicatula</i> in Japan<br><b>Matthew Tatsuo Kamiyama</b> |
| 16:15 | <b>7-3-09</b> How wild bees (Apiformes) take up anthropogenic particles: A look into flowers and guts<br><b>Kenneth Kuba</b>  |       |   |

## Room C-2

## Symposium 7-4

9:45 - 11:45



## Stick insect biology and evolution: an emerging model system

**Chair:** Thies Henning Büscher (Kiel University), Sven Bradler (Georg-August-Universität Göttingen), Thomas Buckley (Manaaki Whenua Landcare Research)

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| 9:45  | <b>7-4-01</b> Expanding the phasmatodean tree of life: new insights from targeted enrichment in stick and leaf insects<br><b>Sarah Bank</b> | 10:45 | <b>7-4-05</b> Effects of environmental factors and ageing of maternal insects on early embryonic diapause in the stick insect, <i>Phraortes elongatus</i> (Phasmatodea: Phasmatidae)<br><b>Haruyuki Nakano</b> |
| 10:00 | <b>7-4-02</b> Early Evolution of Mesozoic Phasmatodea<br><b>Hongru Yang</b>   | 11:00 | <b>7-4-06</b> Scaling of stick insect adhesion<br><b>Guillermo J Amador</b>  |
| 10:15 | <b>7-4-03</b> Dispersal and speciation of Australian Phasmatodea<br><b>Braxton R Jones</b>  | 11:15 | <b>7-4-07</b> The phasmid egg shell: microstructure and mechanical properties of a versatile protective layer<br><b>Thies Henning Büscher</b>  |
| 10:30 | <b>7-4-04</b> The irreversible parthenogenesis in the Japanese common stick insect, <i>Ramulus mikado</i><br><b>Tomonari Nozaki</b>         | 11:30 | <b>7-4-08</b> From Camouflage to Thermoregulation: Multiple selection pressures shape the reflectance of Stick and Leaf insect eggs.<br><b>Gerben Debruyn</b>  |

## Symposium 7-5

13:30 - 18:15



## 11th International Symposium on Chrysomelidae

**Chair:** Caroline Simmrita Chaboo (University of Nebraska - Lincoln), Yoko Matsumura (Hokkaido University), Michael Schmitt (Universität Greifswald)

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| 13:30 | <b>7-5-01</b> Site-based metagenomic analysis of global biodiversity patterns of leaf beetles<br><b>Rui-E Nie</b> |
|-------|---|

Sunday 25 Aug

Monday 26 Aug

Tuesday 27 Aug

Wednesday 28 Aug

Thursday 29 Aug

Friday 30 Aug

- 13:45 **7-5-02** Reevaluation of exclusion due to resource competition for food among herbivorous insects using leaf beetle species  
**Natsuki Nomura**
- 14:00 **7-5-03** Architecture, construction, retention, and repair of fecal shields in three tribes of tortoise beetles (Chrysomelidae: Cassidinae)  
**Caroline Simmrita Chaboo**
- 14:15 **7-5-04** Evolutionary scenarios for reduction of the hindwings of Galerucinae sensu stricto (Coleoptera: Chrysomelidae): cases of Taiwanese species  
**Chi-Feng Lee**

- 14:30 **7-5-05** Genomic basis of digestive synergy in a leaf beetle-bacterial symbiosis  
**Hassan Salem**
- 14:45 **7-5-06** Developmental process of elytral spines in leaf beetles  
**Tadashi Shinohara**
- 15:00 **7-5-07** How do female and male genitalia interact mechanically in *Cassida* beetles with an elongated intromittent structure?  
**Yoko Matsumura**

- 15:15 **7-5-08** Aedeagal sensilla of *Agelastica alni* (Coleoptera: Chrysomelidae: Galerucinae)  
**Michael Schmitt**

Room D

Symposium 16-1

9:45 - 11:45



Physiology of insects in a warming world: from cellular to ecological and evolutionary responses

Chair: Nicolas Pichaud (Université de Moncton), Jon F Harrison (Arizona State University), Daniel González-Tokman (Instituto de Ecología AC)

- 9:45 **16-1-01** The role of phenotypic plasticity in shaping evolutionary responses to climate change  
**Vanessa Kellermann**
- 10:00 **16-1-02** Insect Responses to Extreme High Temperatures under climate warming  
**Chun-Sen Ma**
- 10:15 **16-1-03** Testing the threshold trait model to predict plasticity of flight dimorphism in *Gryllus* field crickets  
**Lourenço Martins**

- 10:30 **16-1-04** Temperature effects on performance of Triatomine as Chagas disease vectors  
**Sabrina Clavijo-Baquet**

- 15:30 **Coffee Break**
- 16:15 **7-5-09** Exploring white mustard (*Sinapis alba*) diversity for novel resistance against the Cabbage Stem Flea Beetle (*Psylliodes chrysocephala*).  
**Susannah Gill**
- 16:30 **7-5-10** An outline of history and current status in studies of the Japanese fauna of the family Chrysomelidae (Coleoptera)  
**Kunio Suzuki**
- 16:45 **7-5-11** Moss and leaf-litter inhabiting leaf beetles of Japan (Coleoptera: Chrysomelidae: Galerucinae)  
**Haruki Suenaga**
- 17:00 **7-5-12** Introduction to taxonomic issues within the Japanese members of the genus *Chrysolina* (Coleoptera: Chrysomelidae: Chrysomelinae)  
**Takuya Takemoto**
- 17:15 **7-5-13** Taxonomic study on the *Basilepta hirticollis* species-group (Coleoptera, Chrysomelidae, Eumolpinae) from Japan  
**Hiroaki Shigetoh**
- 17:30 **7-5-14** Resurrection of *Donacocia*, and endophallite structure of Donaciinae.  
**Ingolf S Askevold**
- 17:45 **7-5-15** Rediscovery of a Second Reed Beetle in Israel  
**David Furth**
- 18:00 **7-5-16** Museum collections are the most important basis for studying Donaciinae  
**Elisabeth Geiser**

- 10:45 **16-1-05** Oxidative stress in insects in times of global change.  
**Daniel González-Tokman**
- 11:00 **16-1-06** Surviving the heat: An investigation of the Heat Shock Response in three *Polistes* species from different climates  
**Astrid Bay Amstrup**
- 11:15 **16-1-07** Honey bees in the desert summer: a comfortable dry heat or deadly oven?  
**Jon F Harrison**
- 11:30 **16-1-08** Solar radiation alters heat balance and thermoregulation in a flying desert bee  
**Meredith Grace Johnson**

## Symposium 16-2

13:30 - 18:15



## Low temperature biology: molecular mechanisms, physiological processes, and organismal consequences

Chair: Brent Sinclair (University of Western Ontario), Nick Teets (University of Kentucky)

13:30	<b>16-2-01</b> Mechanisms of freeze tolerance in <i>Gryllus veletis</i> <b>Brent Sinclair</b>	15:30	<b>Coffee Break</b>
13:45	<b>16-2-02</b> How do freeze-tolerant crickets protect their cytoskeleton? <b>Jantina Toxopeus</b>	16:15	<b>16-2-09</b> Comparisons of stress tolerance and transcriptomic response to sublethal freezing in the larvae of the Antarctic midge, <i>Belgica antarctica</i> , from three different populations <b>Yuta Kawarasaki</b>
14:00	<b>16-2-03</b> Mitochondrial protection and damage in frozen crickets <b>Stefane Saruhashi</b>	16:30	<b>16-2-10</b> Parental thermal environment affects caterpillar resilience to winter warm spells and late frosts <b>Mariana Abarca</b>
14:15	<b>16-2-04</b> Mitochondrial membranes as targets of cold and freezing injury in cold sensitive insects. <b>Vladimir Kostal</b>	16:45	<b>16-2-11</b> Presentation Withdrawn
14:30	<b>16-2-05</b> Sustained mitochondrial ATP-synthesis at low temperature is associated with organismal cold tolerance in <i>Drosophila</i> <b>Clara Garfiel Byrge</b>	17:00	<b>16-2-12</b> Extreme warming influences the overwintering success of a major forest insect pest <b>Eric Moise</b>
14:45	<b>16-2-06</b> Sub-lethal pesticide exposure increases tick cold tolerance and overwintering survival <b>Kennan J Oyen</b>	17:15	<b>16-2-13</b> Thermal reaction norms of survival and development as well as acclimation responses: contrasting laboratory <i>versus</i> natural responses in <i>Drosophila suzukii</i> <b>Bréa Raynaud-Berton</b>
15:00	<b>16-2-07</b> Exploring the mechanisms of cold-induced immune activation in insects <b>Mahmoud El-Saadi</b>	17:30	<b>16-2-14</b> The “Supercool” Freeze Tolerant Maggot, <i>Tetanops myopaeformis</i> <b>Madison A. Floden</b>
15:15	<b>16-2-08</b> The importance of cross-tolerance in a polyextremophile: the Antarctic midge, <i>Belgica antarctica</i> <b>Cleverson Lima</b>	17:45	<b>16-2-15</b> The cryopreservation of Anopheles mosquitos <b>Courtney Grula</b>
		18:00	<b>16-2-16</b> Multiple Stress For Bess Beetle Overwintering Success <b>Leigh Boardman</b>

## Room E

## Symposium 16-3

9:45 - 11:45



## Arthropod saliva: from basic science to practical applications

Chair: Eric Calvo (NIAID/NIH)

9:45	<b>16-3-01</b> Whitefly salivary miRNA effector suppress plant defense by cross-kingdom gene silencing <b>Xiao-Wei Wang</b>	10:45	<b>16-3-05</b> The gall of an aphid : Novel salivary secreted proteins hijack plant gene expression <b>Aishwarya Korgaonkar</b>
10:00	<b>16-3-02</b> Manipulation of pea by the pea aphid, <i>Acyrtosiphon pisum</i> <b>Akiko Sugio</b>	11:00	<b>16-3-06</b> Anopheline anti-platelet protein (AAPP) plays a vital role in mosquito blood feeding <b>Shigeto Yoshida</b>
10:15	<b>16-3-03</b> Giant leaps start with small steps: Saliva research for the tiny biting midge vector, <i>Culicoides sonorensis</i> <b>Barbara S Drolet</b>	11:15	<b>16-3-07</b> Unraveling the Role of Mosquito Salivary Glands proteins: CRISPR/Cas9-Mediated Disruption of Serpin 25 Reveals Implications for Female Mosquito Reproductive Biology <b>Bianca Burini</b>
10:30	<b>16-3-04</b> <i>Myzus persicae</i> polyphagy involves a combination of targeting conserved plant processes and a sophisticated regulation of effector gene expression <b>Saskia A Hogenhout</b>	11:30	<b>16-3-08</b> Characterization of pro-viral proteins in secreted saliva of <i>Varroa destructor</i> <b>Sanghyeon Kim</b>

## Symposium 16-4

13:30 - 15:30



## Neuroecology of mosquitoes beyond human-seeking

Chair: Olena Riabinina (Durham University), Thomas Schmitt (University of Wuerzburg)

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|-------|--|-------|--|
| 13:30 | <b>16-4-01</b> Sexual dimorphisms in auditory function and processing in mosquitoes<br><b>Azusa Kamikouchi</b>         | 14:30 | <b>16-4-05</b> Comparative study of cuticular hydrocarbon profiles of <i>Anopheles</i> mosquitoes and their potential ecological and evolutionary implications<br><b>Olena Riabinina</b> |
| 13:45 | <b>16-4-02</b> Landing mechanisms of houseflies and mosquitoes<br><b>Sanjay P Sane</b>                                 | 14:45 | <b>16-4-06</b> Investigating Sabethini Mosquitoes and the Loss of Blood-Feeding<br><b>Tiffany Pan</b>  |
| 14:00 | <b>16-4-03</b> Sugar feeding by invasive mosquito species on ornamental and wild plants<br><b>Chloe Aude lahondere</b> | 15:00 | <b>16-4-07</b> The neuromodulation of blood-feeding behaviour in <i>Anopheles stephensi</i><br><b>Prashali Bansal</b>  |
| 14:15 | <b>16-4-04</b> Sensory neurobiology of egg laying in <i>Aedes aegypti</i> mosquitoes<br><b>Ben Matthews</b>            | 15:15 | <b>16-4-08</b> Reciprocal functions for neuropeptide F and RYamide in regulating host seeking by the mosquito <i>Aedes aegypti</i><br><b>Xiaoyi Dou</b>                                  |

## Symposium 16-5

16:15 - 18:15



## PIWI proteins and PIWI-interacting (pi)RNAs in insects

Chair: Dulce Santos (KU Leuven), Luc Swevers (NCSR "Demokritos")

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|-------|---|-------|--|
| 16:15 | <b>16-5-01</b> Application of piRNA-Triggered Gene Silencing in the Phloem-Feeding Whitefly <i>Bemisia tabaci</i> B mitotype NAF-ME cryptic species<br><b>Alex Sutton Flynt</b> | 17:15 | <b>16-5-05</b> Roles of PIWI proteins and PIWI-interacting RNAs in non-gonadal somatic tissues of the silkworm, <i>Bombyx mori</i><br><b>Takashi Kiuchi</b>                            |
| 16:30 | <b>16-5-02</b> The piRNA pathway is required for BmNPV replication in silkworm<br><b>Min Feng</b>   | 17:30 | <b>16-5-06</b> Distribution of Nonretroviral Endogenous Viral Elements (nrEVs) in the genome of arboviral vectors and their possible impact on immunity<br><b>Mariangela Bonizzoni</b> |
| 16:45 | <b>16-5-03</b> Temporal Dynamics in Ovary Development: Unveiling Narrowly Expressed piRNAs in <i>Blattella germanica</i><br><b>Josep Bau</b>                                    | 17:45 | <b>16-5-07</b> Elucidation of the mechanism of piRNA cluster formation using silkworm cultured cells<br><b>Xiao Qi</b>   |
| 17:00 | <b>16-5-04</b> piRNA function on <i>Blattella germanica</i> oocyte maturation and embryogenesis<br><b>Núria Farrús</b>  | 18:00 | <b>16-5-08</b> Unveiling piRNA expression patterns in insects using the novel piRNA Annotation Tool (piRAT)<br><b>Guillem Ylla</b>   |

Room F

## Symposium 2-1

9:45 - 11:45



## Insect Bio Digital Transformation (Insect BioDX)

Chair: Hidemasa Bono (Hiroshima University), Keisuke Okuhara (Hiroshima University), Kakeru Yokoi (Institute of Agrobiological Sciences, National Agriculture and Food Research Organization)

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|-------|--|-------|---|
| 9:45  | <b>2-1-01</b> Opening remarks and General Introduction<br><b>Hidemasa Bono</b>   | 10:15 | <b>2-1-03</b> Gene function analysis using silkworm gene network model<br><b>Takahiro Kusakabe</b>    |
| 10:00 | <b>2-1-02</b> The superoxide dismutases of insects; their role and function in the pupal period.<br><b>Hiroko Tabunoki</b> | 10:30 | <b>2-1-04</b> Improvement of the genome editing technologies in the silkworm<br><b>Takuya Tsubota</b> |



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| 10:45 | <b>2-1-05</b> Aiming at building the better strains of the honey bee <i>Apis mellifera</i><br><b>Shotaro Mine</b>                                       | 11:15 | <b>2-1-07</b> New high-quality genome assembly and annotation for the imperiled Loammi skipper butterfly ( <i>Atrytonopsis loammi</i> )<br><b>Rachel L Walsh</b> |
| 11:00 | <b>2-1-06</b> Genome analysis of the pupal parasitoid of the stable fly, <i>Spalangia cameroni</i> (Hymenoptera: Spalangidae)<br><b>Hiromitsu Araki</b> | 11:30 | <b>2-1-08</b> Genome sequencing revealed the pseudogenization of visual genes in trechine beetles living in caves<br><b>Takuma Niida</b>                         |

## Symposium 15-1

13:30 - 18:15



## Transitioning Insecticide Science Technologies for the Development of Novel Chemistries

**Chair:** Daniel Swale (University of Florida), Troy D Anderson (University of Nebraska), Yoshihisa Ozoe (Shimane University)

- |       |   |       |   |
|-------|---|-------|---|
| 13:30 | <b>15-1-01</b> Interaction of recombinantly expressed fall armyworm ABCC2 variants with Bt Cry toxins unveils resistance mutations in extracellular loops impairing pore formation<br><b>Ralf Nauen</b> | 16:30 | <b>15-1-09</b> Functionality of mosquito ABC transporters and strategies to improve insecticide delivery<br><b>Troy D Anderson</b>                                      |
| 14:00 | <b>15-1-02</b> Estimation of the mode of action of a new insecticide candidate, NNI-2101, by using the genomic analysis of the mutant <i>Caenorhabditis elegans</i><br><b>Motofumi Nakano</b>           | 16:45 | <b>15-1-10</b> Development of novel mechanism aphicides to prevent horizontal transmission of non-persistent plant pathogens<br><b>Daniel Swale</b>                     |
| 14:15 | <b>15-1-03</b> Pyrethrins act as feeding deterrents by irritating the insect oral taste organs through the intrinsic neurotoxic actions<br><b>Takeshi Kojima</b>  | 17:00 | <b>15-1-11</b> Exploring cys-loop ligand-gated ion channels, superfamilies of pesticide targets<br><b>Andrew Jones</b>  |
| 14:30 | <b>15-1-04</b> Verification of the binding site of fluralaner in vivo using CRISPR/Cas9<br><b>Chunqing Zhao</b>   | 17:15 | <b>15-1-12</b> Molecular mechanisms of gene expression variation associated with resistance in a polyphagous pest<br><b>Thomas Van Leeuwen</b>                          |
| 14:45 | <b>15-1-05</b> Chordotonal organ modulators as insecticides and beyond<br><b>Jia Huang</b>  | 17:30 | <b>15-1-13</b> Identification and characterization of cytochrome p450s putatively associated with fluvalinate resistance in <i>Varroa</i> mites<br><b>Si Hyeock Lee</b> |
| 15:00 | <b>15-1-06</b> The Mode of Action of Insecticidal Alkylsulfones<br><b>Andrew James Crossthwaite</b>   | 17:45 | <b>15-1-14</b> The genomics of adaptation to natural and synthetic xenobiotics in the aphid <i>Myzus persicae</i><br><b>Chris Bass</b>                                  |
| 15:15 | <b>15-1-07</b> Molecular understanding of target site actions of neonicotinoid insecticides<br><b>Kazuhiko Matsuda</b>  | 18:00 | <b>15-1-15</b> Identifying determinants of the antagonism of $\gamma$ -aminobutyric acid-gated chloride channels by fluralaner<br><b>Yoshihisa Ozoe</b>                 |
| 15:30 | <b>Coffee Break</b>   |       |   |
| 16:15 | <b>15-1-08</b> Functional in vivo tools for the characterization of novel targets and the development of selective insecticides<br><b>Stefanos Mastis</b>   |       |   |

Room G

## Symposium 20-1

9:45 - 11:45



## ad hoc session

**Chair:** Aleksandra Janiszewska (University of Lodz), Vazrick Nazari (University of Padova)

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|------|--|-------|--|
| 9:45 | <b>20-1-01</b> Entomological knowledge in ancient Mesopotamia<br><b>Vazrick Nazari</b> | 10:00 | <b>20-1-02</b> Calorimetry-Assisted Degree Day Modeling<br><b>Lisa G Neven</b> |
|------|--|-------|--|

- |       |   |       |  |
|-------|---|-------|--|
| 10:15 | <b>20-1-03</b> Electromagnetic Wave Simulation in Insects: A Computed Tomography (CT) Data Approach<br><b>Felipe Oliveira Ribas</b> | 11:00 | <b>20-1-06</b> Adaptation of stonefly (Plecoptera) life cycle to water temperatures-egg stage-<br><b>Mayumi Yoshimura</b>  |
| 10:30 | <b>20-1-04</b> Australian Cercopoid Phenology in a Biosecurity Context<br><b>Cait Jade Selleck</b>                                  | 11:15 | <b>20-1-07</b> Factors determining the occurrence of polyxenec ectoparasite in birds inhabiting different ecological niches<br><b>Aleksandra Janiszewska</b>   |
| 10:45 | <b>20-1-05</b> Determining plant hosts of chilli thrips during summer in Florida woodlands<br><b>Chastity L Perry</b>               | 11:30 | <b>20-1-08</b> Vertical stratification in forest arthropod abundance and diversity: From local food preference in ants to global patterns across major arthropod taxa<br><b>Benjamin David Blanchard</b> |

### Symposium 15-2

13:30 - 18:15



### Bioinspired pest control

Chair: Martin G Edwards (Newcastle University), Joerg Romeis (Agroscope)

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|-------|--|-------|--|
| 13:30 | <b>15-2-01</b> Insect multitrophic interactions for bionspired plant protection<br><b>Francesco Pennacchio</b>   | 15:30 | <b>Coffee Break</b>  |
| 14:00 | <b>15-2-02</b> Present global status of Bt plants and future improvements<br><b>Sergey Ivashuta</b>  | 16:15 | <b>15-2-08</b> Assessing environmental risks of synthetic gene drives<br><b>Joerg Romeis</b>   |
| 14:15 | <b>15-2-03</b> Dimpropyridaz (Axalion®): a chordotonal organ modulator with a new mode of action<br><b>Barbara Wedel</b>   | 16:30 | <b>15-2-09</b> Species-selective agonists of juvenile hormone receptor - en route to environmentally friendly IGRs<br><b>David Sedlak</b>  |
| 14:30 | <b>15-2-04</b> Decreased electrophysiological responses to essential oils based on gustatory habituation in <i>Spodoptera litura</i><br><b>Hyo Eun Jeon</b>                                    | 16:45 | <b>15-2-10</b> Developing pest-resistant plants through genome editing<br><b>Angharad Margaret Roscoe Gatehouse</b>  |
| 14:45 | <b>15-2-05</b> Sublethal Effects of Philippine Actinomycete Strain, <i>Streptomyces angustmyceticus</i> CGS B11, against <i>Aedes aegypti</i> (Diptera: Culicidae)<br><b>Kathleen T. Dizon</b> | 17:00 | <b>15-2-11</b> RNAi-based biological control as a promising strategy for sucking pests management<br><b>Jinzhi Niu</b>   |
| 15:00 | <b>15-2-06</b> Nanocarrier mediated delivery of insecticides into tarsi enhances insect mortality<br><b>Juan Pablo Giraldo</b>   | 17:15 | <b>15-2-12</b> From Genes to Fields: A Role for RNAi in IPM and Sustainable Agriculture<br><b>Martin G Edwards</b>   |
| 15:15 | <b>15-2-07</b> <i>Wolbachia</i> wisdom: Unleashing CifAB cytoplasmic incompatibility for confined gene drives in mosquitoes<br><b>Carol Li</b>   | 17:30 | <b>15-2-13</b> Unique P450 genes are evolved for the drive of cross resistance in field generalist pests<br><b>Sichun Zheng</b>  |
|       |  | 17:45 | <b>15-2-14</b> MicroRNA-mediated insecticide resistance in <i>Spodoptera frugiperda</i> : Unraveling the role in chlorantraniliprole susceptibility<br><b>Rashmi Manohar Mahalle</b> |
|       |  | 18:00 | <b>15-2-15</b> RNAi-based biopesticides against the 28-spotted ladybeetle <i>Henosepilachna vigintioctopunctata</i><br><b>Huipeng Pan</b>  |

## Room H

## Symposium 11-1

9:45 - 11:45



## The role of pollen lipids in bee nutrition: from larvae to landscapes.

**Chair:** Philip Stevenson (Royal Botanic Gardens, Kew), Sharoni Shafir (The Hebrew University of Jerusalem), Geraldine Wright (University of Oxford)

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|--|---|
| <p>9:45 <b>11-1-01</b> Lipid landscapes for bees: pollen sterols and fatty acids vary dramatically across plant taxa and characterise the lipidome of wild bees.<br/><b>Philip Stevenson</b></p> <p>10:00 <b>11-1-02</b> Do pollen sterols constrain the diet of wild bees in urban areas?<br/><b>Yan Yang</b></p> <p>10:15 <b>11-1-03</b> Exploring the ecological role of sterols in bee-plant interactions<br/><b>Maryse Vanderplanck</b></p> <p>10:30 <b>11-1-04</b> Cascading effects of nutritional imbalance in a honey bee colony.<br/><b>Sharoni Shafir</b></p> | <p>10:45 <b>11-1-05</b> Honeybee colonies provided with essential dietary sterols from engineered yeasts do not collapse<br/><b>Geraldine Wright</b></p> <p>11:00 <b>11-1-06</b> Don't overeat: food lipid content shapes protein-lipid regulation in nurse honey bees<br/><b>Spencer T Behmer</b></p> <p>11:15 <b>11-1-07</b> Does fat identity matter? The effect of different fatty acids on bumble bee consumption and fitness<br/><b>Fabian A. Ruedenauer</b></p> <p>11:30 <b>11-1-08</b> Variation in the pollen diet of European managed bee species in agro-ecosystems<br/><b>Clément Tourbez</b></p> |
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## Symposium 11-2

13:30 - 18:00



## Pollination consilience: key roles of forests for pollinator conservation in anthropogenic landscapes

**Chair:** Michael Ulyshen (USDA Forest Service), Margaret Mayfield (The University of Melbourne)

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|--|---|
| <p>13:30 <b>11-2-01</b> Bringing forest ecology to bumble bee conservation<br/><b>John M Mola</b></p> <p>13:45 <b>11-2-02</b> Australian stingless and solitary bee foraging ecology in subtropical forests<br/><b>Rachele S Wilson</b></p> <p>14:00 <b>11-2-03</b> Temporal dynamics of plant-pollinator networks in tropical montane ecosystems in the Andes<br/><b>Jan Klecka</b></p> <p>14:15 <b>11-2-04</b> Exploring the Relationship Between Canopy, Ground Cover, and Avocado Pollinators in orchards in Western Australia<br/><b>Miyuki Taniguchi</b></p> <p>14:30 <b>11-2-05</b> Hiding inequalities behind richness: how urban landscapes shape wild bee communities.<br/><b>William Fiordaliso</b></p> <p>14:45 <b>11-2-06</b> Supporting fly pollinators in crop agroecosystems<br/><b>Abby E Davis</b></p> <p>15:00 <b>11-2-07</b> Pollinator distribution and community composition in response to anthropogenic land-use changes and the roles of forests in agricultural landscapes<br/><b>Gaku Hirayama</b></p> <p>15:15 <b>11-2-08</b> Land cover influences on the effects of a plant volatile on pollination<br/><b>Yahel Ben-Zvi</b></p> | <p>15:30 <b>Coffee Break</b></p> <p>16:15 <b>11-2-09</b> Conservation corridors protect butterfly diversity within timber plantation landscapes<br/><b>James Stephen Pryke</b></p> <p>16:30 <b>11-2-10</b> Bees Sampled Along a Vertical Gradient in Forests of Massachusetts, USA, Demonstrate Bee Community Variation by Forest Stand Composition and Ecoregion<br/><b>Joan Milam</b></p> <p>16:45 <b>11-2-11</b> Habitat fragmentation and agricultural context modify pollination dynamics in an annual wildflower community<br/><b>Manuel Sevenello</b></p> <p>17:00 <b>11-2-12</b> Neglected pollinators vs commercial management bees: handling time as a proxy to evaluate pollination success in apple orchards<br/><b>Rodrigo M. Barahona-Segovia</b></p> <p>17:15 <b>11-2-13</b> Newly Discovered Cold Tolerant Bee That Favours Life in the Subalpine Woodland of Australia's Highest Mountains<br/><b>Joshua Coates</b></p> <p>17:30 <b>11-2-14</b> Global Trends in Climate Suitability for Pollinating Insects: Ups and Downs in a Warming World<br/><b>Ehsan Rahimi</b></p> |
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Sunday 25 Aug

Monday 26 Aug

Tuesday 27 Aug

Wednesday 28 Aug

Thursday 29 Aug

Friday 30 Aug

17:45 **11-2-15** Landscape genomics of invasive bumblebees (*Bombus terrestris*) across the island of Tasmania, Australia.  
Rachael Y Dudaniec

Room B-1

Symposium 18-1

9:45 - 11:45



Quantitative morphological adaptive evolution of beetles and related groups

Chair: Ming Bai (Institute of Zoology, Chinese Academy of Sciences)

9:45 **18-1-01** The Evolution of Coxa-Trochanteral Joints in Beetles  
Jenny Hein

10:15 **18-1-02** Investigation on the two different morphological forms of *Ochlerotatus (Finlaya) koreicus* (Diptera: Culicidae), a potential vector of dengue fever  
Jungyoon Lee

10:30 **18-1-03** Morphological Adaptations Associated with Leaf Rolling Behavior in Attelabid Weevils  
Haruki Moriai

10:45 **18-1-04** Genomics clarify evolution and systematics of lepidopteran mimicry ring in eastern Africa: focus on day-flying *Aletis* moths (Geometridae: Sterrhinae)  
Pasi Sihvonen

11:00 **18-1-05** The diversity and evolution of flightless morphs in lepidopteran moths: an ontogenetic perspective  
Shuhei Niitsu

11:15 **18-1-06** Mandibular rods: the form and function of a novel synapomorphy for the hymenopteran infraorder Proctotrupomorpha.  
Robert Luke Kresslein

11:30 **18-1-07** Comparative morphology of leafhopper nymphs (Hemiptera, Cicadellidae)  
Dmitry A Dmitriev

Symposium 18-2

13:30 - 18:15



Building a better insect tree of life

Chair: Dominic A Evangelista (University of Illinois, Urbana-Champaign), Manpreet K Kohli (Baruch College, CUNY)

13:30 **18-2-01** Assessing phylogenomic support for a renewed fly tree of Life  
Brian Wiegmann

13:45 **18-2-02** Jaws Unearthed: A Hidden Secret Unveiled in the Tanypodinae's Subfamily Reunion  
Fabio Laurindo Da Silva

14:00 **18-2-03** Thoroughly sampled acalyptrate fly phylogenomics emphasising Ephydroidea and Sphaeroceroidea  
Keith M Bayless

14:15 **18-2-04** Integrating genomes and legacy marker data to estimate the Drosophilidae Tree of Life  
Anton Suvorov

14:30 **18-2-05** Comparative embryological study of stoneflies: embryological groundplan and phylogeny of Plecoptera (Insecta)  
Shodo Mtow

14:45 **18-2-06** The Systematics and Conservation of Plecoptera  
Anna Eichert

15:00 **18-2-07** Building large phylogenies within a Bayesian framework: applications for metabarcoding data and backbone trees.  
Nicolas Chazot

15:15 **18-2-08** Quantifying the Darwinian Shortfall  
Douglas Chesters

15:30 **Coffee Break**

16:15 **18-2-09** The phylogeny of insects: An update on the 1KITE project  
Paul B Frandsen

16:30 **18-2-10** Illuminating blind spots in cockroach phylogeny : new data on two enigmatic and undersampled families (Blattodea: Tryonicidae, Oulopterygidae)  
Julien Malem

16:45 **18-2-11** Phylogenomic reconstruction of the Aphididae phylogeny: ancient rapid radiations are still difficult to resolve in the phylogenomics era  
Christopher Owen

17:00 **18-2-12** Phylogenomics sheds light on the phylogeny, biogeography and host-plant associations of ceutorhynchine weevils (Coleoptera: Curculionidae)  
Harald Letsch

17:15 **18-2-13** Preliminary phylogeny of Coenagrionoidea: Exploring their biogeography within the South Pacific  
Laura Sutherland

17:30 **18-2-14** A Revised Phylogeny of the Super-family Petalurida (Odonata: Anisoptera)  
Ethan Richard Tolman

18:00 **18-2-16** Evolutionary history and divergence times of Odonata (dragonflies and damselflies)  
Manpreet K Kohli

17:45 **18-2-15** Gossamerwings Damselflies Take Flight: A Phylogenetic Journey of Euphaeidae (Odonata)  
Pungki Lupiyaningdyah

### Room B-2

#### Symposium 3-1

9:45 - 11:45



#### Adaptive strategies of natural enemies including viruses and parasitoids interacting with insects

**Chair:** Guo-Hua Huang (Hunan Agricultural University), Madoka Nakai (Tokyo University of Agriculture and Technology)

9:45 **3-1-01** Advances in ascoviruses: biological characteristics and potential to be biocontrol agents and expression vectors  
Guo-Hua Huang

10:45 **3-1-05** Tritrophic interactions between tomato plants, plant virus, aphids and their parasitoids: Viruses induced plant volatiles detected by aphid parasitoids  
Panagiotis Mylonas

10:00 **3-1-02** Can adaptive strategies of ascoviruses to insects be deciphered from the function of genes encoded in their genome?  
Madoka Nakai

11:00 **3-1-06** Establishment of an oral inoculation method to compare susceptibility of different local populations of the Coconut rhinoceros beetle to *Oryctes rhinoceros* nudivirus.  
Koichi Sugimoto

10:15 **3-1-03** Identification and Functional Characterization of *Toxoneuron nigriceps* Ovarian Proteins Involved in the Early Suppression of Host Immune Response  
Rosanna Salvia

11:15 **3-1-07** Fungus-virus interactions during the control of *Oryctes rhinoceros*  
Ok Shin Malagayo Jean

10:30 **3-1-04** The Relationship Between Endosymbiotic *Wolbachia* and Host Autophagy Mechanism in *Laodelphax striatellus* and *Ostrinia scapularis* through Autophagic Chemical Treatment  
Achmad Gazali

11:30 **3-1-08** Screening and characterization of the putative host factor for executing behavioral manipulation by baculovirus  
Ryuhei Kokusho

#### Symposium 3-2

13:30 - 18:15



#### Classical Biological Control of Arthropod Pests: Theoretical Premise and Practical Challenges

**Chair:** Jian J Duan (U.S. Department of Agriculture), Mark Hoddle (University of California Riverside), Nicole F Quinn (University of Florida / Institute of Food and Agricultural Research)

13:30 **3-2-01** Using invasion theory to guide natural enemy introductions  
Daniel S Gruner

14:30 **3-2-05** Effect of Simulated Heatwaves on *Tamarixia triozae*: Impacts on Development, Survival, and Biocontrol Efficacy Against Invasive Pest *Bactericera cockerelli*  
Nimali Inoka Suwandharathne

13:45 **3-2-02** Taxonomic preparedness in parasitoid Hymenoptera: an essential element in effective biological control  
Matthew L Buffington

14:45 **3-2-06** Functional response of *Diachasmimorpha longicaudata* (Hymenoptera: Braconidae) on *Bactrocera dorsalis*, *Ceratitis cosyra* and *Ceratitis capitata*  
Shepard Ndlela

14:00 **3-2-03** Semiochemicals and biological control, and their role in natural enemy introductions  
Donald C Weber

15:00 **3-2-07** Effects of genetic variation and directional selection on performance of mass-reared parasitoid  
Yannick Outreman

14:15 **3-2-04** Factors influencing the performance of *Ganaspis brasiliensis* G1 in Northern Italy as part of a biological control project against *Drosophila suzukii*  
Gianfranco Anfora

15:15 **3-2-08** Classical biological control in the aftermath of invasion: a case study with an invasive wood borer  
Jian J Duan

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| 15:30 | <b>Coffee Break</b>   | 17:15 | <b>3-2-13</b> Next steps for biological control of insects pests in Canadian Prairie field crops<br><b>Haley Catton</b>   |
| 16:15 | <b>3-2-09</b> Presentation Withdrawn  | 17:30 | <b>3-2-14</b> Prioritising Australian scale insects for prey-specificity testing of <i>Neoleucopis</i> spp, potential biological control agents of giant pine scale.<br><b>Umar Kombo Lubanga</b> |
| 16:30 | <b>3-2-10</b> Classical biological control of BMSB in apple orchard; a successful story?<br><b>Claudio Ioriatti</b>   | 17:45 | <b>3-2-15</b> Survey of native egg parasitoid and its variation to the invasive litchi stink bug, <i>Tessaratomya papillosa</i> , in the orchards of southern Taiwan.<br><b>Chun-Chun Chang</b>   |
| 16:45 | <b>3-2-11</b> Classical biological control of orange spiny whitefly <i>Aleurocanthus spiniferus</i> in Greece<br><b>Maria Vasiliki Giakoumaki</b>                 | 18:00 | <b>3-2-16</b> Shoot the Moon: current situation in biological control and new technologies for genetic improvement of biological control agents<br><b>Norihide Hinomoto</b>                       |
| 17:00 | <b>3-2-12</b> Classical biological control of <i>Toumeyella parvicornis</i> : challenges and perspectives for a potential candidate<br><b>Lucrezia Giovannini</b> |       |   |

Room I

Symposium 13-1

9:45 - 11:45



**Ecology of biting flies: development of new control strategies**

**Chair:** Gerard Duvallat (University Paul-Valery Montpellier3), Theeraphap Charoenwiriayapap (Kasetsart University)

- |       |   |       |  |
|-------|---|-------|--|
| 9:45  | <b>13-1-01</b> Relationship between flight activity of the stable fly, <i>Stomoxys calcitrans</i> (Diptera: Muscidae) and evasive behavior of cattle<br><b>Tatsuo Fujioka</b> | 10:45 | <b>13-1-05</b> Stable fly management: a new IPM approach tested at a Donkey Sanctuary in Spain<br><b>Gerard Duvallat</b>   |
| 10:00 | <b>13-1-02</b> Paint it black: The relative importance of reflective intensity, colour, and polarization for stable fly attraction<br><b>Emmanuel Hung</b>                    | 11:00 | <b>13-1-06</b> House fly behavioral resistance: current understanding, challenges, and future directions<br><b>Amy Murillo</b>   |
| 10:15 | <b>13-1-03</b> Spatio-temporal Distribution of <i>Stomoxys</i> species in Beef Farms, Bangkok, Thailand<br><b>Ratchadawan Ngoenklan</b>                                       | 11:15 | <b>13-1-07</b> Detection of <i>Leucocytozoon</i> in black fly, <i>Simulium chumpornense</i> and biting midges, <i>Culicoides peregrinus</i> from southern Thailand<br><b>Sorawat Thongsahuan</b> |
| 10:30 | <b>13-1-04</b> Lethal toxicity of native botanical insecticides for control of <i>Stomoxys</i> spp. (Diptera: Muscidae) in Thailand<br><b>Krajana Tainchum</b>                | 11:30 | <b>13-1-08</b> Short-range attraction, landing, and post-landing behaviour of host-seeking <i>Anopheles</i> mosquitoes: implications for malaria vector control tools<br><b>Manuela Carnaghi</b> |

Symposium 13-2

13:30 - 18:15



**The Global Bed Bug Resurgence, 20 Years On**

**Chair:** Stephen Lindsay Doggett (NSW Health Pathology), Dini Michele Miller (Virginia Tech University)

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|-------|--|-------|---|
| 13:30 | <b>13-2-01</b> 20 Years of Research in the Global Bed Bug Resurgence<br><b>Stephen Lindsay Doggett</b>                                     | 14:30 | <b>13-2-04</b> Bed bug ( <i>Cimex lectularius</i> L.) fecal spot production as a measure of environmental contamination and population size.<br><b>Dini Michele Miller</b>                        |
| 14:00 | <b>13-2-02</b> Evolution of Bed Bug Standard of Care Through a Litigation Review<br><b>Jeffrey M Lipman</b>                                | 14:45 | <b>13-2-05</b> Insights into the immune transcriptome of the common bed bug, <i>Cimex lectularius</i> : tissue-specific transcriptomic profiles and responses to pathogens<br><b>Sanam Meradj</b> |
| 14:15 | <b>13-2-03</b> Efficiency of MALDI-TOF MS at identifying <i>Cimex</i> bedbugs and discriminating immature stages<br><b>Philippe Parola</b> | 15:00 | <b>13-2-06</b> Symbiont-mediated insecticide tolerance in the tropical bed bug, <i>Cimex hemipterus</i><br><b>Veera Singham K Genasan</b>   |

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|-------|---|-------|---|
| 15:15 | <b>13-2-07</b> Bed bugs resistant to pyrethroids or organophosphates in Japan<br><b>Osamu Komagata</b>  | 17:15 | <b>13-2-12</b> Bed bug detection and control: Lab and field evaluation of a lateral flow strip for bed bug detection and a new insecticidal dust for pest management<br><b>Alexander Ko</b>                             |
| 15:30 | <b>Coffee Break</b>   | 17:30 | <b>13-2-13</b> Control Efficacy of Steam and Diatomaceous Earth Dust Against Tropical Bed Bug, <i>Cimex hemipterus</i> (F.)<br><b>Desen Wang</b>  |
| 16:15 | <b>13-2-08</b> Stability of <i>kdr</i> mutations of voltage-sensitive sodium channel gene in the common bed bug, <i>Cimex lectularius</i><br><b>Susie Cho</b> | 17:45 | <b>13-2-14</b> Evaluation of Vikane® Fumigation for Tape-and-Sealed and Tarped Structures to Determine the Cost of Bed Bug Elimination ( <i>Cimex lectularius</i> L.) in Single Family Homes<br><b>Morgan M. Wilson</b> |
| 16:30 | <b>13-2-09</b> 8 years in public housing, Oslo, Norway. What we learned about bed bugs<br><b>Espen Roligheten</b>   | 18:00 | <b>13-2-15</b> The impact of independent insecticide efficacy studies on defining best practice for pest managers undertaking bed bug elimination services<br><b>David Lilly</b>  |
| 16:45 | <b>13-2-10</b> Twenty years after bed bug resurgence in low-income housing: Effective management strategies and challenges in the U.S.<br><b>Changlu Wang</b> |       |   |
| 17:00 | <b>13-2-11</b> Research in Repellents against <i>Cimex lectularius</i><br><b>Aijun Zhang</b>  |       |   |

## Room J

## Symposium 5-1

9:45 - 11:45



## Long-term perspectives: Quaternary &amp; Archaeological Entomology

**Chair:** Michael A. Monzon (Rutgers, the State University of New Jersey), Lauren M Weidner (Arizona State University), Philip Iain Buckland (Umeå University)

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|-------|--|-------|--|
| 9:45  | <b>5-1-01</b> Archaeoentomology and the Columbian Exchange: the transformation of the North American Insect Fauna during the Colonial Period.<br><b>Allison Bain</b> | 11:00 | <b>5-1-05</b> AI as a Catalyst in Entomological Research by Simplifying Species Identification<br><b>Hossein Shirali</b>   |
| 10:15 | <b>5-1-02</b> History and Prospects of Quaternary Entomology in Japan<br><b>Shigehiko Shiyake</b>  | 11:15 | <b>5-1-06</b> Neotropical paleoclimate, Andean orogeny, and the Isthmus of Panama: UCEs illuminate the evolution of the "pyramid ants" (Formicidae: <i>Dorymyrmex</i> )<br><b>Jill T Oberski</b> |
| 10:30 | <b>5-1-03</b> Entomological Time Travel: application imaging methods in paleoentomology<br><b>Agnieszka Soszynska</b>  | 11:30 | <b>5-1-07</b> Big Data and Fossil Insects for studying climates, environments and human impact<br><b>Philip Iain Buckland</b>  |
| 10:45 | <b>5-1-04</b> Early Holocene environments in northern Sweden: landscape transformation on local and regional scales<br><b>Love Eriksson</b>                          |       |  |

## Symposium 5-2

13:30 - 15:30



## ad hoc session

**Chair:** Marija Ivković (University of Zagreb), Rasmus Erlandsson (Stockholm University)

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|-------|---|-------|--|
| 13:30 | <b>5-2-01</b> Climate-driven changes and lessons from long term research: Diptera species turnover and dominance shifts<br><b>Marija Ivković</b>            | 14:00 | <b>5-2-03</b> Detection of recent temporal change in genetic diversity and structure for a population of endangered butterfly, <i>Luehdorfia japonica</i><br><b>Shouhei Ueda</b> |
| 13:45 | <b>5-2-02</b> Coleoptera species diversity in two tropical deciduous forests in Mexico based on metagenetic data<br><b>Diana Patricia Zavala-De La Rosa</b> | 14:15 | <b>5-2-04</b> Preliminary comparative evaluation of eDNA as a tool for odonate diversity assessment in different biogeographic regions<br><b>Rhema Uche-Dike</b>                 |

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|-------|---|-------|--|
| 14:30 | <b>5-2-05</b> Influence of distance to water on insect community composition and species abundance along a climate gradient<br><b>Rasmus Erlandsson</b> | 15:00 | <b>5-2-07</b> Bugs and Bergmann's rule: a cross-taxon large-scale study reveals idiosyncratic altitudinal and latitudinal body size patterns for different insect taxa<br><b>Mark Jun M. Alcantara</b> |
| 14:45 | <b>5-2-06</b> Variation in insect taxonomic diversity across landscapes of southern Western Ghats<br><b>Manish Ravi</b>                                 | 15:15 | <b>5-2-08</b> Testing Sampling Efficiency of Citizen Science Biodiversity Approach and Exploring its Potential for Discovering Insect Diversity<br><b>Kaiyun Zheng</b>                                 |

**Symposium 5-3**

16:15 - 18:15



**Grassland insects in East Asia: life history, population, phylogeography, and conservation**

**Chair:** Atsushi Ohwaki (J.F. Oberlin University), Naoyuki Nakahama (University of Hyogo)

- |       |   |       |  |
|-------|---|-------|--|
| 16:15 | <b>5-3-01</b> Introduction of the symposium and grassland insects in Japan<br><b>Atsushi Ohwaki</b>   | 17:30 | <b>5-3-05</b> Mowing management enhances population growth rate and carrying capacity of the butterfly <i>Plebejus argyrognomon</i> : An experimental test.<br><b>Hidenori Deto</b>  |
| 16:45 | <b>5-3-02</b> Habitat changes of the endangered butterflies during the last three decades in Korea<br><b>Sei-Woong Choi</b>   | 17:45 | <b>5-3-06</b> The time machine: how natural history collections help us investigate insect declines.<br><b>Andres Arce</b>   |
| 17:00 | <b>5-3-03</b> Population genetic structure of an endangered butterfly, <i>Leptidea amurensis</i> (Lepidoptera: Pieridae) in Japan using microsatellite markers<br><b>Rinnosuke Fukuda</b> | 18:00 | <b>5-3-07</b> A historical change of Japanese semi-natural grasslands in the Anthropocene as a major factor causing reduction of endangered grassland insects<br><b>Takeshi Suka</b> |
| 17:15 | <b>5-3-04</b> Conservation genomics of two semi-natural grassland endangered insects in Japan<br><b>Naoyuki Nakahama</b>  |       |  |

**Room K**

**Symposium 8-1**

9:45 - 11:45



**Progress towards genome editing and gene drives in non-model organisms**

**Chair:** Monika Gulia-Nuss (University of Nevada, Reno), Michael Pham (University of Nevada, Reno)

- |       |   |       |  |
|-------|---|-------|--|
| 9:45  | <b>8-1-01</b> Current Progress in Genetic Tool and Protocol Development for the Lyme disease vector, <i>Ixodes scapularis</i><br><b>Michael Pham</b>        | 10:45 | <b>8-1-04</b> DIPA-CRISPR updated: an engineered Cas9 for increased gene knock-in efficiency<br><b>Yu Shirai</b>   |
| 10:15 | <b>8-1-02</b> Applying lessons learned from genetic manipulation in the flatworm <i>Macrostomum lignano</i> to <i>Ixodes</i> ticks<br><b>Jakub Wudarski</b> | 11:00 | <b>8-1-05</b> A formulation based approach for CRISPR-Cas9 gene editing in difficult to transform arthropods<br><b>Sander De Rouck</b>                           |
| 10:30 | <b>8-1-03</b> Using the CRISPR/Cas9 system to uncover conserved and novel roles of HOX-gene function in non-model nematodes<br><b>Philipp H Schiffer</b>    | 11:15 | <b>8-1-06</b> Presentation Withdrawn   |
|       |   | 11:30 | <b>8-1-07</b> CRISPR/Cas9-based split homing gene drive for genetic suppression of the global crop pest, <i>Drosophila suzukii</i><br><b>Amarish Kumar Yadav</b> |



## Symposium 20-2

13:30 - 15:30



## Biotremology I - Behavioural and Sensory Ecology

**Chair:** Johannes Strauss (Justus Liebig University, Giessen), Takuma Takanashi (Forestry and Forest Products Research Institute), Valerio Mazzoni (Fondazione Edmund Mach)

- |  |   |
|--|---|
| <p>13:30 <b>20-2-01</b> The sensory basis for vibrational behaviours: Functional morphology and diversity of vibration receptor organs in insect<br/><b>Johannes Strauss</b></p> <p>14:00 <b>20-2-02</b> The role of vibratory signals in the multimodal courtship displays of jewel bugs<br/><b>Hiromi Mukai</b></p> <p>14:15 <b>20-2-03</b> Influence of vibrational cues on G1 <i>Ganaspis</i> cf. <i>brasiliensis</i> host searching behaviour<br/><b>Lorenzo Fellin</b></p> | <p>14:30 <b>20-2-04</b> How and why bees use vibrations to harvest pollen?<br/><b>Mario Vallejo-Marin</b></p> <p>14:45 <b>20-2-05</b> Buzz-pollinating bees deliver amplified thoracic vibrations to flowers through periodic biting<br/><b>Charlie Woodrow</b></p> <p>15:00 <b>20-2-06</b> Unravelling female swarming behavior on the basis of male participation and mating status.<br/><b>Sofia Vielma</b></p> <p>15:15 <b>20-2-07</b> Recognizing and localizing vibrational signals in a complex environment<br/><b>Jernej Polajnar</b></p> |
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## Symposium 20-3

16:15 - 18:15



## Biotremology II - Applied Biotremology

**Chair:** Valerio Mazzoni (Fondazione Edmund Mach), Takuma Takanashi (Forestry and Forest Products Research Institute), Johannes Strauss (Justus Liebig University, Giessen)

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| <p>16:15 <b>20-3-01</b> A new Lexicon for Biotremology to bridge the gap with Chemical Ecology<br/><b>Valerio Mazzoni</b></p> <p>16:30 <b>20-3-02</b> Machine language tools to distinguish calls of male and female <i>Diaphorina citri</i> Kuwayama (Hemiptera: Liviidae) in citrus trees with multiple duetting pairs and foragers<br/><b>Richard Mankin</b></p> <p>16:45 <b>20-3-03</b> <i>Cacopsylla pyricola</i> uses substrate-borne vibrations to communicate with and attract mates (Hemiptera: Psyllidae)<br/><b>Dowen Jocson</b></p> <p>17:00 <b>20-3-04</b> Feasibility and future perspective of vibrational mating disruption<br/><b>Rachele Nieri</b></p> | <p>17:15 <b>20-3-05</b> Applications of vibrations for sustainable pest management of <i>Bemisia tabaci</i><br/><b>Ryuhei Yanagisawa</b></p> <p>17:30 <b>20-3-06</b> Control of the whitefly <i>Bemisia tabaci</i> by combining <i>Nesidiocoris tenuis</i> with a new insect pest control device using non-contact vibration generated by ultrasonic transducers<br/><b>Chihiro Urairi</b></p> <p>17:45 <b>20-3-07</b> 'Going big' on vibrational pest control by increasing exposure duration and plant size against aphid pests<br/><b>Jean-Philippe Parent</b></p> <p>18:00 <b>20-3-08</b> Behavioral responses of a shiitake mushroom pest to vibrations: towards more sustainable control approaches of fungus gnats<br/><b>Sabina Avosani</b></p> |
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Room 554

## Symposium 12-1

9:45 - 11:45



## Global macroecology of insect invasions

**Chair:** Andrew M Liebhold (USDA Forest Service Northern Research Station), Helen F. Nahrung (University of the Sunshine Coast)

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| <p>9:45 <b>12-1-01</b> Expats and aliens abroad: reciprocal insect invasions between the United States and Australia<br/><b>Helen F. Nahrung</b></p> <p>10:00 <b>12-1-02</b> Global composition and interceptions of (invasive) <i>Eucalyptus</i>-feeding insects<br/><b>Andy G Howe</b></p> | <p>10:15 <b>12-1-03</b> Plant invasions drive insect invasions<br/><b>Cleo Bertelsmeier</b></p> <p>10:30 <b>12-1-04</b> The impact of colonial history on ant invasions<br/><b>Aymeric Bonnamour</b></p> |
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|-------|--|-------|---|
| 10:45 | <b>12-1-05</b> Asymmetrical introductions between Europe and China of non-native insects associated with woody plants<br><b>Alain Roques</b> | 11:15 | <b>12-1-07</b> Evolution as the weakness of an empire: Isolation and new introductions as disruptors of the invasiveness of Argentine ants in Europe.<br><b>Iago Sanmartín-Villar</b> |
| 11:00 | <b>12-1-06</b> Why so many Hemiptera invasions?<br><b>Andrew M Liebhold</b>  | 11:30 | <b>12-1-08</b> Genomic insights from the recent American invasion of Lebeck Mealybug offers clues to its global success<br><b>Tracy Erin Liesenfelt</b>                               |

Symposium 12-2

13:30 - 15:30



**Alien Pest Invasions: Strategies for Managing New Pest Introductions Driven by Trade, Travel, and Climate Change**

**Chair:** Yu Takeuchi (North Carolina State University), Godshen Pallippambil Robert (North Carolina State University)

- |       |  |       |   |
|-------|--|-------|---|
| 13:30 | <b>12-2-01</b> Collaborating with industry to facilitate safe international trade<br><b>Lauren E Quevillon</b>   | 14:30 | <b>12-2-05</b> A quantitative pest risk assessment of the shoot and fruit borer, <i>Leucinodes orbonalis</i> Guenée (Lepidoptera: Crambidae), for the European Union<br><b>Ewelina Barbara Czwienczek</b> |
| 13:45 | <b>12-2-02</b> Are interception records in ports and airports potential predictors of establishment of exotic insect pests in France?<br><b>Philippe Reynaud</b> | 14:45 | <b>12-2-06</b> Combining climatic and host data to predict establishment risk of a frequent invader, the Japanese cedar longhorned beetle<br><b>Kristy M McAndrew</b>                                     |
| 14:00 | <b>12-2-03</b> Analysis of Quarantine Forest Pest Monitoring Techniques and Results in Croatia: A Five-Year Synopsis<br><b>Nikola Zorić</b>                      | 15:00 | <b>12-2-07</b> Predicting the distribution of twelve invasive termites under climate change and urbanization: a socioeconomic perspective<br><b>Edouard Duquesne</b>                                      |
| 14:15 | <b>12-2-04</b> Developing decision support systems and frameworks for tracking non-native pests<br><b>Godshen Pallippambil Robert</b>                            | 15:15 | <b>12-2-08</b> Investigating the impacts and adaptation strategies and current and emerging agricultural pests in the face of climate change<br><b>Yu Takeuchi</b>  |

Symposium 8-2

16:15 - 18:15



**Advancing vector borne diseases identification, incrimination and control in the genomics era.**

**Chair:** Emma Louise Collins (London School of Hygiene and Tropical Medicine), Matthew Higgins (London School of Hygiene and Tropical Medicine), Grayson Brown (Puerto Rico Science, Technology, and Research Trust)

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|-------|--|-------|--|
| 16:15 | <b>8-2-01</b> Using genomics to inform vector borne disease programmes<br><b>Susana Campino</b>  | 17:15 | <b>8-2-05</b> Population genetics of insecticide resistance in the <i>Culex pipiens</i> complex within the USA<br><b>Andrea Gloria-Soria</b>   |
| 16:30 | <b>8-2-02</b> Utilising worldwide comparative genomics to explore insecticide resistance in <i>Aedes aegypti</i><br><b>Emma Louise Collins</b>   | 17:30 | <b>8-2-06</b> Sequencing and bioinformatics pipelines for the detection of molecular markers of acaricide resistance in ticks<br><b>Jordan T Bird</b>  |
| 16:45 | <b>8-2-03</b> "Resistance is futile...or is it?": the impact of next-generation malaria vector control tools on the evolution of insecticide resistance<br><b>Louisa Alexandra Messenger</b> | 17:45 | <b>8-2-07</b> In-trap DNA contamination: tsetse ( <i>Glossina sp.</i> ) xenomonitoring methods can result in over-estimates of <i>Trypanosoma brucei</i> infection<br><b>Isabel Saldanha</b> |
| 17:00 | <b>8-2-04</b> The Use of Genomic Information on Insecticide Resistance in Applied Vector Management Programs<br><b>Grayson Brown</b>   | 18:00 | <b>8-2-08</b> Identification and characterization of densovirus endogenous sequences in the whitefly <i>Bemisia tabaci</i><br><b>Kai-Heng Wei</b>  |

## Room 555

## Symposium 4-1

9:45 - 11:45



## De-coding the Role of Insect Communication in IPM: Present Research and Future Directions

Chair: Justin George (USDA-ARS), Rupesh Kariyat (University of Arkansas)

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|-------|---|-------|--|
| 9:45  | <b>4-1-01</b> The Building Blocks of Efficacious Semiochemical Pest Management in Crop Protection.<br><b>Agenor Mafra Neto</b>  | 10:45 | <b>4-1-05</b> Decoding the semiochemically-mediated interactions among an invasive insect pest, a pathogen, and their fruit host<br><b>Cesar Rodriguez-Saona</b>   |
| 10:00 | <b>4-1-02</b> Integrating semiochemicals and trap crops towards developing an attract-and-kill strategy against tarnished plant bug, <i>Lygus Lineolaris</i> , (Hemiptera:Miridae) in cotton.<br><b>Justin George</b> | 11:00 | <b>4-1-06</b> Revisiting push-pull intercropping: The 'push' intercrop <i>Desmodium</i> does not deter ovipositing <i>Spodoptera frugiperda</i> but decimates their offspring<br><b>Anna Laura Erdei</b> |
| 10:15 | <b>4-1-03</b> Using chemical ecology and ecophysiology to understand herbivory X drought interactions in Soybean, and its impact on host and herbivore growth and defense traits.<br><b>Rupesh Kariyat</b>            | 11:15 | <b>4-1-07</b> Optimizing the use of parasitoids in pest management through elucidating the chemical and genetic basis of their sex pheromones<br><b>Jan Buellesbach</b>                                  |
| 10:30 | <b>4-1-04</b> Decoding direct and indirect sorghum defenses against sap-sucking aphids<br><b>Joe Louis</b>  | 11:30 | <b>4-1-08</b> Complex chemical communication: multifunctional signals in a coreid bug<br><b>Geoffrey Broadhead</b>   |

## Symposium 6-1

13:30 - 18:15



## New developments in entomological precision nutrition

Chair: Stuart Wigby (University of Liverpool), Andrew William McCracken (University of Liverpool), Juliano Morimoto (University of Aberdeen)

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|-------|--|-------|--|
| 13:30 | <b>6-1-01</b> Presentation Withdrawn   | 15:30 | <b>Coffee Break</b>  |
| 13:45 | <b>6-1-02</b> The context dependent perception of dietary lipids<br><b>Marko Brankatschk</b>   | 16:15 | <b>6-1-09</b> Gustatory receptor mediated feeding preference in the <i>Bactrocera dorsalis</i><br><b>Bao Dong</b>  |
| 14:00 | <b>6-1-03</b> Effect of switching in different nymphal stages between pollen and <i>Ephestia kuehniella</i> eggs in the survival and fecundity of <i>Orius laevigatus</i> : regulated deficit feeding<br><b>María del Carmen Reche Guillermo</b> | 16:30 | <b>6-1-10</b> A complete energy budget for a generalist herbivore caterpillar, <i>Spodoptera littoralis</i><br><b>Awawing Anjwengwo Andongma</b>   |
| 14:15 | <b>6-1-04</b> Bumblebees adjust their nutrition to face temperature variation<br><b>Mathieu Lihoreau</b>   | 16:45 | <b>6-1-11</b> Nutritional immunology in insects<br><b>Fleur Ponton</b>   |
| 14:30 | <b>6-1-05</b> Testing the consequences of adaptations to macronutrient balance in <i>Drosophila melanogaster</i><br><b>Kwang Pum Lee</b>   | 17:00 | <b>6-1-12</b> Antibiotics, the microbiome and nutrient processing – understanding how interactions between diet and the microbiome affect bee health<br><b>Ruth Archer</b>                                     |
| 14:45 | <b>6-1-06</b> Macronutrients interact with sterols to mediate mating-dependent lifespan and fertility in male <i>Drosophila melanogaster</i><br><b>Andrew William McCracken</b>  | 17:15 | <b>6-1-13</b> Metabolite profiling links lysine to thermotolerance in insects<br><b>Fumiaki Obata</b>  |
| 15:00 | <b>6-1-07</b> Glutamine enhances sucrose taste through a gut microbiota-gut-brain axis in <i>Drosophila</i><br><b>Qiaoping Wang</b>  | 17:30 | <b>6-1-14</b> Does What You Eat Affect How You Mate? Disentangling the Interactions Between Diet-Induced Phenotypic Plasticity and Adult Reproductive Strategies in Black Soldier Flies.<br><b>Qihui Zhang</b> |
| 15:15 | <b>6-1-08</b> Artificial rearing and biorational management of pest flies in the era of precision nutrition<br><b>Carlos Pascacio-Villafán</b>   | 17:45 | <b>6-1-15</b> miR-275/305 cluster is essential for maintaining energy metabolic homeostasis by the insulin signaling pathway in <i>Bactrocera dorsalis</i><br><b>Ziniu Li</b>                                  |

18:00 **6-1-16** A novel design and analysis for examining the effects of several nutritional components on life-history traits.  
**John Hunt**

Room 509

Symposium 17-1

9:45 - 11:45



**Aging and longevity of social insects**

**Chair:** Eisuke Tasaki (Niigata University), Mamoru Takata (Kyoto University), Kenji Matsuura (Graduate School of Agriculture, Kyoto University)

9:45 **17-1-01** Ageing in termites and the effect of sociality  
**Judith Korb**

10:15 **17-1-02** Nutrition influences task allocation and life history trade-offs in ants  
**Abel Bernadou**

10:30 **17-1-03** Regulation of olfactory neural development and longevity in ants  
**Hua Yan**

10:45 **17-1-04** Social isolation is a cause of short life span through oxidative stress in ants, *Camponotus fellah*  
**Akiko Koto**

11:00 **17-1-05** Comparative Longevity of Ant Workers Across Phylogenies: A Hierarchical Analysis of Field and Laboratory Observations  
**Hannah Riskas**

11:15 **17-1-06** *PLIN2*-induced ectopic lipid accumulation promotes muscle ageing in gregarious locusts  
**Siyuan Guo**

11:30 **17-1-07** Individual vs. Social Influences - What determines longevity in social insects?  
**Liliana Rebekka Fischer**

Symposium 17-2

13:30 - 18:15



**From Digestion to Microbiome-Driven Behavior: Gut Functions and Symbiosis in Social Insects**

**Chair:** Gaku Tokuda (University of the Ryukyus), Nathan Lo (The University of Sydney), Eyal Privman (University of Haifa), Ryo Miyazaki (National Institute of Advanced Industrial Science and Technology)

13:30 **17-2-01** Endogenous digestive system in termites  
**Hirofumi Watanabe**

13:45 **17-2-02** Unexpectedly diverse symbiotic protist community of *Reticulitermes tibialis*: Implications for symbiont inheritance and coevolution  
**Gillian Gile**

14:00 **17-2-03** Disrupting a long-standing symbiotic relationship: artificial manipulation of protist community composition in termite gut and its effects on host traits  
**Tatsuya Inagaki**

14:15 **17-2-04** Diverse and complex cellular symbioses between cellulolytic protists and prokaryotes in the termite gut  
**Yuichi Hongoh**

14:30 **17-2-05** Bioprospecting the higher termite (Termitidae) gut digestion system for improved lignocellulose utilisation  
**Magdalena Calusinska**

14:45 **17-2-06** Complete genomes reconstructed with HiFi metagenomic reveal the function of the dominant gut bacteria of a Nasute termite  
**Thomas Bourguignon**

15:00 **17-2-07** Unraveling the potential of unexplored internal and external microbial symbionts of the xylophagous termite *Sphaerotermes*  
**Anna Prokhorova**

15:15 **17-2-08** Termite bioreactors and rock & roll ants: exploring the ecology, evolution, and function of fungus-farming insects  
**Hongjie Li**

15:30 **Coffee Break**

16:15 **17-2-09** Nutritional symbiosis: elucidating the role of gut microbiota in the herbivorous ant *Dolichoderus thoracicus*  
**Shu-Ping Tseng**

16:30 **17-2-10** Fungal infection alters collective nutritional intake of ant colonies  
**Enikő Csata**

16:45 **17-2-11** Impacts of the gut microbiome on honey bee (*Apis mellifera*) physiology  
**Waldan Kwong**

17:00 **17-2-12** Combinatorial effects of gut microbes on physiology and behavior of honey bees  
**Ryo Miyazaki**

17:15 **17-2-13** Outer Membrane Vesicle Characterisation of the *Apis mellifera* Gut Microbiome Reveals Putative Cell to Cell Communication Mechanisms  
**Rodney Eyles**

17:30 **17-2-14** Social, ecological, and developmental drivers of a global gut microbiome invasion phenomenon in bumble bees  
**Tobin Hammer**

17:45 **17-2-15** From Pollen to Putrid: Comparative Metagenomics Reveals How Microbiomes Support Dietary Specialization in Vulture Bees  
**Jessica Maccaro**

18:00 **17-2-16** How do fungal mutualists affect social behaviour of a facultatively eusocial ambrosia beetle?  
**Eleonora Vittoria Fontana**

## Room 510

## Symposium 10-1

9:45 - 11:45



## Biology of insect bacteriocytes and microbial symbionts

**Chair:** Shuji Shigenobu (National Institute for Basic Biology), Takema Fukatsu (National Institute of Advanced Industrial Science and Technology (AIST)), Alex Wilson (University of Miami)

9:45 **10-1-01** The Evolution of the Symbiotic Interface  
**Alex Wilson**

10:00 **10-1-02** Evolutionarily conserved metazoan pathways have evolved new functions and regulate bacteriocytes' dynamics in the context of symbiosis  
**Mélanie Ribeiro Lopes**

10:15 **10-1-03** The bacteriocytes of females and males in whitefly *Bemisia tabaci* have differentiated development fate  
**Nana Li**

10:30 **10-1-04** Genome editing and multi-omics analysis towards an understanding of bacteriocyte endosymbiosis in aphids  
**Shuji Shigenobu**

10:45 **10-1-05** On the evolutionary developmental origin and molecular bases of bacteriocyte symbioses in lygaeoid stinkbugs  
**Yu Matsuura**

11:00 **10-1-06** One Tribe Residing in Fairyland of Symbiosis: Amazing Diversity of Bacteriome Symbiosis in Spittlebugs  
**Ryuichi Koga**

11:15 **10-1-07** Intra-nuclear *Rickettsia*: Attempt to identify genes responsible for nuclear invasion  
**Yudai Nishide**

11:30 **10-1-08** Biological and nutritional roles of bacteriocytes, urocytes, and adipocytes in the fat body of the German cockroach *Blattella germanica*  
**Tomohito Noda**

## Symposium 10-2

13:30 - 18:15



## Extended phenotypes emerging across insects, plants and microbes

**Chair:** Takuya Sato (Kyoto University), Susumu Katsuma (The University of Tokyo), Takema Fukatsu (National Institute of Advanced Industrial Science and Technology (AIST)), Carolyn Elya (Harvard University)

13:30 **10-2-01** Molecular mechanisms underlying baculovirus-induced host behavior manipulation  
**Susumu Katsuma**

13:45 **10-2-02** Neural mechanisms of fruit fly behavioral manipulation by the killer fungus *Entomophthora muscae*  
**Carolyn Elya**

14:00 **10-2-03** Hijacked! Investigating the molecular strategies used by a zombie-making fungus to manipulate carpenter ant behavior.  
**Charissa de Bekker**

14:15 **10-2-04** Adaptive and maladaptive consequences of enhanced polarotaxis for the extended phenotype of nematomorph parasites in human-dominated environments  
**Takuya Sato**

14:30 **10-2-05** Behavioural and proteomic analysis of the water-entry behaviour in crickets (*Acheta domesticus*) infected with the nematomorph *Paragordius varius*.  
**Louise Coates**

14:45 **10-2-06** Brain manipulation of mammalian host by intracellular parasite, *Toxoplasma gondii*  
**Yoshifumi Nishikawa**

15:00 **10-2-07** Why do some vertically transmitted viruses kill male hosts?  
**Daisuke Kageyama**

15:15 **10-2-08** Commonality and difference in male-killing mechanisms caused by insect symbionts  
**Toshiyuki Harumoto**

Sunday 25 Aug

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## Daily schedules

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Sunday 25 Aug

15:30 **Coffee Break**

16:15 **10-2-09** Evolutionary and genomic insights into male-killing and non-male killing *Spiroplasma* endosymbionts associated with the pea aphid  
**Jean-Christophe Simon**

16:30 **10-2-10** Identification of the gall-inducing peptide from a gall-inducing aphid, *Schlechtendalia chinensis*  
**Tomoko Hirano**

16:45 **10-2-11** Manipulation of Plant Morphology by Gall-Forming Social Aphids  
**Mayako Kutsukake**

17:00 **10-2-12** Venom proteins of the endoparasitoid wasp *Asobara japonica* induce epithelial cell death in the host *Drosophila* species and ensure parasitism success  
**Ryusuke Niwa**

17:15 **10-2-13** Exploitation of behavioral fever as a defense strategy against parasitoids  
**Jianhua Huang**

17:30 **10-2-14** Symbiont-induced modification of host's adaptive phenotypes  
**Takema Fukatsu**

17:45 **10-2-15** Paleocene origin of a streamlined digestive symbiosis in leaf beetles  
**Marleny Garcia Lozano**

18:00 **10-2-16** Identification of plant virus proteins responsible for the manipulation of host phenotype and vector behavior  
**Quentin Chesnais**

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## Monday 26 August

## Event Hall

Poster 1

11:45 - 13:30



## Apiculture and Sericulture

- P0001 Pebrine detection in wild silkworms using Artificial Intelligence and Machine Learning models.  
**Vijay Nageshappa**
- P0002 Bmo-miR-3351 modulates glutathione content and inhibits BmNPV proliferation by targeting *BmGSTe6* in *Bombyx mori*  
**Shi-Huo Liu**
- P0003 Pro-Gln-Gln Triplet Tandem Repeat Protein Predominantly Constituting the Underwater Cocoon of the Aquatic Grass Moth (Crambidae: Acentropniae)  
**Jeongjun Lee**
- P0004 How does the silkgland of Japanese oak silkmoth, *Antheraea yamamai* larvae develop?-To elucidate the concentration dynamics of radiocesium in the silk-  
**Toshimasa Mitamura**
- P0005 Composition of aquatic fibers - a comparison of caddisfly silks  
**Lenka Rouhova**
- P0006 Transcriptome analysis of midgut, fat body and salivary glands of Eri silkworm *Samia ricini* (Saturniidae: Lepidoptera) fed on different host plants and artificial diet.  
**Mohammed Muzeruddin Baig**
- P0007 Cytotoxin-mediated silk gland organ dysfunction diverts resources to enhance silkworm fecundity by potentiating nutrient-sensing IIS/TOR pathway  
**Eiji Kotani**
- P0008 Efficient gene replacement at the silkworm fibroin heavy chain gene by TALEN-based homologous recombination  
**Yoko Takasu**
- P0009 Japanese honey bees swarmed more often between 2000 and 2022  
**Kiyohito Morii**
- P0010 Caste differences in the dopaminergic system during metamorphosis in eusocial bees  
**Takafumi Onuma**
- P0011 Analysis of substances that Japanese honey bees smear on their hive entrance to protect the hive from Asian giant hornets.  
**Yoshitaka Sumimiya**
- P0012 Rapid identification of pests, silk, microsporidia, and polyhedrosis viruses by mass spectrometry  
**Hideyuki Kajiwara**
- P0013 Analysis of putative virulence determinants of *Melissococcus plutonius* causing European foulbrood  
**Mariko Okamoro**
- P0014 Morphometry and Microscopic Analysis of Reproductive Organs of *in-vitro* Rearing Stingless Bee Queen, *Heterotrigona itama* (Apidae: Meliponini)  
**Atsalek Rattanawanee**
- P0015 Function of DNA G-quadruplex structure during development of *Bombyx mori*  
**Kangkang Niu**
- P0016 Emerging mite threat to honey bees: managing the latest pest challenge in Asia  
**Madison Sankovitz**
- P0017 An Effective Chemical Permeabilization of Silkworm Embryos  
**Keiro Uchino**
- P0018 Laboratory evaluation of selected essential oils against *Varroa destructor*  
**Orlando Campolo**
- P0019 Determination of sex and age differences in the chemical composition of honey bee (*Apis mellifera* L.) cuticle using FTIR-ATR spectroscopy  
**Lidija Svecnjak**
- P0020 Centre for information and improvement of knowledge about pollinating insects - project concept and its implementation  
**Aleksandra Splitt**
- P0021 Comparative analysis of honey attributes across Central Asia, Korea, and New Zealand  
**Hyeonjeong Jang**

Poster 2

11:45 - 13:30



## Chemical Ecology

- P0022 Developing new sustainable tools for pest control: Decoding the chemical ecology of the cork oak borer, *Cororebus undatus*  
**Sofia Branco**
- P0023 Unveiling the Indian meal moth's sex pheromone perception: Age, mating status, and behavioral implications  
**Jacqueline M Maille**

- P0024 Ligand-binding properties of odorant binding protein 6 in *Lasioderma serricorne* to sex pheromone and plant volatiles  
**Guiyao Wang**
- P0025 Investigation on chemically mediated behaviour of *Liriomyza* leafminers.  
**Soo Jean Park**
- P0026 Possible use of 2-octenal, one of the alarm pheromones of rice-ear bugs, *Leptocorisa chinensis* for their management under field conditions  
**Ken-ichi Yamashita**
- P0027 Study on the function of benzoate esters in the interaction between rice and brown planthopper  
**Huijing Li**
- P0028 Plant components that mediate oviposition behavior in *Eurema mandarina*  
**Hisashi Omura**
- P0029 Nesting materials shape community: Stingless bee nest chemistry and their microbial tenants  
**Shao-Xiong Chui**
- P0030 Sex pheromone of the azalea mealybug: absolute configuration and kairomonal activity  
**Yuma Sugawara**
- P0031 The importance of fine-scale patterns and intraindividual variation in chemically mediated plant-pollinator interactions.  
**Gwen Melissa Bode**
- P0032 Host plant chemical response to oviposition by damselfly (*Lestes*)  
**Radana Chytilová**
- P0033 Insect-induced volatile interactions between Scots pines in a polluted free-air environment  
**Tihomir Simin**
- P0034 Volatile organic compounds, tolerant varieties and entomopathogenic fungi: three potential methods for wireworms' control  
**Fanny Ruhland**
- P0035 Comprehensive identification of female sex pheromones in Erebininae moths  
**Tareq A. S. Abubaker**
- P0036 Roots to shoots: rhizospheric bacterium enhances anti-herbivore defences in wild and cultivated tomatoes  
**Diego Martins Magalhães**
- P0037 Shape-shifting Floral Scent: Temporal Variation of Prey Signals Attracts Wasps to the Generalist Plant *Serjania glabrata*  
**Jonas Konicek**
- P0038 Exploring the oviposition mechanism of the guava fruit fly (Diptera: Tephritidae) using olfactory cues  
**Tengda Guo**
- P0039 First Identification of (+)-(7R)-Actinidine from Rove beetles (Coleoptera: Staphylinidae) and its Biosynthetic Pathway.  
**Yu Takatani**
- P0040 Hexanal-oxidizing activity in the antennae of *Leptoglossus occidentalis*, (Hemiptera: Coreidae) correlates with inactivation of its alarm pheromone  
**Koji Noge**
- P0041 Discovery and exploitation of an herbivore susceptibility gene to improve rice yield in the field  
**Peng Kuai**
- P0042 A plant-derived phytochemical in the frass of a stem-boring pest elicits defenses in rice plants  
**Shuting Chen**
- P0043 Odor sensors to detect and identify agricultural pests for crop protection  
**Carla Marques Arce**
- P0044 Identification of a new gustatory receptor BminGR59b tuned to host wax in a specialist, *Bactrocera minax* (Diptera: Tephritidae)  
**Changying Niu**
- P0045 Small hive beetle, *Aethina tumida* (Coleoptera: Nitidulidae): cuticular chemical profile and possible chemical mimicry in a honeybee pest  
**R Andrew Hayes**
- P0046 Differences in male mate recognition between invasive and native Japanese *Anoplophora*: Do males recognize female contact pheromones of congeneric species?  
**Hiroe Yasui**
- P0047 A high-quality genome of the bella moth (*Utetheisa ornatatrix*) reveals pyrrolizidine alkaloid sequestration genes (Lepidoptera: Erebidae)  
**Ana Isabel Lopez**
- P0048 Chemical defenses of *Physalis angulata* leaves  
**Masanori Morimoto**
- P0049 Responses of plant herbivores and natural enemies to plant volatiles  
**Savvina Toufexi**
- P0050 Screening of a specific jasmonic acid agonist for rice resistance to herbivores  
**Junli Xiao**
- P0051 The Cornell Chemical Ecology Core Facility: How we can help YOU with quantitative analysis of small molecules  
**Danielle L Dryer**
- P0052 Exaptation followed by adaptation: The capacity to sense spiroacetals has led to the evolution of host plant specialization in Megachilidae bees  
**Katharina Brandt**
- P0053 Beetle volatiles trigger allergy in humans? A preliminary investigation on the volatiles from an aggregating indoor pest *Luprops tristis*  
**Sajidha Mohammed**
- P0054 Genome-wide identification and expression of olfactory-related genes in stored-product psocid *Liposcelis bostrychophila* (Psocoptera: Liposcelididae)  
**Dandan Wei**
- P0055 Structure activity relationship for insect antifeedant activity of melampolides from glandular trichomes of yacón leaf  
**Yusuke Nakajima**

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- P0056 From homeostasis to bravery: How social aphids chemical cues trigger flexible division of labor  
**Shigeru Matsuyama**
- P0057 IR76b regulates the oviposition preference for acetic acid in *Bactrocera dorsalis*  
**yuanyuan peng**
- P0058 Do Green Leaf Volatiles Directly Affect the Performance of Herbivores?  
**Rika Ozawa**
- P0059 Impact of Feeding on Sorghum Polyphenolic Treated Diet on Population Production in Stored Product Pests.  
**Rupinder Singh**
- P0060 Expression map of olfactory and gustatory receptors in the moths *Spodoptera littoralis* and *S. frugiperda*  
**Camille Meslin**
- P0061 In silico approaches expand the chemical space of insect odorant receptors  
**Emmanuelle Jacquin-Joly**
- P0062 HONEYBEE WORKERS DISPLAY TASK-RELATED AND SUBSPECIES-SPECIFIC PATTERNS IN THEIR CUTICULAR HYDROCARBON PROFILES  
**Thomas Schmitt**

Poster 3

11:45 - 13:30



Conservation, Biodiversity and Biogeography

- P0063 The Odonata fauna of the Imperial Palace, Tokyo  
**Takuya Kiyoshi**
- P0064 Quantitative morphology of lacewing larvae demonstrates the decline in diversity of Neuroptera, where other methods can not  
**Gideon T. Haug**
- P0065 *Oxya yezoensis* as a useful indicator of radiocesium transfer in a grassland ecosystem a decade after the Fukushima Dai-ichi Nuclear Power Plant accident  
**Sota Tanaka**
- P0066 Effects of wing color change caused by alien host plant on mating behavior of a lycaenid butterfly, *Tongeia fischeri*  
**Karen Hisai**
- P0067 How *Blattella nipponica* adapted the various environment in Japan.  
**Hiroki Matsumoto**
- P0068 Evolutionary genomics of the Japanese honeybee, *Apis cerana japonica*  
**Takeshi Wakamiya**
- P0074 Developing a long-term insect biodiversity monitoring program for a South African semi-arid savanna ecosystem  
**Michelle G. Au**
- P0075 The risk assessment of genetic disturbance in Japanese rhinoceros beetle (*Trypoxylus dichotomus*) by a phylogeographic approach  
**Tomo Hamano**

- P0076 Distribution and ecology of the two net spinning caddisfly species in the small mountainous watershed, Japan.  
**Kaori Kochi**
- P0077 Investigating the effect of habitat degradation on saproxylic arthropod diversity and ecosystem functions in the peat swamp forests of Brunei Darussalam  
**Sean Yap**
- P0078 Sampling methodology for insect biodiversity assessment on marginal land – a case study  
**Željko Milovac**
- P0079 Diversity and abundance of saproxylic insect species in logging residue piles in Estonia  
**Ivar Sibul**

- P0069 Biology and conservation of the European stag beetle (*Lucanus cervus*): recent advances and lessons for similar species  
**Arno Thomaes**
- P0070 Pollinator conservation in low- and middle-income countries: the case of Morocco  
**Ahlam Sentil**
- P0071 Multi-scale drivers of dragonfly distribution across Africa  
**Charl Deacon**
- P0072 Indian Drosophilid Taxonomy: Multidimensional Approaches toward saving Taxonomy and Taxonomist  
**Rajendra Singh Fartyal**
- P0073 Soil invertebrates contribute to litter decomposition and plant nitrogen uptake  
**Xiaoyi Zeng**
- P0080 Soil biodiversity and energy flux in organic and conventional paddy fields in winter  
**June Wee**
- P0081 Active versus passive Forest Rewilding: Traditional and Molecular Approaches to Monitor Soil Biome Community Structural Responses During Reforestation  
**Coskun Guclu**

- P0082 How many Darwin wasps are out there? Estimation of Oriental fauna diversity and conservation approaches  
**Alexey Reshchikov**
- P0083 Testing the power of citizen science: German Heteroptera challenge 2023 on the online biodiversity platform observation.org  
**Viktor Hartung**

- P0084 Adapting and Applying a Modified Dragonfly Biotic Index for Assessing Freshwater Ecosystems in Central Europe  
**Eva Bilkova**
- P0085 Exploring the unseen: Neotropical Diversity of *Metopomyza* Enderlein and *Phytomyza* Fallén (Diptera: Agromyzidae) in Mid-Elevation Cloud Forests of Costa Rica  
**Stephanie Boucher**
- P0086 Termite-mediated ecosystem functions on seedling growth and survival during drought across primary and logged tropical rainforests  
**Nok Lam Yuen**
- P0087 Comparison of butterfly and dragonfly abundances and diversity inside and outside deer enclosure fences  
**Shota Izumi**
- P0088 Specificity and species diversity of Collembola communities on fallen branches  
**Hiro Kasai**
- P0089 Multi-perspective imaging and 3D modeling of insects using acoustic levitation  
**Nathalie Klug**
- P0090 Combining camera trapping and deep learning for labor-saving monitoring of perching *Sympetrum* dragonflies  
**Akira Yoshioka**
- P0091 *Apis dorsata*'s Waggle Dance Detection in Natural Conditions Using Video-based Deep Learning  
**Sylvain Grison**
- P0092 Checklist of Dung Beetles of Singapore (Coleoptera: Scarabaeidae: Scarabaeinae)  
**Zann Jiexin Teo**
- P0093 Spillover and board infectivity of two thelastomatid nematodes in cultured cockroaches  
**Ming-Chung Chiu**
- P0094 Urbanization of the Mexican cloud forest: Orchid Bees Diversity and Function  
**Alvaro Hernández**
- P0095 Which characteristics of spoil heaps shape the communities of diurnal butterflies?  
**Adam Mikunda**
- P0096 Evaluating Microclimatic Conditions for Invertebrate Pollinators along Urban Wildlife Corridors  
**Nicole A. S.-y. Dorville**
- P0097 Garden butterfly survey: urban butterfly populations over 8 years in Kyoto.  
**Osamu Imura**
- P0098 Urbanisation drives inter- and intraspecific variation in flight-related morphological traits of diving beetles (Coleoptera: Dytiscidae) at different landscape scales  
**Wenfei Liao**
- P0099 Exploring the causal relationship between insecticide use and sharp population declines of the dragonfly *Sympetrum frequens* in Japan  
**Kosuke Nakanishi**
- P0100 Insecticide fipronil exposure and water temperature rise sharply decrease the abundance of Odonata nymphs in experimental paddies  
**Naoto Ishiwaka**
- P0101 Invisible Mass Mortality of Parasitoids: Impact of the Fungicide Benomyl in Host Diets on the Parasitoids of Herbivorous Caterpillars  
**Kazusa Egawa**
- P0102 Exploitative interspecific competition between distribution-expanding and native species of large-bodied diving beetles during the larval stages  
**Taichi Fukuoka**
- P0103 The year of the microhymenoptera – Assessing the phenology of parasitoid Hymenoptera from mass samples  
**Maura Haas-Renninger**

## Poster 4

11:45 - 13:30



## Development and Reproduction

- P0104 Lysine promotes mutual dependence between whitefly and two intracellular symbionts  
**Xiyu Bao**
- P0105 Knock-in alleles of Insulin receptor tagged by fluorescent proteins mCherry or EYFP for expression and functional analyses in *Drosophila melanogaster*  
**Takashi Adachi-Yamada**
- P0106 Lytic polysaccharide monooxygenases are novel critical enzymes participate in chitin degradation in insect  
**Mingbo Qu**
- P0107 Two key structural proteins that determine mechanical properties of the locust mandible  
**Tian Liu**
- P0108 Functions of groups I and II chitinases, TcCHT5 and TcCHT10, in turnover of chitinous serosal cuticle during embryogenesis in *Tribolium castaneum*  
**Myeongjin Kim**
- P0109 Discovery Novel and Potent Chitinase inhibitors via Rational Design and Structure-Based Virtual Screening  
**Xi Jiang**
- P0110 Molting-related Proteases in the Brown Planthopper, *Nilaparvata lugens*  
**Yucheng Xie**
- P0111 A chitin-binding protein with elastic motifs: the functions of resilin and the mechanism of its polymerization  
**Miyuna Hagiwara**

## Poster presentations

Sunday 25 Aug

- P0112 Pharmacological experiments on wing pattern development of Lepidoptera  
**Andrei Sourakov**
- P0113 Expressions of sugar transporters/trehalases in relation to PTH-stimulated ecdysteroidogenesis in the silkworm, *Bombyx mori*  
**Shi Hong Gu**
- P0114 The super elongation complex acts downstream of *kriippel homolog 1* to control reproduction in the cabbage beetle *Colaphellus bowringi*  
**Yu-Lian Zhao**

Monday 26 Aug

- P0115 Endocrinal regulation of resource allocation in stag beetles  
**Kazuya Ohtagaki**
- P0116 An MD-2-related lipid-recognition protein is required for insect reproduction and integument development.  
**Yanyuan Bao**
- P0117 The biosynthetic pathway of insect steroid hormone: conversion of oxidized derivatives of 7-dehydrocholesterol into ecdysone  
**Hajime Ono**

Tuesday 27 Aug

- P0118 Hormonal regulation of stage-specific cuticular formation in the red flour beetle, *Tribolium castaneum*  
**Koichiro Tada**
- P0119 Hormonal regulation of sexually dimorphic development of the Japanese mealybug *Planococcus kraunhiae*  
**Chieka Minakuchi**

Wednesday 28 Aug

- P0120 High-throughput RNAi screening uncovers pathways interacting with juvenile hormone signaling  
**Raveendra Babu Mokhamatam**
- P0121 Juvenile hormone acts via a membrane protein to promote vitellogenin secretion from fat body cells to hemolymph  
**Baojuan Zeng**
- P0122 Functional analyses of Fat-Hippo pathway genes in stag beetles  
**Taisei Ashimori**

Thursday 29 Aug

- P0123 Developmental mechanisms underlying “sharpness” of mandibles in stag beetles  
**Leon Nozawa**
- P0124 NADPH oxidase 5 is essential for molting and oviposition in a rice planthopper *Nilaparvata lugens*.  
**Luyao Peng**
- P0125 Diversity and functions of protein glycosylation in insect development  
**Kristof De Schutter**

Friday 30 Aug

- P0126 Influence of sorghum starch composition on *Rhyzopertha dominica* (F.) and *Sitophilus oryzae* (L.) development  
**Deanna Scheff**

- P0127 The vertical transmission of parthenogenesis-induction *Wolbachia* in *Encarsia formosa*  
**Ce Li**
- P0128 Origins of sperm dimorphism in Lepidoptera: insights from monomorphic sperm of bagworm moths  
**Andrew J Mongue**
- P0129 Exploring the roles of *germ cell-less* in germ line development of the milkweed bug *Oncopeltus fasciatus*  
**Jonchee A. Kao**
- P0130 Characterization of the *doublesex* gene in the rice stem borer, *Chilo suppressalis* (Walker)  
**Di Guo**
- P0131 The neuropeptide corazonin and its receptor *crzR* regulate the post-mating response of brown planthopper.  
**Ning Zhang**
- P0132 Reproductive Senescence in the Pollinator, *Megachile rotundata*  
**Jacob Pithan**
- P0133 Caste-specific developmental characteristics during prepupal stages in the ant *Pheidole megacephala*  
**Hajime Yaguchi**
- P0134 Daughterless is essential to complete differentiation from neuroepithelial cells into neural stem cells in the fruit fly, *Drosophila melanogaster*.  
**Takumi Suzuki**
- P0135 The heights of passion: how pairs of dung-beetles coordinately move brood balls towards unknown destinations.  
**Claudia Tocco**
- P0136 Life history of a ground cockroach *Opisthoptatia orientalis* and growth experiments using beer residues.  
**Hiroki Takekata**
- P0137 Does larval compensatory growth reaction to restricted growth experience differ from that to smaller body sizes at birth?  
**Sugihiko Hoshizaki**
- P0138 Knockout mutagenesis of an exocrine protein gene expressed in male internal reproductive organ of Eri silkmoth *Samia ricini*  
**Kei Otsuka**
- P0139 The common bedbug *Cimex lectularius* as a model to study innate reproductive immunity  
**Christoph-Rüdiger von Bredow**
- P0140 Deciphering limb regeneration potential in ladybird beetles  
**Shivali Pandita**
- P0141 Effects of different body parts of crickets on reproductive success rate and gene expression  
**Ayaka U Takashima**



## Ecology and Evolution

- P0142 Can aggregation - basis of successful aposematism - be maintained in an aposematic leaf beetle that is moving dynamically within a host plant field?  
**Nicole Kalberer**
- P0143 Fine-scale population structure of *Aedes aegypti* in southern Taiwan inferred by genome-wide SNPs  
**Hung-Yi Wang**
- P0144 Effects of photoperiod duration on diapause in the Alfalfa Leaf Cutting Bee (*Megachile rotundata*)  
**Joshua D Rinehart**
- P0145 Realized flower constancy: optimal foraging of bumble bees for balancing retrieval and skipping costs and its possible consequences for floral diversity  
**Kentaro Takagi**
- P0146 Female attelabid weevils recognize leaf asymmetry for making leaf rolled cradles (Attelabinae, Attelabidae, Coleoptera).  
**Kazuhiko Sakurai**
- P0147 Frequency analysis of the wingbeat and flight tone in paper wasps  
**Iori Morimoto**
- P0148 Heading maintenance during sun orientation is influenced by visual stimuli but not motor state in *Drosophila melanogaster*  
**Ysabel Giraldo**
- P0149 Using automated pheromone traps, stable isotopes, and atmospheric transport modelling to characterize long-distance dispersal of a forest defoliator.  
**Jean-Noel Candau**
- P0150 Host preference and reproductive strategies of *Galleria mellonella*  
**Takaki Hinata**
- P0151 The study of Social Wasps Populations in Seoul, South Korea, 2023  
**Hyeonsuk An**
- P0152 Long-term changes of moths in the high mountains compared to the lowlands of southern Korea  
**Chang-Gyu Park**
- P0153 Assessment of Ecological health based on Benthic Macroinvertebrate in 15 Streams, Korea  
**Myeoung cheol Kim**
- P0154 Assessment of Ecological health based on Benthic Macroinvertebrate in 15 Streams, Korea  
**Myeoung cheol Kim**
- P0155 Egg maturation strategies in Cynipoidea (Hymenoptera): a comparison between parasitoids and gall inducers  
**Yajiao Wu**
- P0156 Are gall sizes of *Daphnephila truncicola* (Diptera: Cecidomyiidae) affected by parasitoids?  
**Shih Syuan Wang**
- P0157 Comparison of preference and electrophysiology to the environmental chemicals produced in the fruit fermentation between *Drosophila melanogaster* and *Drosophila suzukii*  
**YeongHo Kim**
- P0158 Developmental mechanisms of psyllid spherical galls on the leaves of *Machilus japonica* var. *kusanoi*  
**Yao De Shan**
- P0159 Structural variations in Rhus gall aphid genomes  
**Yiyuan Li**
- P0160 Emergence time as a method of resource partitioning in mycophagous insects  
**Rohit Bangay**
- P0161 Exploring genes responsible for male mandibular reduction in island stag beetles *Prosopocoils Hachijoensis*.  
**Kodai Kishino**
- P0162 Ecological Traits of Three Species of *Xiphydria* Woodwasps from Japan: Host Tree Species and Eggs, Symbiotic Fungi and Mucus found in their bodies  
**Ryu Takagi**
- P0163 Impulsive bees vs. cautious bees: can individual variation in learning speed explain the contrasting foraging tactics of bumble bees?  
**Nozomi Takeuchi**
- P0164 Does sexual selection maintain female-limited polymorphism in Batesian mimicry? Comparison of mating frequencies in *Papilio polytes*  
**Shuya Yoshioka**
- P0165 Host plant nutritional quality and the insect immune response: a quantitative meta-analysis.  
**Su'ad Yoon**
- P0166 Ecosystem size or allochthonous resources influence the food chain length of an insect community in plant litter patches in a forested stream.  
**Shuhei Tachikake**
- P0167 Every day, the same bryophyte lunch: is it boring or dangerous?  
**Michaela Drgová**
- P0168 Occurrence history and development of a phenology Model for egg hatching of walking-stick insect, *Ramulus mikado* (Phasmatodea: Phasmatidae) in Korea  
**Youngwoo Nam**
- P0169 Ongoing hybridization between two invasive termite pest species (*Coptotermes*)  
**Ericka E. Helmick**
- P0170 Diversification of Neotropical termites  
**Menglin Wang**
- P0171 Diversification of sex determination gene *doublesex* in termites  
**Kokuto Fujiwara**

- P0172 Phylogeny and parallel evolution analysis of Australian wood-feeding and soil-burrowing cockroaches  
**Zhuzhi Zhang**
- P0173 Uncovering cryptic diversity of termites in the arid region of southern Africa  
**Felicitas Gunter**
- P0174 Comprehensive expression analysis of chemosensory genes during soldier differentiation in *Zootermopsis nevadensis*  
**Takumi Hanada**

- P0176 Ecological survey of *Sitophilus oryzae* and *Sitophilus zeamais* in Japan  
**Shiori Koga**
- P0177 Effects of biochar infused water on oviposition behavior and larval development in *Aedes aegypti*  
**Nicole S Rodrigues**
- P0178 Maladaptive photoperiodic response observed in a range-expanding moth *Milionia basalis pryeri* in southern Kyushu, Japan  
**Yoshinori Shintani**

- P0175 Unravelling the three axes of termite antipredator defences: A comparative analysis of morphological, chemical and behavioural defences of Australian termites  
**Hannah Smart**

- P0179 Life history of *Tachina nupta* (Diptera: Tachinidae), which parasitizes lepidopteran larvae by 'waiting for host passing'  
**Masayoshi Noma**
- P0180 High temperature heat stress dependency of inbreeding depression and thermal resistance in aphids  
**Nousheen Parven**

Poster 6

11:45 - 13:30



Genetics and Genomics

- P0181 Species-specific markers for quick identification of important rice plant hoppers  
**Srinivasa Narayana**
- P0182 Population Genomics Analysis of *Rhynchophorus ferrugineus* across its native and invasive range  
**Neelu Begum**

- P0191 Applying poly-moths to polymer waste: Investigating the polyethylene catabolic activity of two wax moth species, *Galleria mellonella* and *Achroia grisella*  
**Reginald Young**
- P0192 Aphid genomics: Introgression in invasives  
**Rebecca A Clement**

- P0183 Evolution of Feeding Behavior and Gustatory Receptors in Bombycoid Moths  
**Christian Davis Couch**
- P0184 Mother Knows Best: Unraveling the Transcriptome of Female Desert Locust Accessory Gland After Mating  
**Vivian A Peralta Santana**
- P0185 Unraveling the genetic basis of host-alternation in aphids using comparative genomics and transcriptomics.  
**Theo Vericel**

- P0193 Endogenous viral elements integrated in the genomes of *Bombyx mori* and *Samia ricini* are sources of PIWI-interacting RNAs (piRNA)  
**Shota Takeda**
- P0194 Presentation Withdrawn
- P0195 Transcriptome analysis of response to heat stress of *Lasioderma serricorne* larvae  
**Jianwei Wang**

- P0186 When do caveman statistics outperform machine learning? Old vs new in the analysis of insect RNAseq data  
**Benjamin Aaron Taylor**
- P0187 A population genomics approach to study the structure and evolution of native and introduced populations of the mountain wood ant *Formica paralugubris*  
**Lino Ometto**

- P0196 Genetic Analysis of the Different Populations of Brown Planthopper, *Nilaparvata lugens* (Stål) (Hemiptera: Delphacidae) Collected from Luzon and Visayas, Philippines  
**Gelyn Danglay Sapin**
- P0197 Exploring the genetic basis of a unique sex determination system in blowflies  
**Diniz Lima Ferreira**

- P0188 Comparative study of the repeatome in five Orthoptera species  
**Yuan Huang**
- P0189 Changes in gene expression during the molting cycle may disrupt worker development in hybrids of two *Coptotermes* termites  
**Kyung Seok Kim**
- P0190 Proteomic and transcriptomic profile of the black soldier fly larvae (*Hermetia illucens* L.) salivary glands  
**Cynthia Castro Vargas**

- P0198 Chromosome evolution in aphids  
**Thomas Mathers**
- P0199 Assessing incongruence of gene properties for phylogenetic inference with visualization method  
**Xiumei Lu**
- P0200 The dual role of TRA and TRA-2 proteins in splicing regulation of sex-determining genes  
**Kamoltip Laohakieat**
- P0201 Genetic basis of explosive benzoquinone biosynthesis in bombardier beetles.  
**Wendy Moore**

- P0202 Presentation Withdrawn
- P0203 InsectBase 2.0: a comprehensive gene resource for insects  
**Shenyang Tang**
- P0204 Whole Transcriptome Analysis of *Haemaphysalis longicornis* with Phlebovirus contamination in Korea  
**Jie Eun Park**
- P0205 Improved draft genome assemblies of diverse members within the *Bemisia tabaci* species complex  
**Susan Seal**
- P0206 Using DIPA-CRISPR to study the function of *Krüppel-homolog 1* in *Blattella germanica* embryos  
**Maria-Dolors Piulachs**
- P0207 Kynurenine 3-monooxygenase as a useful target to set up CRISPR/Cas9 genome editing in *Spodoptera exigua*  
**Daniel Pinos**
- P0208 The genes behind the scenes of visual mate preference  
**Kiana Kasmaii**
- P0209 Presentation Withdrawn
- P0210 What forces shape you? The genomics toward the dark side  
**Xin Zhou**
- P0211 Modification of the wing color pattern of *Drosophila guttifera* by developing the Gal4/UAS system  
**Masato Koseki**
- P0212 Heterospecific penetrance of supergene in interspecific hybrids between *Papilio polytes* and *Papilio helenus*  
**Kota Aoki**
- P0213 Research on specialization of forelegs using *Drosophila prolongata* as a model  
**Takumi Hiraishi**
- P0214 The genetic architecture of the “low-locomotive” behavior of domesticated silkworm larvae  
**Kenta Tomihara**
- P0215 Diversity and Role of the Silkworm Cocoon shell Protein Sericin-A  
**Muto Yamaoka**
- P0216 Unique aspects of insect viviparity across genomics, physiology, and behavior  
**Joshua B Benoit**
- P0217 Phylogenetic relationships of the groundnut/soya bean leaf miner populations from Africa, India and Australia based on the mtDNA gene sequences  
**Makhosi Buthelezi**
- P0218 Characterization of *doublesex* gene in the stag beetle *Dorcus rectus*  
**Kanon Yamauchi**
- P0219 Phylogenetic relationships of two closely related ticks, *Haemaphysalis megaspinosa* and *H. japonica*: testing the validity of mitochondrial barcoding  
**Mizue Inumaru**
- P0220 Lineage-specific gene expansion of insect feminizing gene *transformer* in stag beetles  
**Itsuki Ohtsu**
- P0221 Identification of a glycoside hydrolase mediating flavonoid uptake in *Bombyx mori* by QTL analysis  
**Ryusei Waizumi**
- P0222 Coevolution of exaggerated male and female genitalia in *Carabus (Ohomopterus)* beetle: a role for sex-concordant genes  
**Shota Nomura**
- P0223 Microsatellite based analysis reveals *Aedes aegypti* populations in of Saudi Arabia result from colonisation by both the ancestral African and global domestic forms  
**Abadi M. Mashlawi**
- P0224 Comparative cytogenetics of Zoraptera  
**Marek Jankásek**
- P0225 Patterns of endogenous non-retroviral RNA virus and its genomic context in the *Anopheles darlingi* genome  
**Margarita M. Correa**
- P0226 Diversity of *Bemisia tabaci* Gennadius and their secondary endosymbionts in the Philippines  
**Barbara Laviña Caoili**
- P0227 Identification of the pathogen infection trend in global honey bee colonies and its correlation with differential gene expression  
**Yeahji Jeong**
- P0228 Gene duplication and functional differentiation of seven alkaline phosphatase genes in the silkworm, *Bombyx mori*  
**Masakazu Teramachi**

## Poster 7

11:45 - 13:30



## Insect-Microbe Interactions

- P0229 Gut microbiota mediate phenols degradation in *Bactrocera minax* (Diptera: Tephritidae)  
**Shuai Cao**
- P0230 Microbiome of the biological control agent *Nesidiocoris tenuis* (Hemiptera: Miridae)  
**Tetsuya Adachi-Hagimori**
- P0231 What changes occur in the genomes of bacterial symbionts when they transition from plants to insects?  
**Pradeep Palanichamy**
- P0232 Begomovirus  $\beta$ C1 protein promotes drought tolerance in plants  
**Guanping Chen**

P0233 Requirement of the viral glycoprotein-encoding RNA for transmission of an emaravirus perilla mosaic virus by perilla rust mite (*Aculops thymi* Nalepa) (Acari: Eriophyidae)  
**Kenji Kubota**

P0234 Effects of MAPK Cascade-Mediated Jasmonic Acid Defense on Herbivorous Insects  
**Siwen Wu**

P0235 Relationship between the evolution of the symbiotic system with yeasts and the niche diversification in xylophagous stag beetles  
**Gaku Ueki**

P0236 Identification of the Japanese pear rust mite *Eriophyes chibaensis* (Acari: Eriophyidae) as a vector for pear chlorotic leaf spot-associated virus in Asian and European pears  
**Sawana Takeyama**

P0237 Jasmonate signaling regulates rice and brown planthopper interaction  
**Ran Li**

P0238 A bordered plant bug, *Physopelta gutta*, establishes an obligate gut symbiosis with environmentally-acquired *Paraburkholderia*  
**Kazutaka Takeshita**

P0239 FISH protocol for the detection of single viral DNA genomes (*LdMNPV*)  
**Irina Belousova**

P0240 Transmission Dynamics of Honeybee Associated Viruses in Flowers, Pollen and Honeybees (*Apis mellifera*) During the Pollination of Californian Almonds  
**Sara Herrejon**

P0241 Diurnal rhythmicity of salivary effector and osmoregulatory genes shapes aphid performance on wheat  
**Vamsi Nalam**

P0242 Why so sensitive? Changes in protein sensitivity in the endemic Hawaiian leafhopper (Hemiptera: Cicadellidae: *Nesophrosyne*) due to Climate Change  
**Miguel F Estrada Caballero**

P0243 Trojan Horse symbiont in an insect-microbe symbiosis  
**Kota Ishigami**

P0244 *Bifidobacterium* and lactic acid bacteria are abundant in hindgut microbiota of overwintering Japanese honey bees (*Apis cerana japonica*)  
**Akihiko Suzuki**

P0245 General Patterns of Microbiota in Lepidoptera: Effect of Phylogenesis and Guild  
**Kateřina Czajová**

P0246 The microbial ecology of important stored products insect pests in Europe and North America  
**Hannah E Quellhorst**

P0247 Entomovectoring in action: discovering the potential of lacewings as fungus carrier for coffee berry borer control  
**Jéssica Letícia Abreu Martins**

P0248 Differential gene expression in *Anasa tristis* in response to symbiont colonization but not phytopathogen infection  
**Sandra Yadira Mendiola**

P0249 Weeds and other plants species as a potential risk for virus yellows transmission in sugar beet  
**Svenja Baensch**

P0250 Localization and population dynamics of a phytopathogen moonlighting as a defensive insect symbiont  
**Shounak Jagdale**

P0251 Bacterial and fungal community structure in *Culicoides* midge species reveals potential candidates for paratransgenic and biological disease control approaches  
**Amanda N Ramirez**

P0252 Development of microinjection method for *Wolbachia* transinfection in the leafhopper *Matsumuratettix hiroglyphicus* (Matsumura), vectors of sugarcane white leaf disease  
**Kamonrat Suwanchaisri**

P0253 Lipid metabolism associated with *Acetobacter* symbionts as adaptive systems against blue light toxicity in *Drosophila melanogaster*  
**Yuta Takada**

P0254 Gut bacterial diversity in the larval midgut of fall armyworm, *Spodoptera frugiperda* (J.E. Smith) (Lepidoptera: Noctuidae) in Eastern India  
**Tamoghna Saha**

P0255 Male-killing virus disrupts endocrine system of host males  
**Takumi Takamatsu**

P0256 Cell-Based Analysis of Male-Killing *Wolbachia* Effects on Its Host *Ostrinia scapularis* (Lepidoptera: Crambidae)  
**Takafumi N Sugimoto**

P0257 Microbial Dynamics and Developmental Niche Construction: Role of Symbiotic Microorganisms in Shaping the Ontogenetic Environment of Fruit Flies  
**Anna Evlanova**

P0258 Facultative symbiont *Serratia symbiotica* affects the feeding behavior and locomotion of its host aphid *Aphis fabae*  
**Alisa Hamidovic**

P0259 How aphid symbiont compromises the control efficiency of parasitic wasps?  
**Chen Luo**

P0260 Egg-cellent Microbes: Using Microbes to Trap the Small Hive Beetle Pest (*Aethina tumida*) by Affecting Beetle Attraction and Oviposition Choice  
**Yin Xun Tan**

P0261 Presentation Withdrawn

P0262 The tripartite symbiosis of termites, protists, and bacteria dates back to the last common ancestor with cockroaches  
**Naoya Maruoka**

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| <p>P0263 Intestinal commensal bacteria promote <i>Bactrocera dorsalis</i> larval development through vitamin B6 synthesis pathway<br/><b>Jian Gu</b></p> <p>P0264 Bacterial symbioses and heat protection in aphids: a partnership story<br/><b>Kévin Tougeron</b></p> <p>P0265 Parasitism by endoparasitoids alters the microbiome and body odours of caterpillar hosts, with important consequences for higher tropic levels<br/><b>Gabriele Gloder</b></p> <p>P0266 Virus as a symbiotic factor to facilitate the adaptation of a generalist herbivore through hijacking host cuticular proteins<br/><b>Xin An</b></p> | <p>P0267 The endosymbiont <i>Serratia symbiotica</i> improves aphid fitness by disrupting the predation strategy of ladybeetle larvae<br/><b>Zhengwu Wang</b></p> <p>P0268 The association between feeding ecology and gut symbionts of yellow crazy ant (Formicidae, <i>Anoplolepis</i>) in seminatural and urban areas<br/><b>Yuan-Hung Chen</b></p> <p>P0269 Relationships between fungal garden substrate and larval growth in a beetle-yeast cultivation mutualism<br/><b>Wataru Toki</b></p> |
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Sunday 25 Aug

Monday 26 Aug

Tuesday 27 Aug

Wednesday 28 Aug

Thursday 29 Aug

Friday 30 Aug