

# Tuesday 27 August

## Main Hall

8:15 - 9:15



### Plenary Lecture 2

8:15 **PL2** A New Era of Insect Diversity Research  
**Fredrik Ronquist**

Department of Bioinformatics and Genetics, Swedish Museum of Natural History (Sweden) / Department of Zoology, Stockholm University (Sweden)

**Introducer:** Yoshihisa Abe (Kyushu University)

## RoomA

### Symposium 14-6

9:45 - 11:45



### Tackling destructive forest pests: sharing lessons for the future

**Chair:** Daegan Inward (Forest Research)

9:45 **14-6-01** Insect pests of plantation forests in sub-Saharan Africa: Challenges and prospects for pest surveillance and management  
**Brett Hurley**

10:00 **14-6-02** Fluctuating Temperatures as a Predictor of Eastern Spruce Budworm Outbreaks  
**Emily Black**

10:15 **14-6-03** Laurel wilt: an ambrosia beetle transmitted disease impacting avocados  
**Daniel Carrillo**

10:30 **14-6-04** Multinational investigations into the long-distance spread of a tree-killing bark beetle and the susceptibility of a novel host tree  
**Daegan Inward**

10:45 **14-6-05** Ecological Self-Control Technology for *Anoplophora glabripennis* Disasters  
**Youqing Luo**

11:00 **14-6-06** Trapping *Hylobius abietis* – an alternative to the use of insecticides  
**Michael Gunter Müller**

11:15 **14-6-07** Using pheromone and smart traps to control *Lymantria dispar* in European countries  
**Paraskevi Agrafioti**

11:30 **14-6-08** How taxonomy of invertebrates can be supported by AI and automation with bark beetles as an example  
**Christian Pylatiuk**

### Symposium 14-7

13:30 - 18:15



### IPM of Invasive Insect Pests in the Specialty Crops under the Changing Climate Patterns

**Chair:** Muhammad Haseeb (Florida Agricultural and Mechanical University), Youichi Kobori (Japan International Research Center for Agricultural Sciences), Jawwad Qureshi (University of Florida), Lambert Kanga (Florida A&M University)

13:30 **14-7-01** Method for artificial inducing egg-laying in tomato leafminer, *Tuta absoluta* (Meyrick) (Lepidoptera: Gelechiidae)  
**Gaku Akiduki**

13:45 **14-7-02** Lesser Clover Leaf Weevil (*Hypera nigrirostris* Fab.) in Red Clover Seed Production: Scouting, Economic Thresholds, and Sequential Sampling Plans  
**Jeremy Irvine**

14:00 **14-7-03** Progress toward biological control of *Drosophila suzukii*, a keystone invasive pest of small and stone fruits in the United States  
**Ashfaq Sial**

14:15 **14-7-04** Can an Integrated Pest Management Approach assist the control of Varroa mite in Australia?  
**Mary Whitehouse**

14:30 **14-7-05** Insecticide Resistance in the Small Hive Beetle, *Aethina tumida* Murray (Coleoptera: Nitidulidae) in Honeybee Colonies, Mechanisms and Management of Resistance  
**Lambert Kanga**

14:45 **14-7-06** Impact of temperature on development and reproduction of Asian Citrus Psyllid, *Diaphorina citri*  
**Kuwayama Jawwad Qureshi**

Sunday 25 Aug  
Monday 26 Aug  
Tuesday 27 Aug  
Wednesday 28 Aug  
Thursday 29 Aug  
Friday 30 Aug

15:00	<b>14-7-07</b> Ambrosia beetle attraction to cyclone-stressed fruit trees in Aotearoa, New Zealand. <b>Bethan Shaw</b>	16:45	<b>14-7-11</b> Beetle Herding: Optimizing the Biological Control of <i>Dioscorea bulbifera</i> <b>Jessica Griesheimer</b>
15:15	<b>14-7-08</b> How to best use Nichino America pesticides in a changing climate utilizing IPM principles. <b>Scott Croxton</b>	17:00	<b>14-7-12</b> Interspecific transfer of <i>Wolbachia</i> for control of invasive pest fall armyworm, <i>Spodoptera frugiperda</i> <b>Masashi Nomura</b>
15:30	<b>Coffee Break</b>	17:15	<b>14-7-13</b> Presentation Withdrawn
16:15	<b>14-7-09</b> Simple pesticide susceptibility monitoring methods for fall armyworm, <i>Spodoptera frugiperda</i> , for international information-sharing. <b>Youichi Kobori</b>	17:30	<b>14-7-14</b> Developing IPM tools for Invasive Brown Marmorated Stink Bug, <i>Halyomorpha halys</i> , in California Almonds <b>Jhalendra Rijal</b>
16:30	<b>14-7-10</b> Integrated Pest Management of the Invasive Red Palm Weevil [ <i>Rhynchophorus ferrugineus</i> (Olivier)]: Detection, Monitoring, and Control on Coconut in the Philippines <b>Divina M. Amalin</b>	17:45	<b>14-7-15</b> Side Effects Evaluation of Pesticides against the Natural Enemies of the Fall Armyworm <b>Namphueng Chomphukhiao</b>
		18:00	<b>14-7-16</b> Training Minority Leaders to Manage Invasive Insect Pests in the Specialty Crops in Florida and the Caribbean Pathways <b>Muhammad Haseeb</b>

Annex Hall1

Symposium 14-8

9:45 - 11:45



Cutting-edge pest control techniques developed using ultrasound and semiconductor laser light

Chair: Ryo Nakano (NARO), Mika Murata (Institute for Plant Protection, NARO), Masatoshi Hori (Tohoku University)

9:45	<b>14-8-01</b> Ultrasonic pest control mimicking bat-moth interactions <b>Ryo Nakano</b>	10:45	<b>14-8-05</b> Real-Time Three-dimensional Tracking of Flying Moths Using Stereo Image Processing <b>Ryo Sugiura</b>
10:00	<b>14-8-02</b> Studying auditory-induced escape maneuvers and flight activity of pest moths to create novel bio-inspired pest-control solutions in greenhouses. <b>Dayo Jansen</b>	11:00	<b>14-8-06</b> Comparison of Neural Radiance Fields (NeRF)-based and stereoscopic image-based 3D point clouds in various wingbeat postures <b>Koji Nishisue</b>
10:15	<b>14-8-03</b> Shoot down flying <i>Spodoptera litura</i> with blue laser beam <b>Kazuhisa Yamamoto</b>	11:15	<b>14-8-07</b> Wavelength-specific effects of blue LDs and LEDs on the survival of small-sized insect pests <b>Chisato Kobayashi</b>
10:30	<b>14-8-04</b> Using laser shooting to damage flying insects and its effect on insect behavior <b>Kazuki Shibuya</b>	11:30	<b>14-8-08</b> Intracellular mechanisms of blue light-induced lethal effects in insects <b>Yuichi Aoki</b>

Symposium 14-9

13:30 - 18:15



Life table theory and computer simulation for pest management programs

Chair: Hsin Chi (Shandong Agricultural University), Tetsuo Gotoh (Ryutsu Keizai University), Remzi Atlihan (Van Yuzuncu Yil University), Ali Guncan (Ordu University), Mehmet Salih Özgökçe (Van Yüzüncü Yil University)

13:30	<b>14-9-01</b> Integrating two-sex life table, predation/ consumption, and computer simulation for demographic research, biological control, and pest management <b>Hsin Chi</b>	14:00	<b>14-9-03</b> Effect of temperature on the interaction between <i>Spodoptera frugiperda</i> (Lepidoptera) and the polydnavirus-carrying parasitoid wasp <i>Hyposoter didymator</i> (Hymenoptera) <b>Shannon Alary</b>
13:45	<b>14-9-02</b> <i>Trichoderma harzianum</i> helps potato plants deal with beet armyworm <b>Mehmet Salih Ozgokce</b>		

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| <p>14:15 <b>14-9-04</b> Evaluating the cost-effectiveness of mass-rearing system of <i>Cadra cautella</i> based on the demographic characteristic and harvest theory<br/><b>Shu-Jen Tuan</b></p> <p>14:30 <b>14-9-05</b> Fitness cost and life table parameter differences in DDT resistant (91-R) and susceptible(91-C) strains of <i>Drosophila melanogaster</i><br/><b>Su Ryeo Park</b></p> <p>14:45 <b>14-9-06</b> Insecticide susceptibility and life table of <i>Diaphorina citri</i><br/><b>Shu-Mei Dai</b></p> <p>15:00 <b>14-9-07</b> Reproductive compatibility and field activity of members of the seedcorn maggot complex in Canada<br/><b>Jade Savage</b></p> <p>15:15 <b>14-9-08</b> Effect of Temperature on the Life Table Parameters of <i>Eotetranychus kankitus</i> (Acari: Tetranychidae) using Bootstrap-match Technique<br/><b>Mohammad Shaef Ullah</b></p> <p>15:30 <b>Coffee Break</b></p> <p>16:15 <b>14-9-09</b> Effect of the Four Major Turkish Hazelnut Cultivars on the Development, Life Table and Consumption Parameters of <i>Plodia interpunctella</i> (Hübner) under Laboratory Conditions<br/><b>Ali Guncan</b></p> | <p>16:30 <b>14-9-10</b> The impact of climate change on the potential distribution of <i>Kolla paulula</i>, a vector of <i>Xylella fastidiosa</i> in Taiwan<br/><b>Wan-Hsiu Yang</b></p> <p>16:45 <b>14-9-11</b> Comparative demographics, population projections and egg maturation patterns of four eupelmid egg parasitoids on the factitious host <i>Antheraea pernyi</i><br/><b>Yong-Ming Chen</b></p> <p>17:00 <b>14-9-12</b> Temperature dependent development and survival rates of <i>Leptocoris tagalicus</i><br/><b>Syed Rizvi</b></p> <p>17:15 <b>14-9-13</b> Performance and predatory potential of predators of <i>Thrips parvispinus</i> (Karny) in chilli<br/><b>Richa Varshney</b></p> <p>17:30 <b>14-9-14</b> Development of an efficient rearing method for <i>Tuta absoluta</i> (Lepidoptera: Gelechiidae) using artificial diets<br/><b>Shuhe Adachi-Fukunaga</b></p> <p>17:45 <b>14-9-15</b> Chlorantraniliprole and cyantraniliprole toxicity to the freshwater standard surrogate species <i>Daphnia magna</i> and a native daphnid <i>Simocephalus vetulus</i><br/><b>Stephanie Mariko Eckard</b></p> <p>18:00 <b>14-9-16</b> A theoretical study on contribution of sterile females on control efficiency of sterile insect technique<br/><b>Yusuke Ikegawa</b></p> |
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## Annex Hall2

## Symposium 7-6

9:45 - 11:45



## Basic and applied studies of insect movement

Chair: Mark Kenneth Asplen (Metropolitan State University)

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| <p>9:45 <b>7-6-01</b> Dispersal by small insects: why and how should we study it?<br/><b>Mark Kenneth Asplen</b></p> <p>10:00 <b>7-6-02</b> Wind-assisted high altitude dispersal of mosquitoes and other insects in East Africa<br/><b>Harrysone Etemesi Atieli</b></p> <p>10:15 <b>7-6-03</b> Pyrophilic ground beetle dispersal in a fire-prone island archipelago<br/><b>Aaron J. Bell</b></p> <p>10:30 <b>7-6-04</b> Influence of habitat configuration on breeding-season female monarch butterfly (<i>Danaus plexippus</i>) movement and space use in north central USA agroecosystem landscapes<br/><b>Kelsey Elizabeth Fisher</b></p> | <p>10:45 <b>7-6-05</b> Jumping to New Heights: Target Distance Estimation Facilitates Successful Landing in a Jumping Katydid.<br/><b>Shannon Harrison</b></p> <p>11:00 <b>7-6-06</b> Recapture rate and age stage of <i>Pantala flavescens</i> adults in a citizen science project in Japan<br/><b>Tatsuro Konagaya</b></p> <p>11:15 <b>7-6-07</b> Passive dispersal and life history strategy of a wingless parasitoid wasp<br/><b>Toshiharu Mita</b></p> <p>11:30 <b>7-6-08</b> <i>Vanessa carye</i>: Butterfly in Flight, Secret of the Horizon – A Haiku of Migration and Mystery<br/><b>Amado Villalobos-Leiva</b></p> |
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## Symposium 14-10

13:30 - 18:15



## Development and application of baits for subterranean termite control in the last three decades

Chair: Nan-Yao Su (University of Florida), Chow-Yang Lee (University of California, Riverside), Thomas Chouvenc (University of Florida)

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| <p>13:30 <b>14-10-01</b> An overview of the development of termite baits in the past three decades<br/><b>Nan-Yao Su</b></p> <p>13:45 <b>14-10-02</b> History and Success of the Sentricon® System from an R&amp;D and Commercial Perspective<br/><b>Garima Kakkar</b></p> <p>14:00 <b>14-10-03</b> Subterranean termites colony demography and biology and their role in the successful implementation of baits<br/><b>Thomas Chouvenc</b></p> <p>14:15 <b>14-10-04</b> Casting termite tunnels to understand how termites approach and establish foraging in resources<br/><b>Mark Janowiecki</b></p> <p>14:30 <b>14-10-05</b> The potential of 20-hydroxyecdysone to accelerate termite baiting programs<br/><b>Sang-Bin Lee</b></p> <p>14:45 <b>14-10-06</b> Population management of subterranean termites of the genus <i>Reticulitermes</i> (Blattodea: Rhinotermitidae) in urban areas of Spain<br/><b>David Hernández-Teixidor</b></p> <p>15:00 <b>14-10-07</b> Sentricon® Project, Chatsworth, California, USA: performance and lessons learned.<br/>Presenter: Vernard Lewis<br/><b>Vernard Richard Lewis</b></p> <p>15:15 <b>14-10-08</b> The New Orleans French Quarter after Operation Full Stop: Where are we Today?<br/><b>Carrie Cottone</b></p> | <p>15:30 <b>Coffee Break</b></p> <p>16:15 <b>14-10-09</b> A brief history of chlorfluazuron termite bait in Asia-Pacific<br/><b>Partho Pratim Dhang</b></p> <p>16:30 <b>14-10-10</b> 25-year of termite baiting and the change of the landscape of pest management industry in Southeast Asia<br/><b>Chow-Yang Lee</b></p> <p>16:45 <b>14-10-11</b> Challenges in baiting to manage fungus-growing termite colonies<br/><b>Hou-Feng Li</b></p> <p>17:00 <b>14-10-12</b> Development of termite baiting in Australia and the evolving market.<br/><b>Donald Ewart</b></p> <p>17:15 <b>14-10-13</b> Discovery of an underground chamber to protect kings and queens during winter in temperate termites<br/><b>Mamoru Takata</b></p> <p>17:30 <b>14-10-14</b> Exploring the gut microbiome of <i>Cryptotermes brevis</i>: adaptive changes to diet and life stage disparity<br/><b>Will Haigh</b></p> <p>17:45 <b>14-10-15</b> Molecular basis of driving social immunity in termites<br/><b>Qiuying Huang</b></p> <p>18:00 <b>14-10-16</b> Is there a convergence in the molecular mechanisms involved in subsocial behavior in cockroaches?<br/><b>Juliette berger</b></p> |
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## Room C-1

## Symposium 7-7

9:45 - 11:45



## Novel Interspecific Relationships Mediated by Trace Chemicals

Chair: Shiori Kinto (Kyoto University)

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| <p>9:45 <b>7-7-01</b> Tiny mites avoid caterpillar traces to prevent incidental non-cascading predation<br/><b>Shiori Kinto</b></p> <p>10:15 <b>7-7-02</b> Footprints speak louder than words: Avoiding ant encounters based on chemical traces<br/><b>Toshiharu Akino</b></p> <p>10:30 <b>7-7-03</b> Avoidance of ant traces by agriculture mites<br/><b>Shuichi Yano</b></p> <p>10:45 <b>7-7-04</b> Presentation Withdrawn</p> | <p>11:00 <b>7-7-05</b> Odour marks at food sources and interactions between native and introduced bees<br/><b>Rosalyn Gloag</b></p> <p>11:15 <b>7-7-06</b> Olfactory-driven Predatory Strategies Propel <i>Spodoptera frugiperda</i>'s Triumph in Ecological Niche Competition Among Indigenous Pests<br/><b>Bin Yang</b></p> <p>11:30 <b>7-7-07</b> Genetics, behavior, chemical recognition and gut microbiota of the globally invasive ant <i>Pheidole megacephala</i> in Taiwan<br/><b>Yu-Cheng Chiu</b></p> |
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Sunday 25 Aug

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Friday 30 Aug

## Symposium 7-8

13:30 - 18:15



## Ecology, evolution and biodiversity of gall-inducing insects

Chair: Ayman Khamis Elsayed (Saga University), Man-Miao Yang (National Chung Hsing University)

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| 13:30 | <b>7-8-01</b> Diversity and ecology of gall midges: Shedding light on “shining dark taxa”<br><b>Makoto Tokuda</b>   | 16:30 | <b>7-8-09</b> Ecology and evolution of galling tephritid flies in the genus <i>Aciurina</i><br><b>Ellen O Martinson</b>   |
| 14:00 | <b>7-8-02</b> <i>Contarinia</i> -Brassicaceae interactions: A tale of two gall midges<br><b>Boyd A Mori</b>   | 16:45 | <b>7-8-10</b> <i>Tamalia</i> aphid gall-inducers and inquilines: characterizing genomic diversity as part of the California Conservation Genomics Project<br><b>Donald G Miller</b>                         |
| 14:15 | <b>7-8-03</b> Recent divergence of <i>Neolitsea</i> -associated <i>Pseudosphondylia</i> gall midges (Diptera: Cecidomyiidae)<br><b>Sheng-Feng Lin</b>             | 17:00 | <b>7-8-11</b> Evolution and diversity of Adelgidae<br><b>Nathan Havill</b>  |
| 14:30 | <b>7-8-04</b> Gall Morphology, Host Associations, and Complex Life Cycle Strategies in the Old World Cecidomyiid Genus <i>Daphnephila</i><br><b>Man-Miao Yang</b> | 17:15 | <b>7-8-12</b> Genomic analyses reconstruct demographic history and reveal coadaptations in the pollinating fig wasps <i>Wiebesia</i> spp, pollinators of <i>Ficus pumila</i><br><b>Selina Cai-ling Wang</b> |
| 14:45 | <b>7-8-05</b> Gall midges (Diptera: Cecidomyiidae) associated with angiosperm flowers and flower buds in Japan<br><b>Ayman Khamis Elsayed</b>                     | 17:30 | <b>7-8-13</b> Artificial Selection of Plants Promotes Temporal Reproductive Isolation in Insect Populations: A Test Case Using the Blueberry Stem Gall Wasp<br><b>Glen Ray Hood</b>                         |
| 15:00 | <b>7-8-06</b> Gall midges (Diptera: Cecidomyiidae) associated with flower buds of <i>Artemisia</i> in Japan<br><b>Yoshifumi So</b>                                | 17:45 | <b>7-8-14</b> Comparative omics analysis of the venom gland of the sexual and agamic generations of the oak rough bulletgall wasp <i>Disholcaspis quercusmamma</i><br><b>Antoine Guiguet</b>                |
| 15:15 | <b>7-8-07</b> Study of an Undescribed Stem Gall on Mugwort, <i>Artemisia vulgaris</i> in Eastern North America<br><b>Carol C. Mapes</b>                           | 18:00 | <b>7-8-15</b> Modelling ecological links of rose gall wasps (Hymenoptera: Diplolepididae) using phylogenomic data<br><b>Miles Zhang</b>   |
| 15:30 | <b>Coffee Break</b>   |       |   |
| 16:15 | <b>7-8-08</b> Did Gall-Forming Fergusoninid Flies Coevolve With Their Myrtaceous Host Plants?<br><b>David Keith Yeates</b>  |       |   |

## Room C-2

## Symposium 7-9

9:45 - 11:45



## ad hoc session

Chair: Varpu Pärssinen (University of Gothenburg), Hidemori Yazaki (Tokyo Metropolitan University)

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|-------|--|-------|---|
| 9:45  | <b>7-9-01</b> Diversity of molecular mechanisms of sex determination in moths and butterflies<br><b>Frantisek Marec</b>  | 10:45 | <b>7-9-05</b> Evolution of asexual termites<br><b>Toshihisa Yashiro</b>   |
| 10:00 | <b>7-9-02</b> Paternal genome elimination, monogenic reproduction, and the evolutionary genetics of atypical fly sex chromosomes<br><b>Thomas Hitchcock</b>                          | 11:00 | <b>7-9-06</b> Female-female competition in giant water bugs<br><b>Shin-ya Ohba</b>  |
| 10:15 | <b>7-9-03</b> Evolution of sex-limited mimicry through pre-adaptive male wing melanism in tussock moths with sexually different daily flight rhythm<br><b>Hidemori Yazaki</b>        | 11:15 | <b>7-9-07</b> Seasonal variation in the sexual selection acting on females of the bushcricket <i>Kawanaphila nartee</i><br><b>Varpu Pärssinen</b> |
| 10:30 | <b>7-9-04</b> Population genomics of sexually antagonistic co-evolution and the consequences for mating interactions in <i>Drosophila melanogaster</i> .<br><b>R. Axel W. Wiberg</b> | 11:30 | <b>7-9-08</b> Reduced fitness in losers of leg-biting male combat in giant mealworm <i>Zophobas atratus</i><br><b>Teruhisa Matsuura</b>           |



## Symposium 7-10

13:30 - 18:15



## Nutritional ecology: recent advances, and future challenges

Chair: Enikő Csata (University of Regensburg), Eran Levin (Tel-Aviv University), Sofia Bouchebti (The University of Arizona)

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| 13:30 | <b>7-10-01</b> Are you what you eat? How diet impacts blood nutrients.<br><b>Sheena Cotter</b>  | 16:30 | <b>7-10-09</b> Microbiota influence on mosquito larvae metabolism mediate glyphosate toxicity<br><b>Pierre Antonelli</b>   |
| 14:00 | <b>7-10-02</b> The remoulding of dietary effects on the fecundity / longevity trade-off in a termite<br><b>Veronika Rau</b>   | 16:45 | <b>7-10-10</b> Thoracic crop formation during claustral colony foundation in <i>Lasius japonicus</i> queens<br><b>Satoshi Miyazaki</b>   |
| 14:15 | <b>7-10-03</b> Does one diet feed them all?' Protein-to-carbohydrate ratios that extend lifespan are shared among related insect species<br><b>Juliano Morimoto</b> | 17:00 | <b>7-10-11</b> Macroevolution of the ant feeding system; Insights from micro-CT data and 3D-reconstructions<br><b>Adrian Richter</b>   |
| 14:30 | <b>7-10-04</b> Eat for the heat: A lipid-depleted diet inhibits survival under heat stress<br><b>Ana Marquez-Rosado</b>   | 17:15 | <b>7-10-12</b> An overview of ant stinger morphological evolution and its influence on adaptive dynamics and dietary habits<br><b>Alexandre Casadei Ferreira</b>                                     |
| 14:45 | <b>7-10-05</b> Buzzing Resilience: Unraveling Hornet Adaptations to High-Ethanol Diets<br><b>Eran Levin</b>   | 17:30 | <b>7-10-13</b> Effects of developmental environment on the wing interference patterns in <i>Drosophila melanogaster</i> .<br><b>Kazuo Takahashi</b>  |
| 15:00 | <b>7-10-06</b> Food from flowers: the nutritional ecology of wild bees<br><b>Sara Diana Leonhardt</b>   | 17:45 | <b>7-10-14</b> Networking nutrients: integrating nutrients into networks to investigate the drivers and structures of entomological interactions<br><b>Jordan Patrick Cuff</b>                       |
| 15:15 | <b>7-10-07</b> Sterol profiles of European wild bees<br><b>Pengjuan Zu</b>  | 18:00 | <b>7-10-15</b> Management of the Senegalese grasshopper at the landscape scale by merging an agent-based model of nutritional ecology and a population dynamics model<br><b>Esther Gnilane Diouf</b> |
| 15:30 | <b>Coffee Break</b>   |       |  |
| 16:15 | <b>7-10-08</b> Characterization of secretion systems mediating bacterial interactions in the bee gut<br><b>Samuel A. Acheampong</b>                                 |       |  |

## Room D

## Symposium 16-6

9:45 - 15:30



## Insect circadian clocks

Chair: David Dolezel (Biology Centre CAS), Elzbieta Pyza (Jagiellonian University), Sakiko Shiga (Osaka University)

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|-------|--|-------|---|
| 9:45  | <b>16-6-01</b> Insect circadian clock – functional analyses<br><b>David Dolezel</b>  | 11:15 | <b>16-6-06</b> Molecular mechanisms and origin of the circa'bi'dian rhythm in <i>Holotrichia parallela</i><br><b>Sakiko Shiga</b> |
| 10:15 | <b>16-6-02</b> Circadian rhythms in glial cells of the <i>Drosophila</i> brain and involvement of glia in ALS and other neurodegenerative diseases<br><b>Elzbieta Pyza</b> | 11:30 | <b>16-6-07</b> Multiple cues mediate self-organized social synchronization of circadian rhythms in honey bees<br><b>Guy Bloch</b> |
| 10:30 | <b>16-6-03</b> The role of the circadian clock in regulating insect seasonal biology<br><b>Joanna C Chiu</b>   | 11:45 | <b>Poster Session</b>   |
| 10:45 | <b>16-6-04</b> Compound eye dependent-photic entrainment mechanism of the circadian clock in crickets<br><b>Kenji Tomioka</b>  | 13:30 | <b>16-6-08</b> The genetic basis of a magic trait: the circalunar clock of <i>Clunio marinus</i><br><b>Alexander Jacobsen</b>     |
| 11:00 | <b>16-6-05</b> Role of the circadian clock in photoperiodic responses in high-latitude insects<br><b>Charlotte Helfrich-Förster</b>  | 13:45 | <b>16-6-09</b> Artificial light at night impairs the timing of cricket songs<br><b>Keren Levy</b>                                 |

14:00	<b>16-6-10</b> Circadian activity rhythms and fitness in <i>Drosophila melanogaster</i> Taishi Yoshii	14:45	<b>16-6-13</b> Diversity and Evolution of Circadian Clocks in Arthropods Vlastimil Smykal
14:15	<b>16-6-11</b> Geographical variation in locomotor activity rhythm and cycling of clock proteins in <i>Drosophila littoralis</i> Giulia Manoli	15:00	<b>16-6-14</b> RHODOPSIN 7 (RH7) is important for activity during darkness and facilitates adaptation to low light conditions in <i>Drosophila melanogaster</i> Pingkalai R. Senthilan
14:30	<b>16-6-12</b> In silico analysis of circadian clock proteins Enrico Bullo	15:15	<b>16-6-15</b> Circadian clocks in the brain-rectum axis regulate the rhythmic production of sex pheromones originating from rectal bacteria Xinlian li

## Symposium 16-7

16:15 - 18:15



## Emergence timing: from molecular, neurobiological and physiological mechanisms to evolutionary significance

Chair: Christian Wegener (Julius-Maximilians-Universität Würzburg), Sheeba Vasu (Jawaharlal Nehru Centre for Advanced Scientific Research)

16:15	<b>16-7-01</b> The evolution of eclosion rhythms and what we can learn from studies under natural conditions Sheeba Vasu	17:15	<b>16-7-05</b> Zeitgeber for eclosion timing in the onion fly- How do the underground pupae compensate the depth dependent phase delay of Zeitgeber? Kazuhiro Tanaka
16:30	<b>16-7-02</b> How the circadian clock controls the timing of adult <i>Drosophila</i> emergence John Ewer	17:30	<b>16-7-06</b> Morphological analysis of circadian clock systems driving the underground eclosion rhythm in the onion fly, <i>Delia antiqua</i> Yoshitaka Hamanaka
16:45	<b>16-7-03</b> Neuronal circuitry underlying the circadian timing of eclosion in <i>Drosophila</i> Christian Wegener	17:45	<b>16-7-07</b> Emergence timing in solitary bees Katharina Beer
17:00	<b>16-7-04</b> Timing of Post-eclosion Behavior in <i>Drosophila</i> is Under Dual Hormonal Control Benjamin White	18:00	<b>16-7-08</b> Interrelation of circalunar, circadian and photoperiodic time keeping in the marine midge <i>Clunio</i> Jule Neumann

## Room E

## Symposium 16-8

9:45 - 11:45



## Extracellular RNAs and RNA-based intercellular communication in insects

Chair: Dulce Santos (KU Leuven)

9:45	<b>16-8-01</b> RNA transmission between honey bees and their microbiome Eyal Maori	11:00	<b>16-8-05</b> The microRNA profile of a specialist tick, <i>Rhipicephalus (Boophilus) microplus</i> , during active feeding Brenda Galvan
10:15	<b>16-8-02</b> Characterization of a novel asteroid family protein-coding gene, <i>PIN domain-containing protein</i> , found in <i>Spodoptera exigua</i> . Keisuke Nagamine	11:15	<b>16-8-06</b> Double-Stranded RNA in Exosomes: Potential Systemic RNA Interference Pathway in the Colorado Potato Beetle June-Sun Sunny Yoon
10:30	<b>16-8-03</b> Characterisation of extracellular vesicles in insect cells Iris Callewaert	11:30	<b>16-8-07</b> Extracellular RNAs contribute to cell-to-cell spread of the RNAi response in insects Dulce Santos
10:45	<b>16-8-04</b> Extracellular miR-274 in <i>Drosophila</i> hypoxia response Cheng-Ting Chien		

## Women in Entomology (WIE)

12:00 - 13:15



## WIE Luncheon Seminar

Chair: Chizu Sanjoba (The University of Tokyo)

12:00 **WIE-LS** Insect Collecting for Boys: Natural History and Gender in Japanese Popular Culture  
**Akihisa Setoguchi**  
 Kyoto University

## Symposium 16-9

13:30 - 15:30



## Insects and human brain disorders

Chair: Milena Damulewicz (Jagiellonian University)

13:30 **16-9-01** Effect of light pollution on Parkinson's disease development  
**Milena Damulewicz**

13:45 **16-9-02** Unraveling mechanisms of dopaminergic neurodegeneration in Parkinson's disease: insights from a *Drosophila* model  
**Emi Nagoshi**

14:00 **16-9-03** Flies sleep upside down  
**Adam Claridge-Chang**

14:15 **16-9-04** Utilizing *Drosophila* Models and MeDUsA for Deciphering Variants of Uncertain Significance  
**Atsushi Sugie**

14:30 **16-9-05** Cell to Cell Communication Mediates Glioblastoma Progression  
**Sergio Casas-Tintó**

14:45 **16-9-06** Lithium salts change insect behaviour and neuroendocrine system morphology - potential use of cockroaches as models in biomedical study.  
**Malgorzata Slocinska**

15:00 **16-9-07** TickTalk: A new tick salivary protein contributes to the Lyme disease agent infectivity  
**Xiaotian Tang**

15:15 **16-9-08** Tick Talk: A GWAS Investigation of Tick-Induced Paralysis in Western Canada  
**Justyna Kruczalak**

## Symposium 16-10

16:15 - 18:15



## Juvenile Hormone: From biosynthesis to action. A symposium in memory of Professor Stephen S. Tobe (1944-2020)

Chair: Angela B Lange (University of Toronto Mississauga), Ian Orchard (University of Toronto Mississauga)

16:15 **16-10-01** The inspiring journey of Steve to unveil the *corpora allata* secrets  
**Fernando Gabriel Noriega**

16:45 **16-10-02** The methionine cycle in the *corpus allatum* is involved in juvenile hormone biosynthesis in *Drosophila melanogaster*  
**Yosuke Mizuno**

17:00 **16-10-03** Presentation Withdrawn

17:15 **16-10-04** The role of the circadian clock in regulating the seasonal responses in the Northern house mosquito, *Culex pipiens*  
**Megan E. Meuti**

17:30 **16-10-05** All we want to know about the JH receptor (but are afraid to ask?)  
**Marek Jindra**

17:45 **16-10-06** Reduced JH signaling results in *corpora allata* hypertrophy and hyperplasia in mosquitoes  
**Marcela Nouzová**

18:00 **16-10-07** JH signaling and reproductive physiology in the classical insect model, *Rhodnius prolixus*.  
**Ian Orchard**



## Room F

## Symposium 20-4

9:45 - 11:45



## Manga, Comics, and Games as tools for Entomological Engagement!

Chair: Carly M Tribull (Farmingdale State College (State University of New York))

- |       |   |       |   |
|-------|---|-------|---|
| 9:45  | <b>20-4-01</b> Crafting entomological education comics - another tool in your outreach toolbox!<br><b>Carly M Tribull</b>                           | 10:45 | <b>20-4-04</b> Bugging Out With Bugscope<br><b>Catherine Wallace</b>  |
| 10:15 | <b>20-4-02</b> Illustration of the complex life cycle of cynipid gall wasps to enable better understanding for non-scientists<br><b>Tatsuya Ide</b> | 11:00 | <b>20-4-05</b> Outreach and education with insects<br><b>Francisca Sconce</b>   |
| 10:30 | <b>20-4-03</b> Integrating art and science to promote insect pollinators to a new generation of urban field naturalists<br><b>Dieter Hochuli</b>    | 11:15 | <b>20-4-06</b> Insect outreach: Engaging students and the community through service learning courses<br><b>Kelly Carruthers</b>                     |
|       |   | 11:30 | <b>20-4-07</b> Development and Implementation of the Massive Open Online Course (MOOC): Bugs 101, Insect-Human Interactions.<br><b>Maya Evenden</b> |

## Symposium 15-3

13:30 - 18:15



## New developments in controlling insect pests with insecticidal proteins

Chair: Mark E. Nelson (Corteva Agriscience), William Moar (Bayer Crop Science)

- |       |   |       |  |
|-------|---|-------|--|
| 13:30 | <b>15-3-01</b> 25 years of successful proactive resistance management in Australia<br><b>Kristen Knight</b>   | 15:30 | <b>Coffee Break</b>  |
| 13:45 | <b>15-3-02</b> Controlling Corn Insect Pests in Indonesia with Bt Crops: The Importance of IRM<br><b>Y. Andi Trisyono</b>   | 16:15 | <b>15-3-09</b> New insecticidal trait protein for the control of Maize pests<br><b>Matt Bramlett</b>   |
| 14:00 | <b>15-3-03</b> Challenges and status of Bt resistance in corn earworm, <i>Helicoverpa zea</i> in the U.S.<br><b>Fei Yang</b>  | 16:30 | <b>15-3-10</b> Paenibacillus spp. pesticidal proteins effective for controlling Lepidoptera insect pests<br><b>Todd Ciche</b>  |
| 14:15 | <b>15-3-04</b> European Corn Borer <i>Ostrinia nubilalis</i> Hubner (Lepidoptera: Crambidae) Resistance to Bt Toxins in Canada<br><b>Jocelyn Smith</b>                | 16:45 | <b>15-3-11</b> Plant Derived Insecticidal Proteins Protect Crop Plants<br><b>Jennifer Barry</b>  |
| 14:30 | <b>15-3-05</b> Common and distinct mechanisms of resistance to Vip3Aa in pests of transgenic corn<br><b>Juan Luis Jurat-Fuentes</b>                                   | 17:00 | <b>15-3-12</b> Novel insecticidal proteins for control of crop insect pests<br><b>Mark E. Nelson</b>   |
| 14:45 | <b>15-3-06</b> Downregulation of a transcription factor associated with resistance to Bt toxin Vip3Aa in the invasive fall armyworm<br><b>Minghui Jin</b>             | 17:15 | <b>15-3-13</b> Lipid-binding insecticidal proteins from <i>Pleurotus</i> mushrooms for controlling coleopteran pests<br><b>Kristina Sepčić</b>                                     |
| 15:00 | <b>15-3-07</b> Controlling cowpea pests with <i>Bacillus thuringiensis</i> proteins<br><b>Jose Maria Barrero</b>  | 17:30 | <b>15-3-14</b> HOSU Considerations in Developing Next Gen Insect Protection Crops<br><b>Yong Yin</b>   |
| 15:15 | <b>15-3-08</b> Advancing Sustainable Eucalyptus farms: A Comprehensive Approach to Managing Lepidopteran Pests through <i>Bt</i> Biotechnology.<br><b>Dror Avisar</b> | 17:45 | <b>15-3-15</b> Insect resistant eucalyptus expressing proteins from <i>Bacillus thuringiensis</i> : a risk assessment evaluation perspective.<br><b>Anselmo Azevedo dos Santos</b> |
|       |   | 18:00 | <b>15-3-16</b> Novel Biopesticides Derived from Biological Control Agents<br><b>Robert Calvert</b>   |

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## Symposium 2-2

9:45 - 11:45



## Recent Advances in Basic and Applied Studies on Wild Silkworms and Silk in the World

Chair: Jun Kobayashi (Yamaguchi University), Michal Zurovec (Biology Centre CAS)

- |       |  |       |  |
|-------|--|-------|--|
| 9:45  | <b>2-2-01</b> Tracing the evolution of silk from molecules to genes<br><b>Michal Zurovec</b>                         | 10:45 | <b>2-2-05</b> Structurally and mechanically robust silk fibers spun from silkworms and spiders regardless of reeling speed<br><b>Kenjiro Yazawa</b>  |
| 10:00 | <b>2-2-02</b> On the wild ancestor of Chinese oak silkworm <i>Antheraea pernyi</i><br><b>Yanqun Liu</b>              | 11:00 | <b>2-2-06</b> Mechanism Elucidation of Silk Dissolution: A Case Point of Hornet Wild Silk<br><b>Jerry Muganda Wanyonyi</b>   |
| 10:15 | <b>2-2-03</b> Breeding muga silkworms ( <i>Antheraea assamensis</i> ): Lesson learned<br><b>Kallare P Arun Kumar</b> | 11:15 | <b>2-2-07</b> Effects of Radioactive Cesium on Wildsilk Produced by Japanese oak silkworm, <i>Antheraea yamamai</i> --Insects in radioactively contaminated Fukushima forests--<br><b>Yusuke Yoshida</b> |
| 10:30 | <b>2-2-04</b> Artificially Reeled Gonometal Silk fibers<br><b>Everlyn Nguku</b>                                      | 11:30 | <b>2-2-08</b> Establishment and Industrial Application of Recombinant Baculovirus Expression System Using Eri Silkworm Pupae for Large-Scale Protein Production<br><b>Kenichi Maegawa</b>                |

## Symposium 15-4

13:30 - 18:00



## Realizing the potential of RNA biopesticides: what it takes to make RNAi commercial and durable

Chair: William Moar (Bayer Crop Science), Kenneth Narva (GreenLight Biosciences), Sergey Ivashuta (Bayer)

- |       |   |       |   |
|-------|---|-------|---|
| 13:30 | <b>15-4-01</b> Improving the efficacy of RNA-based insecticides using alternatively structured double-stranded RNAs<br><b>Steve Whyard</b>  | 15:15 | <b>15-4-08</b> Low-cost, scalable dsRNA manufacturing through microbial fermentation solves decade-long challenge and unlocks commercial potential of RNAi BioSolutions.<br><b>Steven Meyer</b> |
| 13:45 | <b>15-4-02</b> Improvement of RNAi efficiency by knockdown of RNAi-efficiency-related factors in lepidopteran pests<br><b>Yoshiaki Tanaka</b>   | 15:30 | <b>Coffee Break</b>   |
| 14:00 | <b>15-4-03</b> Assessment of the efficiency of virus-like particles (VLPs) for dsRNA delivery to the agricultural pest <i>Helicoverpa armigera</i><br><b>Luc Swevers</b>              | 16:15 | <b>15-4-09</b> Decoding resistance to insecticidal double stranded RNAs in <i>Leptinotarsa decemlineata</i><br><b>Swati Mishra</b>  |
| 14:15 | <b>15-4-04</b> RNA based insecticides - role of carriers towards making it a commercial reality<br><b>Neena Mitter</b>  | 16:30 | <b>15-4-10</b> Response of <i>Coccinella septempunctata</i> to species-specific dsRNAs designed against agricultural pest insects<br><b>Eileen Knorr</b>  |
| 14:30 | <b>15-4-05</b> The covert-infecting virus HhV in <i>Euschistus heros</i> (Hemiptera: Pentatomidae): From discovery to engineering as a VIGS vector<br><b>Éricmar Avila dos Santos</b> | 16:45 | <b>15-4-11</b> Improving delivery of dsRNA to <i>Euschistus heros</i> and off-target effects in <i>Melipona quadrifasciata</i><br><b>Daniel Estiven Quiroga Murcia</b>                          |
| 14:45 | <b>15-4-06</b> Protecting crops from lepidopteran insect pests using RNAi<br><b>Samanta Bolzan de Campos</b>  | 17:00 | <b>15-4-12</b> Mammalian Safety of RNA<br><b>Matias Attene Ramos</b>  |
| 15:00 | <b>15-4-07</b> Efficient production of dsRNA using <i>Corynebacterium glutamicum</i> for RNAi-based pesticides<br><b>Shuhei Hashiro</b>   | 17:15 | <b>15-4-13</b> Discovery, development, and commercialization of sprayable RNA-based biopesticides<br><b>Kenneth Narva</b>   |
|       |   | 17:30 | <b>15-4-14</b> Applications of Yeast RNAi Pesticide Technology for Insect Control<br><b>Molly Duman Scheel</b>  |

17:45 **15-4-15** Bugs and paradigms: dsRNA and the endless saga of managing Colorado potato beetles  
**Andrei Alyokhin**

## Room H

## Symposium 11-3

9:45 - 11:45



## Pollinators in agroecosystems - effective use and conservation-

**Chair:** Taro Maeda (NARO), Masahiro Mitsuahata (Arysta LifeScience Corporation), Tomoyuki Yokoi (University of Tsukuba)

- |       |   |       |  |
|-------|---|-------|--|
| 9:45  | <b>11-3-01</b> The current status and problems of commercialized alien and native species bumblebee for crop pollination<br><b>Masahiro Mitsuahata</b>    | 11:00 | <b>11-3-05</b> Quantifying pollination efficiency: a novel approach using video-recording and hierarchical modeling<br><b>Kae Natsume</b>                    |
| 10:15 | <b>11-3-02</b> Ecology of <i>Osmia orientalis</i> that nests in snail shells and attempts to use it as an agricultural pollinator<br><b>Ikuo Kandori</b>  | 11:15 | <b>11-3-06</b> Diversity, composition and related factors of flower-visiting insects of three fruit tree species in Japan<br><b>Shoko Nakamura</b>           |
| 10:30 | <b>11-3-03</b> Nocturnal moths contribute to one-fourth of buckwheat pollination services<br><b>Yuta Nagano</b>   | 11:30 | <b>11-3-07</b> The role of pollinators in Japanese agricultural lands and natural ecosystems and efforts towards their conservation<br><b>Tomoyuki Yokoi</b> |
| 10:45 | <b>11-3-04</b> The importance of honey bees in Japanese apricot production and facilitation of flower visitation by Brassica plants.<br><b>Taro Maeda</b> |       |  |

## Symposium 1-1

13:30 - 18:15



## Novel technologies and seeds toward innovative mite management

**Chair:** Masahiro Osakabe, Shoji Sonoda (Utsunomiya University)

- |       |   |       |   |
|-------|---|-------|---|
| 13:30 | <b>1-1-01</b> Are predatory mites more heat-sensitive than their spider mite prey?<br><b>Andreas Walzer</b>   | 15:30 | <b>Coffee Break</b>   |
| 14:00 | <b>1-1-02</b> Good compatibility between nighttime UV-B irradiation and phytoseiid mites<br><b>Masahiro Osakabe</b>   | 16:15 | <b>1-1-08</b> Effects of endosymbionts on spider mites<br><b>Xiao-Yue Hong</b>  |
| 14:15 | <b>1-1-03</b> Phytoseiid mites as the final piece of a stable IPM strategy based on UV-B irradiation system (UV method) in strawberry greenhouse<br><b>Masaya Tanaka</b>  | 16:30 | <b>1-1-09</b> Phytoseiid mites as biocontrol agents of key tomato pests<br><b>Georgios Broufas</b>  |
| 14:30 | <b>1-1-04</b> A multitrait approach towards the understanding of complex plant-spidermite interactions<br><b>Dagmar Voigt</b>   | 16:45 | <b>1-1-10</b> Unraveling direct and indirect control mechanisms of <i>P. ubiquitus</i> against the tomato russet mite and powdery mildew.<br><b>Lore M.R. Vervaeet</b>              |
| 14:45 | <b>1-1-05</b> Effects of plant morphological traits and abiotic conditions on the occurrence of phytoseiid mite, <i>Gynaeseius liturivorus</i> (Acari: Phytoseiidae)<br><b>Zenta Nakai</b>                          | 17:00 | <b>1-1-11</b> Phylogenomics resolves the higher-level phylogeny of eriophyoid mites (Acariformes: Eriophyoidea)<br><b>Xiao-Feng Xue</b>   |
| 15:00 | <b>1-1-06</b> Mitigating effects of alternative food for the predatory mite <i>Amblyseius andersoni</i> (Acari: Phytoseiidae) under high temperature and insecticide application scenario<br><b>Guillaume Serra</b> | 17:15 | <b>1-1-12</b> Independent origin and soft sweeps of multiple mutations confer rapid evolution of extreme resistance to cyetpyrafen in two-spotted spider mite<br><b>Shu-Jun Wei</b> |
| 15:15 | <b>1-1-07</b> Plant-mediated effects of beneficial soil microbes on herbivorous mites<br><b>Maria Pappas</b>  | 17:30 | <b>1-1-13</b> Management for suppressing the two-spotted spider mite using native phytoseiid mites by preserving undergrowth in Japanese apple orchards<br><b>Ken Funayama</b>      |

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17:45 **1-1-14** Conservation of predatory mites populations in fruit orchards and vineyards: a synopsis of research  
**Alberto Pozzebon**

18:00 **1-1-15** Molecular monitoring of commercialized *Neoseiulus californicus* (McGregor) for spider mite control in a Japanese pear greenhouse  
**Shoji Sonoda**

Room B-1

Symposium 18-3

9:45 - 11:45



ad hoc session

Chair: Kai Amino (The University of Tokyo), Takao K Suzuki (The University of Tokyo)

9:45 **18-3-01** Behavioural shifts drive complex evolution of lichen crypsis in butterfly dorsal wings  
**Takao K Suzuki**

10:45 **18-3-05** Biotic pressures and abiotic constraints shape elaborate traits in the evolution of Lepidoptera  
**Juliette J Rubin**

10:00 **18-3-02** The diversity of butterfly wing shapes in the Philippines through morphological analysis and island attributes  
**Karen Kohama**

11:00 **18-3-06** Quantitative analysis of mimetic traits in butterflies using deep learning: An attempt to imitate predator responses  
**Kai Amino**

10:15 **18-3-03** Quantitative analyses of geographic variation in butterfly wing patterns utilizing image recognition technology  
**Masaya Yago**

11:15 **18-3-07** How We 'Eye-identify' Beetles: Eye-Tracking Reveals Cognitive Differences Based on Expertise  
**Seunghyun Lee**

10:30 **18-3-04** Advances in research on the systematics and morphology of geometrid moths help re-evaluate their fossil record  
**Maria Heikkilä**

11:30 **18-3-08** Does ontogenetic colour change in bronze-orange citrus bugs (*Musgraveia sulciventris*) challenge the assumptions of the crypsis-aposematism spectrum?  
**Matthew William Bulbert**

Symposium 18-4

13:30 - 18:15



Phylogeny and Evolution of Beetles - Symposium celebrating 90th Birthday of John Francis Lawrence

Chair: Hiroyuki Yoshitomi (Ehime University), Adam Slipinski (CSIRO), Richard Leschen (Landcare Research), Takahiro Yoshida (Tokyo Metropolitan University)

13:30 **18-4-01** Celebrating Phylogeny and Evolution of Beetles by Commemorating the Birthday of Dr John F. Lawrence  
**Adam Slipinski**

15:15 **18-4-07** The road to hyperdiversity: evolutionary morphology in the early pselaphine lineages (Coleoptera: Staphylinidae: Pselaphinae)  
**Margarita Yavorskaya**

14:00 **18-4-02** John F. Lawrence: Six Decades of Impact on Phylogeny and Classification of Beetles (Coleoptera)  
**Margaret K Thayer**

15:30 **Coffee Break**

14:15 **18-4-03** Mesozoic beetles and their phylogenetic, biogeographic and paleoecological implications  
**Chenyang Cai**

16:15 **18-4-08** Phylogeny, evolution, and systematics of Histeroidea and Hydrophiloidea: where do we stand?  
**Martin Fikáček**

14:30 **18-4-04** The Early Evolution of the Coleoptera Revisited  
**Brendon E. Boudinot**

16:30 **18-4-09** Toward understanding the diversity of Scarabaeoidea (Coleoptera: Polyphaga)  
**Showtaro Kakizoe**

14:45 **18-4-05** Phylogeny and evolution of Scirtoidea  
**Hiroyuki Yoshitomi**

16:45 **18-4-10** Phylogenetic relationships among Dryopoidea beetles, with special reference to the phylogenetic position of Eubrianacinae and Cladotominae  
**Masakazu Hayashi**

15:00 **18-4-06** God is in the details: Recent advances in systematics of the rove beetle family Staphylinidae (Coleoptera)  
**Munetoshi Maruyama**

17:00 **18-4-11** Systematics, diversity and evolution of Coccinelloidea (Coleoptera: Cucujiformia). Where do we stand?  
**Emmanuel Arriaga-Varela**

- |       |  |       |  |
|-------|--|-------|--|
| 17:15 | <b>18-4-12</b> Nitiduloidea, Erotyloidea and Cucujoidea: The history and prospect of classification of a taxonomic dumping ground<br><b>Takahiro Yoshida</b> | 17:45 | <b>18-4-14</b> Branching Out: Exploring the Evolutionary Tree of Leaf Beetles (Chrysomelidae)<br><b>Yelena Pacheco</b> |
| 17:30 | <b>18-4-13</b> Phylogeny and evolution of the beetle superfamily Tenebrionoidea<br><b>Pat Bouchard</b>   | 18:00 | <b>18-4-15</b> Systematics, diversity and evolution of Australian cycad-associated weevils<br><b>Yun Hsiao</b>         |

## Room B-2

## Symposium 3-3

9:45 - 11:45



## Genetic improvement of biological control agents

**Chair:** Norihide Hinomoto (Kyoto University), Tomokazu Seko (National Agriculture and Food Research Organization)

- |       |   |       |   |
|-------|---|-------|---|
| 9:45  | <b>3-3-01</b> Extension of patch residence time of a biocontrol agent by selective breeding contributes to its early establishment and suppression of a pest population<br><b>Tomokazu Seko</b> | 11:00 | <b>3-3-05</b> Gene editing in the predatory bug <i>Orius strigicollis</i> , a biological control agent against thrips and small arthropods<br><b>Naoki Matsuda</b>                        |
| 10:15 | <b>3-3-02</b> Selective breeding of <i>Orius laevigatus</i> (Hemiptera: Anthocoridae) for better fitness feeding on astigmatid mites<br><b>Amador Rodríguez-Gómez</b>                           | 11:15 | <b>3-3-06</b> CRISPR-based genome editing as a tool to elucidate molecular mechanisms of pesticide resistance in phytoseiid mites used in biological control.<br><b>Antonio Mocchetti</b> |
| 10:30 | <b>3-3-03</b> Selection for cold tolerance in the biological control agent <i>Orius laevigatus</i> (Fieber) (Hemiptera: Anthocoridae)<br><b>Ana Belén Abelaira</b>                              | 11:30 | <b>3-3-07</b> Can natural enemies benefit from RNAi Technology? A case study on the predatory mite, <i>Neoseiulus californicus</i><br><b>Nourelidin Ghazy</b>                             |
| 10:45 | <b>3-3-04</b> High-quality genome of the zoophytophagous stink bug, <i>Nesidiocoris tenuis</i> , informs their food habit adaptation<br><b>Tomofumi Shibata</b>                                 |       |   |

## Symposium 3-4

13:30 - 18:15



## Recent advances in biology, ecology and application of egg parasitoids

**Chair:** Lian-Sheng Zang (Guizhou University), Nicolas Desneux (INRAE), Su Wang (Beijing Academy of Agriculture and Forestry Sciences)

- |       |   |       |   |
|-------|---|-------|---|
| 13:30 | <b>3-4-01</b> Strategies of releasing <i>Telenomus podisi</i> to control stink bugs inside Soybean-IPM<br><b>Adeney de Freitas Bueno</b>  | 15:00 | <b>3-4-06</b> Brown Marmorated Stink Bug ( <i>Halyomorpha halys</i> ) in Serbia, the end of the story or a new beginning?<br><b>Aleksandra Konjevic</b> |
| 14:00 | <b>3-4-02</b> Advances in biological control of rice stem borer with mix-releasing different <i>Trichogramma</i> species in China<br><b>Lian-Sheng Zang</b>   | 15:15 | <b>3-4-07</b> Fecundity evaluation of <i>Trissolcus japonicus</i> and <i>Trissolcus cultratus</i><br><b>Jin-Ping Zhang</b>                              |
| 14:15 | <b>3-4-03</b> Egg parasitoids of rice leafhoppers and planthoppers in East Asia: reassessment of their diversity, identification, and host associations<br><b>Serguei Triapitsyn</b>  | 15:30 | <b>Coffee Break</b>   |
| 14:30 | <b>3-4-04</b> Biocontrol of the rice black bug ( <i>Scotinophara lurida</i> ) by egg parasitoid wasps ( <i>Telenomus</i> sp.) and entomopathogenic fungi ( <i>Metarhizium</i> sp.) in organic paddy rice in Taiwan<br><b>Shu-Jen Tsai</b> | 16:15 | <b>3-4-08</b> Species composition and abundance of parasitoids of the fall armyworm <i>Spodoptera frugiperda</i> in Malawi<br><b>Thomas Dubois</b>      |
| 14:45 | <b>3-4-05</b> Diapause in <i>Trichogramma japonicum</i> and its application<br><b>Jun-Ce Tian</b>   | 16:30 | <b>3-4-09</b> Scale variation on <i>Spodoptera</i> egg masses suggests mixed use of dominant and cost-effective parasitoids<br><b>Tianhao Li</b>        |
|       |   | 16:45 | <b>3-4-10</b> A potential biological control agent for the fall armyworm: <i>Chelonus bifoveolatus</i><br><b>Liang-De Tang</b>                          |



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| 17:00 | <b>3-4-11</b> The effects of host size on parasitism by <i>Trichogrammatoidea cryptophlebiae</i> .<br><b>Emma Jane Stirk</b>   | 17:45 | <b>3-4-14</b> Root colonization by beneficial soil microbes enhances indirect plant defenses induced by insect egg deposition<br><b>Stefano Colazza</b> |
| 17:15 | <b>3-4-12</b> Effect of host density on the interspecific competition between egg parasitoids <i>Trichogramma pretiosum</i> and <i>Telenomus remus</i><br><b>Rabia Ali</b> | 18:00 | <b>3-4-15</b> Frequent intertrophic transmission of <i>Wolbachia</i> by parasitism but not predation<br><b>Zhichao Yan</b>                              |
| 17:30 | <b>3-4-13</b> Enhancing biocontrol efficacy of egg parasitoids through tailored sugars<br><b>Margot Wim J Geerinck</b>   |       |   |

Room I

Symposium 3-5

9:45 - 11:45



ad hoc session

Chair: Gregory S Wheeler (USDA-ARS), Ibtissem Ben Fekih (Gembloux Agro-Bio Tech, University of Liège)

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|-------|---|-------|--|
| 9:45  | <b>3-5-01</b> Effect of the plant-growth promoting rhizobacteria <i>Bacillus velezensis</i> and the two hypocrealean fungi of the genus <i>Metarhizium</i> on aphid-hoverfly interaction<br><b>Ibtissem Ben Fekih</b> | 10:45 | <b>3-5-05</b> Predation activity on sentinel egg masses in adjacent row crop and grassland fields<br><b>Hannah Stowe</b>   |
| 10:00 | <b>3-5-02</b> Exploring <i>Psyllaephagus</i> (Hymenoptera: Encyrtidae) host specificity towards invasive eucalypt psyllids (Hemiptera: Aphalaridae) in South Africa<br><b>Privilege Tungamirai Makunde</b>            | 11:00 | <b>3-5-06</b> Ladybird-Mediated Indirect Interactions of Banker Plant System on population maintenance and aphid control<br><b>Shu Li</b>  |
| 10:15 | <b>3-5-03</b> Overlapped host instar preferences by three sympatric parasitoids of <i>Cheilomenes sexmaculata</i> (Coleoptera: Coccinellidae)<br><b>Chung-Han Cheng</b>   | 11:15 | <b>3-5-07</b> "Creating beetle multitools", how do we expand the biological control that is provided by arable carabids to include weed regulation<br><b>Oskar Rennstam Rubbmark</b> |
| 10:30 | <b>3-5-04</b> Volatile organic compounds of wild strawberry: effect on the behaviour of <i>Drosophila suzukii</i> and its natural enemies.<br><b>Francesc Gómez Marco</b>   | 11:30 | <b>3-5-08</b> Biological control of the pyrogenic invasive grass cogongrass<br><b>Gregory S Wheeler</b>  |

Symposium 13-3

13:30 - 18:15



Advance in Management of Invasive Mosquitoes in Urban Areas

Chair: Antonios Michaelakis (Benaki Phytopathological Institute), Nikolaos Papadopoulos (University of Thessaly, Greece), George Tsiamis (University of Patras | UP · Department of Environmental Engineering)

- |       |  |       |   |
|-------|--|-------|---|
| 13:30 | <b>13-3-01</b> Oviposition strategies of container breeding mosquitoes: site searching behaviour of gravid <i>Aedes aegypti</i> .<br><b>Daniel Bray</b>                              | 14:30 | <b>13-3-05</b> <i>Aedes aegypti</i> in a warming world: Uncovering sublethal temperature effects on sterility for accurate risk mapping<br><b>Amirah Haziqah Binti Rashid</b> |
| 13:45 | <b>13-3-02</b> Studies on the gonotrophic cycle of <i>Aedes aegypti</i> (Diptera: Culicidae)<br><b>Wei-Ting Liu</b>  | 14:45 | <b>13-3-06</b> Interactions between the thermophilic mosquito species <i>Culex hortensis</i> and <i>Aedes albopictus</i> - an amplifying effect<br><b>Adwine Vanslebrouck</b> |
| 14:00 | <b>13-3-03</b> The seasonal thermal ecophysiology and egg metabolome point to different overwintering strategies in two invasive <i>Aedes</i> mosquito species<br><b>Ruth Müller</b> | 15:00 | <b>13-3-07</b> Ovariole-specific Yellow-g and Yellow-g2 proteins are required for insect egg chorion rigidity and integrity<br><b>Mi Young Noh</b>                            |
| 14:15 | <b>13-3-04</b> Two-Parameter Ovitrap Index for Dengue Vector Surveillance and Management<br><b>Wu-Chun Tu</b>  |       |   |

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|-------|---|-------|--|
| 15:15 | <b>13-3-08</b> Differential impact of environmental yeasts on larval development and oviposition behavior of the Asian tiger mosquito <i>Aedes albopictus</i><br><b>Simon Malassigne</b>        | 17:00 | <b>13-3-12</b> Exploiting RNA Interference: An Innovative Approach to Suppress Chikungunya Virus Transmission in Mosquitoes through Oral Administration of dsRNA<br><b>Marco Brustolin</b>               |
| 15:30 | <b>Coffee Break</b>   | 17:15 | <b>13-3-13</b> Mosquito as a potential vector of Lyme disease.<br><b>Miriama Peklanska</b>   |
| 16:15 | <b>13-3-09</b> Global, asynchronous sweeps at multiple insecticide resistance genes in <i>Aedes</i> mosquitoes<br><b>Thomas Schmidt</b>   | 17:30 | <b>13-3-14</b> The genetic basis of host preference of two biotypes of the northern House mosquito <i>Culex pipiens</i><br><b>Rohan Menon</b>  |
| 16:30 | <b>13-3-10</b> Over-expression of cytochrome P450 monooxygenase genes in pyrethroid resistant <i>Aedes albopictus</i> population from northern part of West Bengal, India.<br><b>Prapti Das</b> | 17:45 | <b>13-3-15</b> Friend or foe: through vitellogenesis metabolism, a mosquito parasite shows mutualistic traits favoring the fate of the progeny that will be vertically infected.<br><b>Maxime Girard</b> |
| 16:45 | <b>13-3-11</b> Examining the role of lysine-acetylated proteins in the metabolic regulation of <i>Aedes aegypti</i> mosquitoes<br><b>Patricia Y. Scaraffia</b>                                  | 18:00 | <b>13-3-16</b> Perilous omen: First report of Southeast Asia mosquito, <i>Aedes laniger</i> (Wiedemann, 1820) (Diptera: Culicidae) in Jeju Island, Republic of Korea<br><b>Woo Jun Bang</b>              |

## Room J

## Symposium 13-4

9:45 - 11:45

Biology and management of Container-inhabiting *Aedes* mosquitoes

**Chair:** Rui-De Xue (Anastasia Mosquito Control District), Tongyan Zhao (Institute of Microbiology and Epidemiology, AMMS)

- |       |  |       |   |
|-------|--|-------|---|
| 9:45  | <b>13-4-01</b> Exploring the efficacy of In2Care mosquito traps in <i>Aedes aegypti</i> control<br><b>Estelle Martin</b>   | 10:45 | <b>13-4-05</b> Improving the sterile insect technique for <i>Aedes</i> mosquito vectors early in the season by using acclimation to make males more cold hardy.<br><b>Daniel A Hahn</b>                   |
| 10:00 | <b>13-4-02</b> Nutritional stress compromises mosquito fitness and antiviral immunity, while enhancing dengue virus infection susceptibility<br><b>Jiayue Yan</b>      | 11:00 | <b>13-4-06</b> Urban adaptation and association with humans by mosquitoes impact egg thermal and dehydration tolerance<br><b>Souvik Chakraborty</b>   |
| 10:15 | <b>13-4-03</b> Population dynamics of <i>Aedes aegypti</i> and <i>Aedes albopictus</i> and control efforts at St. Augustine, Northeastern Florida<br><b>Rui-De Xue</b> | 11:15 | <b>13-4-07</b> Stimulatory effects on the reproduction of surviving <i>Aedes</i> mosquitoes and transgenerational immature development at deltamethrin-clothianidin posttreatment<br><b>Kok-Boon Neoh</b> |
| 10:30 | <b>13-4-04</b> Phenotypic and genotypic insecticide resistance against pyrethroids in the Hawaiian <i>Aedes</i> mosquitoes<br><b>Sangwoo Seok</b>                      | 11:30 | <b>13-4-08</b> Container mosquitoes in a California desert<br><b>Jennifer A Henke</b>   |

## Symposium 5-4

13:30 - 15:30



## ad hoc session

**Chair:** Shingo Hosoishi (Kyushu University), Michael J. W. Boyle (University of Hong Kong)

- |       |   |       |  |
|-------|---|-------|--|
| 13:30 | <b>5-4-01</b> Intact forest canopies can protect tropical insects from severe climate warming<br><b>Michael J. W. Boyle</b>                                     | 14:00 | <b>5-4-03</b> Negrophilous insects: Carrion as a key component for biodiversity processes<br><b>Claudia Corina Jordan-Fragstein</b>  |
| 13:45 | <b>5-4-02</b> Does fallow field biotopes function as habitats for aquatic insects similar to rice paddy fields and irrigational ponds?<br><b>Reiya Watanabe</b> | 14:15 | <b>5-4-04</b> Evaluating the impacts of the hala scale, <i>Thysanococcus pandani</i> Stickney on native hala forest regeneration in the Hawaiian Islands with biological control updates<br><b>Mason Russo</b> |

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|-------|---|-------|--|
| 14:30 | <b>5-4-05</b> Mapping leaf-litter beetle communities in lutruwita/Tasmania<br><b>Tessa Smith</b>  | 15:00 | <b>5-4-07</b> Lineage diversification and morphological evolution of the plant-ants <i>Crematogaster borneensis</i> -group in Southeast Asia (Hymenoptera: Formicidae)<br><b>Shingo Hosoishi</b> |
| 14:45 | <b>5-4-06</b> A Century of Unveiling Sri Lanka's Hidden Fauna: A Comprehensive Survey of Leafhopper Biodiversity (1903-2023)<br><b>Rajendramani Gnaneswaran</b> | 15:15 | <b>5-4-08</b> Population assessment and foraging ecology of the rare solitary bee <i>Megachile cypricola</i> on the island of Cyprus<br><b>Jordan Benrezkallah</b>                               |

**Symposium 5-5**

16:15 - 18:15



**Automated monitoring of insects**

**Chair:** David B Roy (UK Centre for Ecology & Hydrology), Toke Thomas Høye (Aarhus University), Eleanor Slade (Nanyang Technological University)

- |       |  |       |  |
|-------|--|-------|--|
| 16:15 | <b>5-5-01</b> Globally standardised species monitoring with insect camera traps and deep learning models<br><b>Toke Thomas Høye</b>                        | 17:15 | <b>5-5-05</b> Insect monitoring using the BioView System: automatic electronic traps aid conventional sampling in remote and natural areas of the Balearic Islands (Spain).<br><b>Miguel Ángel Miranda</b> |
| 16:30 | <b>5-5-02</b> Observation of flower-visiting insects in the Bonin Islands using a Raspberry Pi-based video recording system<br><b>Kazuya Takeda</b>        | 17:30 | <b>5-5-06</b> The use of new technologies for automated monitoring of insects: The AMI (Automated Monitoring of Insects) System<br><b>Jenna Louise Lawson</b>  |
| 16:45 | <b>5-5-03</b> Presentation Withdrawn   | 17:45 | <b>5-5-07</b> An audio-synthesis based approach for enhancing automatic detection of cicada songs in challenging chorus conditions<br><b>Ryotaro Okamoto</b>   |
| 17:00 | <b>5-5-04</b> Is deep learning effective for monitoring paddy field biodiversity? - Evaluating the learning costs and accuracy<br><b>Masayoshi Hiraiwa</b> | 18:00 | <b>5-5-08</b> From buzzes to bytes: A systematic review of automated bioacoustics models used to detect, classify, and monitor insects<br><b>Laura Figueroa</b>  |

Room K

**Symposium 5-6**

9:45 - 11:45



**Unifying our view of insect biodiversity for conservation**

**Chair:** Michael C. Orr (Stuttgart Naturkundemuseum), Akihiro Nakamura (Xishuangbanna Tropical Botanical Garden, Chinese Academy of Sciences)

- |       |   |       |   |
|-------|---|-------|---|
| 9:45  | <b>5-6-01</b> Challenges and opportunities in documenting global insect distribution<br><b>Michael C. Orr</b>   | 10:45 | <b>5-6-05</b> Evolutionary consequences of climate dynamics on lineage diversification in Mediterranean <i>Crematogaster</i> ants<br><b>Jody Helena Voges</b>   |
| 10:00 | <b>5-6-02</b> Phylogenomics illuminates evolutionary history and symbiont coevolution in the ant tribe Camponotini<br><b>Bonnie B Blaimer</b>                         | 11:00 | <b>5-6-06</b> Limited long-term invertebrate data warns of pantropical forest diversity loss resulting from changing climate<br><b>Adam Sharp</b>               |
| 10:15 | <b>5-6-03</b> Addressing the taxonomic and capacity impediment in tropical entomology<br><b>Eleanor Slade</b>   | 11:15 | <b>5-6-07</b> Lepidoptera Iranica, a completed inventory catalogue of the order in Iran used for investigating conservation gaps<br><b>Hossein Rajaei</b>       |
| 10:30 | <b>5-6-04</b> Bee species composition along elevation gradients in tropical montane forest: an implication to pollinator conservation in SEA<br><b>Natapot Warrit</b> | 11:30 | <b>5-6-08</b> Insect ecology and conservation in a changing world: the significance of biodiversity information in the Asian tropics<br><b>Akihiro Nakamura</b> |

## Symposium 8-3

13:30 - 18:15



## Frontiers in Research on the Molecular Basis underlying the Diversity of Insect Color Patterns

**Chair:** Ryo Futahashi (National Institute of Advanced Industrial Science and Technology (AIST)), Antonia Monteiro (National University of Singapore)

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|-------|---|-------|--|
| 13:30 | <b>8-3-01</b> Molecular mechanisms underlying sexual differentiation and UV reflection in dragonflies<br><b>Ryo Futahashi</b>   | 15:30 | <b>Coffee Break</b>  |
| 13:45 | <b>8-3-02</b> Molecular mechanisms underlying yellow color formation in dragonflies.<br><b>Genta Okude</b>  | 16:15 | <b>8-3-09</b> The developmental evolution of eyespots across the Lepidoptera<br><b>Antonia Monteiro</b>  |
| 14:00 | <b>8-3-03</b> The genomics of inter-sexual mimicry and female-limited polymorphisms in damselflies<br><b>Beatriz Willink</b>  | 16:30 | <b>8-3-10</b> A novel monocarboxylate transporter involved in 3-hydroxykynurenine transport for lepidopteran ommochrome coloration<br><b>Mizuko Osanai-Futahashi</b> |
| 14:15 | <b>8-3-04</b> Melanin pigmentation is regulated via dopamine competition with the sclerotin biosynthesis pathway in the cuticle of hemimetabolous insects.<br><b>Shintaro Inoue</b> | 16:45 | <b>8-3-11</b> Live Imaging Unshrouds Cytoskeletal Contributions in the Development of Structurally Colored Lepidopteran Scales<br><b>Kyle A DeMarr</b>               |
| 14:30 | <b>8-3-05</b> Pigmentation pathways underlying orange coloration in hemipteran insects<br><b>Aleksandar Popadić</b>   | 17:00 | <b>8-3-12</b> The functional genetic basis of wing color variation in <i>Heliconius</i> butterflies<br><b>Marcus R Kronforst</b>                                     |
| 14:45 | <b>8-3-06</b> The genomic landscape of metallic color variation in ground beetles<br><b>Yi-Ming Weng</b>  | 17:15 | <b>8-3-13</b> Mimicry supergene evolution via <i>cis</i> - and auto-regulatory divergence<br><b>Nicholas VanKuren</b>  |
| 15:00 | <b>8-3-07</b> Exploring the genetic basis of wing color pattern formation in ladybird beetles<br><b>Teruyuki Niimi</b>  | 17:30 | <b>8-3-14</b> Molecular mechanisms of Batesian mimicry and camouflage in <i>Papilio</i> butterflies<br><b>Shinya Komata</b>  |
| 15:15 | <b>8-3-08</b> <i>doublesex</i> regulates color pattern fluctuation in the harlequin ladybug <i>Harmonia axyridis</i><br><b>Soichi Ieki</b>  | 17:45 | <b>8-3-15</b> Sequence level mechanism underlying the evolution of the unique wing pigmentation pattern of <i>Drosophila guttifera</i><br><b>Takumi Karasawa</b>     |
|       |   | 18:00 | <b>8-3-16</b> Genetic modification of a <i>Hox</i> locus drives mimetic color pattern variation in a highly polymorphic bumble bee<br><b>Li Tian</b>                 |

Room 554

## Symposium 8-4

9:45 - 11:45



## Insects genome and transcriptome data analysis

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

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|-------|--|-------|---|
| 9:45  | <b>8-4-01</b> Opening remarks and general introduction<br><b>Kakeru Yokoi</b>  | 10:30 | <b>8-4-04</b> Comparative genomics of Aegypti group mosquitoes<br><b>Gen Morinaga</b>                                 |
| 10:00 | <b>8-4-02</b> Using Transcriptome Data to Understand Phasmatodea Metabolism and Detoxification<br><b>Matan Shelomi</b>                                 | 10:45 | <b>8-4-05</b> Comprehensive Annotation of Neuropeptides of <i>Gryllus bimaculatus</i><br><b>Yasukazu Nakamura</b>     |
| 10:15 | <b>8-4-03</b> Meta-analysis of publicly available RNA sequencing data of queens and workers in social hymenopterans and termites<br><b>Kouhei Toga</b> | 11:00 | <b>8-4-06</b> Functional annotation for insect transcriptomes<br><b>Takeya Kasukawa</b>                               |
|       |  | 11:15 | <b>8-4-07</b> pipeSnake: Platform for reproduceable and extensible open-source pipelines<br><b>Andrew Edward Webb</b> |

11:30 **8-4-08** Analyses of whole genome data for investigating the causal basis among insecticide resistance traits in crop pests  
**Brad Steven Coates**

Symposium 9-1

13:30 - 18:15



Comparative immune signaling between insects and other organisms: from recognition to effectors

Chair: Yonggyun Kim (Andong National University), Qisheng Song (University of Missouri), Kaijun LUO (Yun University)

13:30 **9-1-01** The evolution of family living affects immune responses to social isolation  
**Heiko Vogel**

15:30 **Coffee Break**

13:45 **9-1-02** The prostaglandin receptor (PGE<sub>2</sub>R) from the tobacco hornworm, *Manduca sexta*: functional expression, oenocytoids, and transcript induction by lipoteichoic acid.  
**Patricia Victoria Pietrantonio**

16:15 **9-1-09** Cellular and Humoral Immune Responses of *Bactrocera dorsalis* (Hendel) (Diptera: Tephritidae) to *Fopius arisanus* (Sonan) (Hymenoptera: Braconidae)  
**Rehemah Gwokyalya**

14:00 **9-1-03** Inhibition of EpOME biosynthesis potentiates the baculoviral virulence in lepidopteran insects  
**Yonggyun Kim**

16:30 **9-1-10** The antimicrobial activity and cytotoxicity effects of a novel antimicrobial peptide from the haemolymph of a blow fly, *Chrysomya megacephala* (Diptera: Calliphoridae)  
**Nurul Azmiera**

14:15 **9-1-04** Expression of Syntaxin in the insect vector and its interaction with a viral spike protein: Implications for a potential target in plant protection strategies  
**Karen Alviar**

16:45 **9-1-11** The lepidopteran model *Manduca sexta* forms embryonic haemocytes in a novel site of transient haematopoiesis  
**Yvette M. von Bredow**

14:30 **9-1-05** Physiological roles of neuropeptides and GPCRs during tick feeding  
**Donghun Kim**

17:00 **9-1-12** Site-specific degradation of ribosomal RNA induced in *Bombyx mori* cells during infection with *Autographa californica* multiple nucleopolyhedrovirus  
**Rina Hamajima**

14:45 **9-1-06** Diverse *PGRPs* coordinate to regulate *Arsenophonus* proliferation in planthoppers  
**Faliang Qin**

17:15 **9-1-13** Viral DNA from arbovirus in mosquitoes as an indicator of the infection history  
**Toshinori Sasaki**

15:00 **9-1-07** An endoparasitoid wasp larvae secreted arylphorin regulates the host immune responses  
**Zhiqiang Lu**

17:30 **9-1-14** The function of horizontally transferred arginine genes in the whitefly  
**Jisheng Hong**

15:15 **9-1-08** Characterization of Integrins of *Mythimna separata* in Cellular Immunity  
**Yuting Mao**

17:45 **9-1-15** Role of aphid MIF1 (Macrophage Migration Inhibitory Factor) on plant cell death  
**Killian Menuet**

18:00 **9-1-16** Understanding the genetic mechanisms of *Brassica napus* resistance to Cabbage Stem Flea Beetle  
**Rachel Wells**

Room 555

Symposium 4-2

9:45 - 11:45



ad hoc session

Chair: Gabriela Caballero Vidal (Sorbonne Université), Yuki Mitaka (Texas A & M University)

9:45 **4-2-01** Unveiling chemical communication in insect interactions: Sample preparation and analytical strategies  
**Eduardo P. Mateus**

10:00 **4-2-02** Chemical communication transmitting food information in the workers of the subterranean termite *Reticulitermes flavipes*  
**Yuki Mitaka**



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|-------|--|-------|--|
| 10:15 | <b>4-2-03</b> Contrasting responses to herbivore-induced volatiles in sympatric armyworm species<br><b>Ruth Carter</b>                                   | 11:00 | <b>4-2-06</b> Bacterial bioluminescence is an important regulator of multitrophic interactions in soil ecosystems<br><b>Ricardo Machado</b>                                  |
| 10:30 | <b>4-2-04</b> Identification of plant cues involved in host alternation of the bird cherry-oat aphid <i>Rhopalosiphum padi</i><br><b>Rituparna Ghosh</b> | 11:15 | <b>4-2-07</b> Deciphering chemical communication in an aquatic insect<br><b>Gabriela Caballero Vidal</b>   |
| 10:45 | <b>4-2-05</b> When females differ - consequences of intraspecific mate recognition signal variability<br><b>Tamara Pokorny</b>                           | 11:30 | <b>4-2-08</b> Identification of a new gustatory receptor BminGR59b tuned to host wax in a specialist, <i>Bactrocera minax</i> (Diptera: Tephritidae)<br><b>Guijian Zhang</b> |

## Symposium 4-3

13:30 - 18:15



## From Blum's semiochemicals parsimony to Wilson's consilience

**Chair:** Zainulabeuddin Syed (University of Kentucky), Wei Xu (Murdoch University), Yuko Ishida (Research Institute of Luminous Organisms in Hachiojima)

- |       |   |       |  |
|-------|---|-------|--|
| 13:30 | <b>4-3-01</b> The circa-bi-dian clock of the large black chafer ( <i>Holotrichia parallela</i> ) manifests in the beetle's sex pheromone reception<br><b>Walter Soares Leal</b>         | 16:30 | <b>4-3-09</b> Sex pheromone communication in an insect parasitoid, <i>Campoletis chloridae</i> Uchida<br><b>Hao Guo</b>  |
| 14:00 | <b>4-3-02</b> Comparative Refolding Study of Insect Odorant Binding Proteins: Novel Approach and Insights<br><b>Wei Xu</b>  | 16:45 | <b>4-3-10</b> Identification, synthesis, and field evaluation of the sex pheromone of <i>Rachiplusia nu</i> (Lepidoptera: Noctuidae)<br><b>Paulo H G Zarbin</b>          |
| 14:15 | <b>4-3-03</b> Extreme sexual dimorphism in fig wasps: How does this affect olfaction?<br><b>Renee M Borges</b>  | 17:00 | <b>4-3-11</b> Clines in insect herbivory and abiotic stress support different dimensions of plant chemical diversity along ecological gradients<br><b>Jing Vir Leong</b> |
| 14:30 | <b>4-3-04</b> Gustatory polymorphism mediates a new adaptive courtship strategy<br><b>Ayako Wada-Katsumata</b>  | 17:15 | <b>4-3-12</b> The functional ecology of floral caffeine in plant-pollinator mutualism.<br><b>Yun-Heng Lu</b>   |
| 14:45 | <b>4-3-05</b> Effect of the <i>Candidatus Liberibacter asiaticus</i> infection on the Asian citrus psyllid response to a putative sex pheromone<br><b>Haroldo Xavier Linhares Volpe</b> | 17:30 | <b>4-3-13</b> Adaptive plasticity in behavioral and physiological responses of aphids to ant protection and predatory threat<br><b>Li Chen</b>                           |
| 15:00 | <b>4-3-06</b> Chemical signals and chemical noise - why plant defenses are more complex and pheromones are simpler in the tropics<br><b>Ari Grele</b>                                   | 17:45 | <b>4-3-14</b> Larval diet mediates pheromone composition in Fall armyworm<br><b>Rajendra Regmi</b>   |
| 15:15 | <b>4-3-07</b> A female-specific odorant receptor mediates oviposition deterrence in the moth <i>Helicoverpa armigera</i><br><b>Guirong Wang</b>   | 18:00 | <b>4-3-15</b> Signaling and reception in blood-feeding Arthropods: Ticks keep it simple<br><b>Zainulabeuddin Syed</b>  |
| 15:30 | <b>Coffee Break</b>   |       |  |
| 16:15 | <b>4-3-08</b> Mechanisms underlying sex pheromone detection in the silkworm <i>Bombyx mori</i> —From structure of antennae to molecular function<br><b>Takeshi Sakurai</b>              |       |  |

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## Symposium 17-3

9:45 - 11:45



## Tracing the evolution of social behavior through comparison across species

**Chair:** Nobuaki Mizumoto (Auburn University), Hongmei Li-Byarlay (Central State University), Grant Navid Doering (Arizona State University)

- |       |   |       |   |
|-------|---|-------|---|
| 9:45  | <b>17-3-01</b> Evolution of individual and collective activity in a hyper-diverse ant lineage<br><b>Grant Navid Doering</b> | 10:45 | <b>17-3-05</b> Social signal learning of the waggle dance in honey bees<br><b>Ken Tan</b>   |
| 10:00 | <b>17-3-02</b> Comparative Study of Termites' Nesting Strategies and Individual Movement Patterns<br><b>Kensei Kikuchi</b>  | 11:00 | <b>17-3-06</b> Grass/leaf-litter feeding in termites and how to recognize them<br><b>Jan Šobotník</b>   |
| 10:15 | <b>17-3-03</b> Sociality sculpt molecular evolution in facultatively social bees<br><b>Sandra M Rehan</b>                   | 11:15 | <b>17-3-07</b> Progressive provisioning wasp as a test to reproductive ground plan hypothesis for the evolution of social behaviour<br><b>Cintia Akemi Oi</b> |
| 10:30 | <b>17-3-04</b> Global-scale patterns of social organization in ants<br><b>Eddie Pérochon</b>                                | 11:30 | <b>17-3-08</b> Comparison of grooming behavior between two honey bee species<br><b>Hongmei Li-Byarlay</b>   |

## Symposium 20-5

13:30 - 18:15



## Environmental DNA: from insect monitoring to the assessment of ecological interactions

**Chair:** Michael Traugott (University of Innsbruck), James D. Harwood (Associate Professor of Entomology, University of Kentucky)

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|-------|---|-------|---|
| 13:30 | <b>20-5-01</b> Disentangling the molecular toolbox: choosing suitable eDNA methods for entomological research<br><b>Michael Traugott</b>  | 15:30 | <b>Coffee Break</b>   |
| 13:45 | <b>20-5-02</b> Molecular diagnostics reveal both landscape pattern effects and functional redundancy in whitefly-predator food-webs<br><b>Jason Schmidt</b>   | 16:15 | <b>20-5-09</b> Unveiling the Hidden Buzz: Using eDNA to Illuminate Pollinator Networks<br><b>Sabrina Gurten</b>   |
| 14:00 | <b>20-5-03</b> DNA metabarcoding evidenced plant consumption by aphid-predating coccinellids.<br><b>Violeta Romero</b>  | 16:30 | <b>20-5-10</b> Community assembly of arthropods on <i>Brassica napus</i> : Insights from visual inspection and environmental DNA metabarcoding<br><b>Kinuyo Yoneya</b>              |
| 14:15 | <b>20-5-04</b> High-throughput sequencing reveals inter- and intra-predation among Coccinellidae in jujube orchards<br><b>Su Wang</b>   | 16:45 | <b>20-5-11</b> eDNA Revolution: Detection of Green Peach Aphids ( <i>Myzus persicae</i> ) in Greenhouse Tomato Plants for Enhanced Pest Management<br><b>Jonathan Lee-Rodriguez</b> |
| 14:30 | <b>20-5-05</b> Variation in the detectability of predator-prey interactions may lead to misleading conclusions in trophic ecology studies, how to prevent it?<br><b>Ambre Sacco-Martret de Préville</b> | 17:00 | <b>20-5-12</b> Characterising tree-hole invertebrate communities using environmental DNA<br><b>Carlos Lopez Vaamonde</b>  |
| 14:45 | <b>20-5-06</b> How many preys does a predator eat in a day?<br><b>Abel Louis Masson</b>   | 17:15 | <b>20-5-13</b> Combining Metabarcoding with Entomological Sampling: Streamlining Biomonitoring and Maximising Species Detection<br><b>Ben Hawthorne</b>                             |
| 15:00 | <b>20-5-07</b> Quantitative dung beetle-vertebrate networks - An optimised DNA metabarcoding protocol for detecting vertebrate DNA from dung beetle gut contents<br><b>Xin Rui Ong</b>                  | 17:30 | <b>20-5-14</b> Insect Biodiversity Assessment in Organic Orchards using Taxonomy and Metabarcoding<br><b>Andrea L Joyce</b>   |
| 15:15 | <b>20-5-08</b> Natural reservoir of <i>Trypanosoma cruzi</i> found in triatomines targeting humans: results from nation-wide vector surveillance in El Salvador<br><b>Yu Michimuko-Nagahara</b>         | 17:45 | <b>20-5-15</b> Exploring arthropod communities in boreal forest with the use of DNA metabarcoding<br><b>Lisa Fagerli Lunde</b>  |

18:00 **20-5-16** Comparative metagenomics of soil microbiome and soil invertebrates of native forest and exotic pasture habitats  
Michelle Guerrero

## Room 510

## Symposium 20-6

9:45 - 11:45



## Data-intensive entomology: global standards and practices

**Chair:** Dmitry Schigel (Global Biodiversity Information Facility (GBIF), Secretariat)

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|-------|---|-------|--|
| 9:45  | <b>20-6-01</b> Insects and global biodiversity: data standards and data practices<br>Dmitry Schigel   | 10:45 | <b>20-6-05</b> A framework to study the diversity of body colour using digital picture database: application to the hyperdiverse ant genus <i>Pheidole</i><br>Sébastien Ollier |
| 10:00 | <b>20-6-02</b> A large-scale Insect monitoring framework incorporating abundance and optimizing taxonomic expertise: Human-Assisted Molecular Identification (HAMI)<br>Benoit Penel | 11:00 | <b>20-6-06</b> Spatial, temporal, and taxonomic trends from butterfly monitoring programs<br>David B Roy   |
| 10:15 | <b>20-6-03</b> A DNA-based system for early detection of new alien insect species in the field<br>Rannveig Margrete Jacobsen  | 11:15 | <b>20-6-07</b> Molecular phylogeny of Australian Gelechioidea (Lepidoptera), one of the most speciose superfamilies of micro-moths in the world<br>Siwanon Paphatmethin        |
| 10:30 | <b>20-6-04</b> Unlocking Regional Biodiversity: Using GBIF to Mobilize Dung Beetle Records from Sabah, Malaysia<br>Wen Han Marx Yim   | 11:30 | <b>20-6-08</b> Priority areas for Mantodea research in South Africa<br>Bianca Greyvenstein   |

## Symposium 10-3

13:30 - 15:30



## Symbiotic microorganisms alter insect behavior

**Chair:** Yoshitomo Kikuchi (National Institute of Advanced Industrial Science and Technology (AIST)), Martha S Hunter (University of Arizona)

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|-------|--|-------|---|
| 13:30 | <b>10-3-01</b> Specialized behaviors to find a special symbiont: fecal symbiont transmission by <i>Anasa</i> squash bugs<br>Nicole M Gerardo | 14:30 | <b>10-3-05</b> The influence of the honeybee gut microbiota on host cognitive abilities, social behavior and behavioral maturation<br>Joanito Liberti   |
| 13:45 | <b>10-3-02</b> The Microbiome and Tephritid Behavior<br>Boaz Yuval   | 14:45 | <b>10-3-06</b> Grooming as behavioral immunity<br>Aya Yanagawa  |
| 14:00 | <b>10-3-03</b> Cricket microbiome modulation changes territorial-related aggression<br>Christian Ryan Guerrero                               | 15:00 | <b>10-3-07</b> The effects of gut symbiotic bacteria on behaviors of herbivore host, <i>Riptortus pedestris</i> (Hemiptera: Alydidae) and their implications in tri-trophic interactions<br>Doo-Hyung Lee |
| 14:15 | <b>10-3-04</b> The hidden world of ant symbiosis: A worker-specific gut symbiosis in an ant<br>Hiroyuki Shimoji                              | 15:15 | <b>10-3-08</b> Investigating the Effects of a Microbial Gut Symbiont on Brain Development of Leguminous Pest <i>Riptortus pedestris</i> .<br>Antoine Olivier Lirette                                      |



Advancing experimental manipulation of insect-bacterial associations

Chair: Tomonari Nozaki (National Institute for Basic Biology), Colin Dale (University of Utah)

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|--------------|---|--------------|--|
| <p>16:15</p> | <p><b>10-4-01</b> Forging a Path into the Unreachable - Unveiling the Gene Interference of Unculturable <i>Buchnera</i> in Aphid Using Synthetic PNAs<br/><b>Kathrine Xin Yee Tan</b></p> | <p>17:15</p> | <p><b>10-4-04</b> Engineering and evolving culturable <i>Serratia symbiotica</i> to understand how bacterial pathogens become aphid endosymbionts<br/><b>Jeffrey Barrick</b></p> |
| <p>16:45</p> | <p><b>10-4-02</b> Nascent obligate symbiosis in an insect-parasitic nematode<br/><b>Steve Perlman</b></p>   | <p>17:30</p> | <p><b>10-4-05</b> Symbiotic strategies to combat vector-borne disease<br/><b>Guan Hong Wang</b></p>  |
| <p>17:00</p> | <p><b>10-4-03</b> Unlocking evolutionary secrets: Tryptophan metabolism mutations drive <i>Pantoea</i> into mutualistic symbiosis with stinkbugs<br/><b>Yayun Wang</b></p>                | <p>17:45</p> | <p><b>10-4-06</b> A mechanism for pathogen protection via bacteria-bacteria competition in insect guts<br/><b>Brittany Peterson</b></p>  |
|              |   | <p>18:00</p> | <p><b>10-4-07</b> Specificity of an obligate leaf beetle-bacterial symbiosis<br/><b>Inès Pons</b></p>  |

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## Tuesday 27 August

## Event Hall

Poster 8

11:45 - 13:30



## Acarology and Arachnology

- P0270 Molecular verification of commercialized *Neoseiulus californicus* (McGregor) settlement before spider mite appearance in a Japanese pear orchard  
**Yuya Mikawa**
- P0271 Dispersal of commercial *Neoseiulus californicus* in a Japanese pear orchard managed using soil mound rhizosphere-restricted culture system  
**Mungunzaya Munkhtumur**
- P0272 Methyl salicylate as an airborne signal in neighboring cowpea plants' systematic defense responses against spider mites  
**Yixia Wu**
- P0273 Improvement of the mass rearing techniques for the Coconut Mite (*Aceria guerreronis* Keifer) in the laboratory  
**Nattaya Jumpameueng**
- P0274 Alien species of spider mites (Prostigmata: Tetranychidae) in fauna of Russia  
**Ilya Kamayev**
- P0275 Salivary proteins are also components of silk threads in the two-spotted spider mite, *Tetranychus urticae* Koch  
**Yuka Arai**
- P0276 Interaction between tea plants and spider mites: detoxification mechanism of *Tetranychus kanzawai* to catechins  
**Naoki Takeda**
- P0277 Evaluation of ecological parameters in the predatory mite *Amblyseius rademacheri* Dosse (Acari: Phytoseiidae)  
**Shogo Usugi**
- P0278 Species identification and phylogenetic relationships in the spider mite family Tetranychidae (Acari) using DNA barcoding and transcriptomic analysis  
**Tetsuo Gotoh**
- P0279 Thinking of *Thrasychirus*: An Evolutionary and Phylogenetic Analysis of South American Long-Legged Harvesters (Arachnida, Opiliones, Neopilionidae)  
**Grant Wass**
- P0280 Floral margins increase natural abundance of spiders (araneomorphae) in annual brassica crops  
**Enrique Maldonado Santos**
- P0281 The Cattle Fever Tick Genus Name *Boophilus* Curtice is not a synonym of *Rhipicephalus* Koch (ACARI: IXODIDAE).  
**Donald Thomas**
- P0282 Does Experience Matter? The Influence of Initial Indiscriminate Mating on Remating and Hybridization Rates in Regal Jumping Spiders  
**Trinity Walls**
- P0283 Kleptocytosis: A Novel Parasitic Strategy for Accelerated Reproduction via Host Protein Stealing in *Varroa destructor*  
**Sammy Ramsey**
- P0284 Does the house dust mite have circadian rhythm?  
**Tomoyuki Hashimoto**

Poster 9

11:45 - 13:30



## Conservation, Biodiversity and Biogeography

- P0285 Competitive exclusion of a burying beetle by mongoose  
**Akira Ueda**
- P0286 Melissopalynological analysis of honey produced by three species of honey bees (*Apis mellifera*, *A. cerana* and *A. dorsata*) from Peninsular Malaysia  
**Wahizatul Afzan Azmi**
- P0287 A Larval Survey and Monitoring Protocol for the Federally Endangered Miami Tiger Beetle  
**Tiffany Moore**
- P0288 Historic monitoring data in the Netherlands: invertebrate survey in the stream valley of the Drentsche Aa  
**Lia Hemerik**
- P0289 The evolution of reproductive isolation in a species continuum (Ephemeroptera)  
**Masaki Takenaka**
- P0290 Examining Ecuadorian Amazonian Ant Biodiversity  
**Robin Verble**
- P0291 Parasitoid communities as potential indicators for agricultural extensification – three perspectives  
**Annette Herz**
- P0292 Effect of clearcut forestry on beetles in boreal spruce forests in Southeastern Norway  
**Milda Norkute**



- P0293 InsectMow – Development and Evaluation of insect- and spider-friendly mowing techniques  
**Lea von Berg**
- P0294 Diversity of Ant in Different Farming Systems and Crops in Hualien, Taiwan (Hymenoptera: Formicidae)  
**Chunhan shih**
- P0295 Utilization of wild plants to enhance beneficial arthropods in agroecosystems  
**Myrto Barda**
- P0296 Ant Species Diversity in the Resources Protection Area of Khon Kaen Province in the Northeastern Thailand  
**Duangrat Thongphak**
- P0297 Characterizing Dung Beetle Assemblages in Forests across Japanese Archipelago  
**Keiko Kishimoto-Yamada**
- P0298 Digging in the dirt: marsupial ecosystem engineers change assemblages of soil-dwelling insects in semi-arid Australia.  
**Lucy G Johanson**
- P0299 Wing color polymorphism by larval host plant in two lycaenid butterflies  
**Norio Hirai**
- P0300 Baseline species occurrence of Odonata at Christ Church Meadow, Oxfordshire, United Kingdom.  
**Jake Dudderidge**
- P0301 Variability in species composition of beneficial arthropods (parasitoid: Hymenoptera & predator: Araneae) across multiple types of coffee fields in Puerto Rico.  
**Jesús E Gómez**
- P0302 Cave Biodiversity's Picture is Greater When Smaller Creatures are Included: Diversity of Terrestrial Cave Arthropods in CALABARZON Region, Philippines  
**Ireneo Latunio Lit**
- P0303 Arthropod conservation in agricultural landscapes of the Cape Floristic Region  
**René Gaigher**
- P0304 Status and Diversity of Terrestrial Insects in the Aird Environments of the United Arab Emirates  
**Anitha Saji**
- P0305 May forestry affect dead wood decomposition through insects?  
**Tone Birkemoe**
- P0306 Determining the best biological proxy metrics to estimate Hong Kong insect diversity by using Coleoptera and Hymenoptera data  
**Yuen Lam Ng**
- P0307 Increased influence of eusocial insects and reduced xylophagy in restored saproxylic beetle communities  
**Tsz Kin Calvin Leung**
- P0308 Investigating the biodiversity and systematics of Australian rogadin parasitoid wasps using DNA barcoding and phylogenomics (Braconidae, Rogadinae)  
**Mollie-Rosae Slater-baker**
- P0309 Are water beetles in Europe's biodiversity hotspot still overlooked?  
**Vlatka Mičetić Stanković**
- P0310 Biotic and abiotic factors affecting the parasitism of an endangered butterfly *Plebejus argyrognomon* inhabiting semi-natural grasslands around farm lands  
**Yen-Hua Yeh**
- P0311 Efforts and continuous researches for the conservation of the Relict Longhorned Beetle, *Callipogon relictus* Semenov (Coleoptera: Cerambycidae: Prioninae), in South Korea  
**AYoung Kim**
- P0312 Adapted to the extreme: moth community of the calanchi areas, South Italy (Lepidoptera)  
**Sara La Cava**
- P0313 The contribution of cultivated and semi-natural habitats to beta-diversity of macrolepidoptera within a century-old olive grove  
**Giada Zucco**
- P0314 Long term monitoring of nocturnal macrolepidoptera in southern Italy: results of 43 months of counting in a suburban area (Lepidoptera)  
**Stefano Scalercio**
- P0315 Nocturnal macrolepidoptera communities of the Special Area of Conservation "Foce Neto", an Italian Natura 2000 area submitted to a strong reduction  
**Giuseppe Rijillo**
- P0316 The congregating, *Pteroptyx* fireflies Olivier (Coleoptera: Lampyridae) in the Green Lung of Bangkok, Thailand  
**Soraya Jaikla**
- P0317 Biogeography and biodiversity of the Scarabaeoidea beetles in the Tokara Islands, the Ryukyu Archipelago, Japan  
**Tadatsugu Hosoya**
- P0318 Trophic network analysis of *Parnassius apollo* (Lepidoptera: Papilionidae, Parnassiinae) adults in the Aspromonte National Park, South Italy.  
**Ilaria Latella**
- P0319 Modeling changes in hydrology to conserve the Gibson's Big Sand Tiger Beetle (*Cicindela formosa gibsoni*) – a Canadian species at risk.  
**Iain David Phillips**
- P0320 Species diversity indices in insect ecology: myths and facts  
**Pavel Drozd**
- P0321 DNA barcoding and phylogeography of some earthy weevils from Aichi Prefecture, Japan  
**Atsumi Kataoka**
- P0322 Diversity and habitat use of paedogenetic gall midges (Diptera: Cecidomyiidae) in Japan  
**Fumito Yano**
- P0323 Molecular phylogeny and genetic structure of the coastal tiger beetle *Abroschelis anchoralis* in East Asia: the effect of a population bottleneck on genetic diversity in Japan  
**Keisuke Shimada**

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| <p>P0324 Tracking Insect assemblage in the Southern Western Ghats: active vs. passive sampling?<br/><b>Romila Devi</b></p> <p>P0325 Food Selection by an Endangered Marine Insect <i>Halovelina septentrionalis</i> Esaki (Hemiptera: Veliidae)<br/><b>Terumi Ikawa</b></p> | <p>P0326 Insects sampling in uninhabited islets of the Balearic Islands, Spain.<br/><b>Carlos Barceló</b></p> <p>P0327 Terrestrial nemertean that became invasive in the Ogasawara Islands, Japan.<br/><b>Toshio Kishimoto</b></p> |
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Poster 10

11:45 - 13:30



Immunology and Pathology

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| <p>P0328 Immunological study of the Toll pathway adaptor protein, <i>TmTRAF</i>, in <i>Tenebrio molitor</i><br/><b>Jie Eun Park</b></p> <p>P0329 Functional study of intractable adaptor protein of Toll Pathway, <i>TmTube</i>, during the production of AMPs in response to microbial infection<br/><b>Min Kyu Sang</b></p> | <p>P0335 Differences in adhesive performance between strains in plasma cells, silkworm (<i>B. mori</i>) blood cells, and their factors<br/><b>Masahito Nozaki</b></p> <p>P0336 Fitness effect of symbiotic polinton-like viruses on Adoxophyes honmai entomopoxvirus<br/><b>Masataka Suto</b></p> |
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| <p>P0330 <i>TmSR-C</i>, scavenger receptor class C, plays a pivotal role in antifungal and antibacterial immunity in the coleopteran insect <i>Tenebrio molitor</i><br/><b>Yong Hun Jo</b></p> <p>P0331 Honey-derived <i>Paenibacillus</i> spp. with potential to affect bee brood development in <i>Apis mellifera</i><br/><b>Daisuke Takamatsu</b></p> | <p>P0337 Functional analysis of parasitoid killing factor in <i>Spodoptera exigua</i><br/><b>Haru Migita</b></p> <p>P0338 Functional characterization of JNK Kinase, <i>Tmhsp</i>, in response to microbial infection in <i>Tenebrio molitor</i><br/><b>Seo Jin Lee</b></p> |
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| <p>P0332 Functional analysis of Two Transglutaminases from the Oriental Armyworm, <i>Mythimna separata</i>, in Innate Immunity<br/><b>Ying Zhu</b></p> <p>P0333 Analyses of ribosome degradation in <i>Bombyx mori</i> cells infected with Autographa californica multiple nucleopolyhedrovirus<br/><b>Yuki Sakagami</b></p> <p>P0334 Production of monoclonal antibody against hemagglutinin using baculovirus<br/><b>Yu-Chan Chao</b></p> | <p>P0339 Characterization of serine/threonine kinase of Toll pathway, <i>Pelle</i>, in regulating antimicrobial peptide production in <i>Tenebrio molitor</i><br/><b>SungMin Ku</b></p> <p>P0340 In silico identification and expression analysis of superoxide dismutases in <i>Tenebrio molitor</i><br/><b>hyeonjun shin</b></p> <p>P0341 Functional study of <i>TmPellino</i> in response to microbial challenge in <i>Tenebrio molitor</i><br/><b>Ho Am Jang</b></p> <p>P0342 Roles of serine protease-related proteins in activation of the Anopheles gambiae prophenoloxidasases<br/><b>Yang Wang</b></p> |
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Poster 11

11:45 - 13:30



Insect-Microbe Interactions

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| <p>P0343 Effect of the symbiont <i>Hamiltonella</i> on the protein acetylation of <i>Bemisia tabaci</i><br/><b>Xin-Yu Ma</b></p> <p>P0344 <i>Hamiltonella</i> regulates whitefly fertilization by influencing the expression of maternal gene <i>tudor</i><br/><b>Xiang Sun</b></p> | <p>P0347 The aphid BCR4 structure and activity uncover a new defensin peptide superfamily<br/><b>Hugo Terrasson</b></p> <p>P0348 Replication kinetics and tissue tropism of multiple insect-specific viruses in a naturally co-infected <i>Aedes aegypti</i> colony<br/><b>Yasutsugu Suzuki</b></p> |
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| <p>P0345 Studies toward the Development of Symbiosis-Targeted Control of <i>Bemisia tabaci</i><br/><b>Akiko Fujiwara</b></p> <p>P0346 Host shifting and genome evolution of <i>Nosema</i>, an obligate microsporidian symbiont causing Nosemosis in insects<br/><b>Xu Wang</b></p> | <p>P0349 Parallel gene losses in <i>Blattabacterium</i>, an obligate endosymbiont of cockroaches<br/><b>Zhuli Cheng</b></p> |
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- P0350 First genetic characterization of the endosymbionts of *Xyphon reticulatum* to study their potential role in the development genetic regulatory networks of cicadellids.  
**Priscila Gomez Polo**
- P0351 Intracellular symbiosis by *Caballeronia* in seed bugs: a missing link between gut symbiosis and intracellular symbiosis  
**Hiroyuki Morimura**
- P0352 Gut microbiota regulate host ovarian development via DNA 6mA methylation in *Bactrocera dorsalis*  
**Qiuyuan Zhang**
- P0353 Complex multipartite microbial symbioses in treehoppers characterized with genomics and metatranscriptomics  
**Amanda M. V. Brown**
- P0354 Microbial Analysis in *Vespa mandarinia*: Illumina MiSeq vs. PacBio HiFi  
**Yong Seok Lee**
- P0355 Molecular function of invertebrate-type lysozyme in aphid endosymbiosis  
**Shinichi Yoda**
- P0356 Bee-flower-microbe phenology: where do microbes overwinter?  
**Quinn S. McFrederick**
- P0357 Diverse male-killing mechanisms inferred from different *Wolbachia* responses against male-killing suppressor  
**Hiroshi Arai**
- P0358 The role of salivary proteins in *Wolbachia*-mediated manipulation of host reproduction in the two-spotted spider mite (*Tetranychs urticae*)  
**Xiao-Li Bing**
- P0359 Comparative genomics of a novel *Erwinia* species associated with the Highland midge (*Culicoides impunctatus*)  
**Jack Pilgrim**
- P0360 *Rickettsia* induces cytoplasmic incompatibility in the mirid bug, *Nesidiocoris tenuis*  
**Yuta Owashi**
- P0361 Gut bacterial diversity in *Vespa velutina* and implications for potential adaptation in South Korea  
**Ohseok Kwon**
- P0362 Costs and benefits of environmental symbiont acquisition in the bug-*Caballeronia* symbiosis  
**Alison Ravenscraft**
- P0363 Erwiniaceae bacteria play defensive and nutritional roles in two widespread ambrosia beetles  
**Juan Carlos Cambroner-Henrichs**
- P0364 Sigmavirus transmission mode and CO<sub>2</sub> sensitivity in Queensland fruit fly, *Bactrocera tryoni* (Froggatt) (Diptera: Tephritidae)  
**Sanjay Kumar Pradhan**
- P0365 3D reconstruction and characterization of cellular changes in early aphid gall organogenesis  
**Xin Tong**
- P0366 Composition and diversity of gut microbiota in different beetle species  
**Xue-Wen Li**
- P0367 Recent advances in understanding the biology and ecology of *Nezara viridula* (L.)  
**Jesus Esquivel**
- P0368 *Wolbachia* target viral RNA and restrict its replication in insect cells  
**Manabu Ote**
- P0369 Detection of endosymbiont DNA in museum specimens of the *Paederus* beetle  
**Katarzyna Koszela**
- P0370 Reduction of ammonia emission in black soldier fly larvae based food waste conversion system using *Thiobacillus thioparus* inoculation.  
**Jitao Fang**
- P0371 Prevalence of *Wolbachia* infection in Japanese Spilomelinae and Pyraustinae moths  
**Tomohiro Muro**
- P0372 Metagenome analysis and density of bacterial endosymbionts of important hazelnut pest, *Palomena prasina* L. (Hemiptera: Pentatomidae).  
**Naciye Sena Cagatay**
- P0373 Right Place, Right Time: Symbiont Acquisition Restricted by Bacterial Distribution and Nymphal Age  
**Liam Sullivan**
- P0374 Commensal bacteria enable development of mosquito larvae on detritus diets  
**Derek T Huck**
- P0375 Elucidating Gut Microbiome Differences From Species and Sex in Laboratory-Reared Pest Tephritidae  
**Mikinley Weaver**
- P0376 Bee pollen provisions: Current methods and perspectives to understand the diversity and functions of their fermentative bacteria.  
**Magda Paola Argueta**
- P0377 A hidden player of defensive symbiosis: Ingested soil bacteria breach gut epithelia and prime systemic immunity without pathogenic activity in *Riptortus pedestris*  
**Yoshitomo Kikuchi**
- P0378 A gut-inhabiting fungus of larval Thaumaleidae (Diptera) collected for the first time in 60 years in Japan  
**Hiroki Sato**
- P0379 The intracellular symbiont *Lariskella* causes cytoplasmic incompatibility in the Leaf-footed bug, *Leptoglossus zonatus*  
**Edwin F Umazor**
- P0380 Deciphering the Intricate Dance of Nutritional Symbiosis through Genome-Scale Metabolic Modeling  
**Morgan Elizabeth Lavenstein Bendall**
- P0381 Dynamics of LdMNPV in the field associating with epizootic.  
**Keigo Toyokura**

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- P0382 Occurrence of male-killing in the ladybird *Harmonia axyridis* by injecting the cryopreserved *Spiroplasma*  
**Isao Kobayashi**
- P0383 Toward elucidation of the mechanism of *Wolbachia*-induced parthenogenesis  
**Yuta Ohata**
- P0384 Accelerated hatching of the yellow fever mosquito, *Aedes aegypti* is caused by a decrease of dissolved oxygen  
**Nozomi Uemura**
- P0385 Bacterial endowment in harlequin ladybird confers interspecies competitive edge  
**Chaowei Zhang**
- P0386 Comparative analyses of insect and microbial genomes reveal the evolutionary relationship between endemic Hawaiian seed bugs  
**Heather Stever**

Poster 12

11:45 - 13:30



Systematics, Phylogeny and Morphology

- P0387 A phylogenetic study on *Gastrobothrus* Broun and *Physobryaxis* Hetschko (Staphylinidae: Pselaphinae) from New Zealand with descriptions of new species  
**Yeon-Jae Choi**
- P0388 Phylogeny of the subgenus *Nialoe* s. lat. (Coleoptera: Carabidae: *Pterostichus*) and examination of species status in the *audax* complex  
**Dooyoung Kim**
- P0389 Revision of the genus *Adalmus* (Staphylinidae: Pselaphinae: Euplectitae: Panaphantina) in New Zealand  
**Ui-Joung Byeon**
- P0390 Taxonomic revision of the featherwing beetles (Coleoptera: Ptiliidae) in Korea  
**Taeyoung Jang**
- P0398 Taxonomic Review of the Family Anamorphidae Strohecker (Coleoptera: Coccinelloidea) in Korea with Description of Two New Species  
**Ui-Jun Hwang**
- P0399 First genus-level phylogeny of Paederinae using genomic and morphological data  
**Dagmara Zyla**

- P0391 Two new apterous species of *Atomaria* Stephens and *Cryptophagus* Herbst (Coleoptera: Cryptophagidae) in Korea  
**Joong-In Shin**
- P0392 Taxonomy and phylogeny of the genus *Tmesiphorus* and allied genera, with special reference to myrmecophily and termitophily (Coleoptera, Staphylinidae, Pselaphinae).  
**Shota Inoue**
- P0393 Systematics of the tribe Platyrhinini Imhoff from Japan and taxonomic position of the European species *Ulorhinus bilineatus* (Coleoptera: Anthribidae)  
**Shunsuke Imada**
- P0394 An overview of the phylogeny of the *Lathrobium* (Coleoptera; Staphylinidae; Paederinae) from Japan  
**Yuya Sato**
- P0400 Revision of the Genus *Cryptarcha* (Coleoptera, Nitidulidae) in Japan, Based on Molecular, Morphological, and Mating Experiment  
**Naoya Ito**
- P0401 Resolving the taxonomic conundrum of *Cladotoma* Westwood (Coleoptera: Ptilodactylidae)  
**Michael A. Ivie**

- P0395 Molecular phylogeny of the ecologically diverse rove beetle subtribe Bolitocharina (Coleoptera: Staphylinidae: Aleocharinae)  
**Takuto Hashizume**
- P0396 Molecular Phylogeography of Riffle Beetles in Mountain Streams based on Genome-wide SNPs data (GRAS-Di Analysis).  
**Takumi Yoshida**
- P0397 Toward the comprehensive phylogeny of myrmecophilous rove beetles, *Homoeusa*, and related genera (Coleoptera: Staphylinidae: Aleocharinae) in the Holarctic region  
**Tsubasa Nozaki**
- P0402 A complete phylogeny for the charismatic genus *Onymacris* (Coleoptera: Tenebrionidae) using ultraconserved elements.  
**Iris L Bright**
- P0403 A revision of *Pseudochelonarium* Pic (Coleoptera: Chelonariidae)  
**John Paul Kole**
- P0404 Taxonomic study of the genus *Stenotropis* (Curculionidae: Cossoninae) of Japan  
**Shugo Inoue**
- P0405 The histerid beetle *Atholus* Thomson, 1859 (Coleoptera, Histeridae) in the Oriental Region and their distribution in the Indo-Australian Archipelago (IAA)  
**Ian Niel dela Cruz**

- P0406 Left-right asymmetry of head in adult *Doubledaya bucculentra*  
**Hiroki Oda**
- P0407 Ventral Forewing Eyespot Patterns of the Genus *Coenonympha* Butterflies Show Phylogenetic Evolutionary Development  
**Masamitsu Mori**
- P0408 A recent review of Pyraloidea in the Ogasawara Islands  
**Yuki Matsui**
- P0409 Molecular phylogeny and reclassification of Chalcosiinae (Zygaenidae)  
**Shen-Horn Yen**



- P0410 Integrated Phylogenetic Study of the Tribe Macariini (Geometridae, Lepidoptera) in Korea  
**Bo-Ra Shin**
- P0411 Phylogenetics of the bombiform bagworm moths (Lepidoptera: Psychidae: Oiketinae)  
**Ethan Beaver**
- P0412 Taxonomic study of Japanese *Agonopterix takamukui* and its allied species (Lepidoptera: Depressariidae)  
**Hazumu Arashima**
- P0413 Unraveling the intricate species complex of the Spanish Moth *Xanthopastis timais* (Cramer)  
**Rhys J.L. Campo**
- P0414 Phylogeny of bagworms (Lepidoptera: Psychidae): a preliminary result from anchored hybrid enrichment data  
**David (Chung-Te) Cheng**
- P0415 The significance of lepidopterous insects associated with Taiwan Beech on the biodiversity conservation  
**Yu-Feng Hsu**
- P0416 Morphological and molecular variation in the polyphagous genus *Paraclemensia* (Lepidoptera: Incurvariidae), with synonymy of the *P. viridis* and related taxa  
**Hyeongkyu Kim**
- P0417 Taxonomic study of the genus *Promalactis* (Lepidoptera: Oecophoridae) of the Ryukyu Archipelago, Japan  
**Shunsuke Tomura**
- P0418 Diversity and feeding habit of Japanese *Heliozela* (Lepidoptera: Heliozelidae)  
**Sadahisa Yagi**
- P0419 Current research status of the Japanese Cochylina (Lepidoptera: Tortricidae: Tortricinae: Cochylini)  
**Shinya Suzuki**
- P0420 Contribution to the knowledge about relationship between diagnostic features of the genitalia and types of reproductive strategies in different groups of Lepidoptera  
**Margarita Kovalenko**
- P0421 Unraveling the systematics and evolutionary history of Troidini (Lepidoptera: Papilioninae) with whole genome data  
**Eliette Reboud**
- P0422 Estimation of Amami population origin, taxonomic review and habitat suitability prediction in *Polyura eudamippus*  
**Shu Makita**
- P0423 Detection of morphological features in egg chorion structure for species identification of different groups of Lepidoptera  
**Julia Alexandrovna Lovtsova**
- P0424 Leaf roller moths of the tribe Olethreutini (Tortricidae: Olethreutinae) in Thailand  
**Sopita Muadsub**
- P0425 Knowledge of Olethreutinae moths (Lepidoptera: Tortricidae) in Thailand: from Japanese to Thai lepidopterist  
**Nantasak Pinkaew**
- P0426 Genus *Erechthias* (Tineidae, Erechthiinae) of Ogasawara Islands.  
**Jinhyeong Park**
- P0427 Observation of body fluid and chemical composition during the pupal stage of *Trypoxylus dichotomus* using Magnetic Resonance Imaging and Spectroscopy  
**Shoto Ikegami**
- P0428 Observation of tissue changes of *Trypoxylus dichotomus* in the pupal stage using Magnetic Resonance Imaging Technique  
**Ren Harada**
- P0429 From literature to molecular: Changes in taxonomy of Japanese skippers (Lepidoptera: Hesperidae)  
**Hideyuki Chiba**
- P0430 A new species of *Makivora* (Lepidoptera: Tortricidae: Olethreutinae) mining into the leaves of *Podocarpus macrophyllus* from Japan.  
**Ikumi Kawashima**
- P0431 Initiatives for sustainable conservation of a critically endangered butterfly, with a focus on activities granted by the Pro Natura Foundation Japan  
**Takashi Tanio**
- P0432 Development of identification method of a subfamily Plusiinae (Lepidoptera: Noctuidae) using the morphological patterns on forewings  
**Sori Choi**
- P0433 Comparison of climatic niches of the plant bug species with a Western Palearctic distribution (Heteroptera: Miridae: Mirinae: Mirini)  
**Polina Aleksandrovna Dzhelali**
- P0434 Molecular phylogeny of the tribe Cerataphidini (Hemiptera: Aphididae)  
**Minho Lee**
- P0435 Two new species of *Cerataphis* Lichtenstein (Hemiptera: Aphididae) from Laos  
**Seunghwan Lee**
- P0436 Review of Oriental species of *Zanchius* (Miridae: Orthotylinae) and allied genera, with discussion on new species and their distribution  
**Minsuk Oh**
- P0437 Emerging Hitchhiker Pests at the Australian Border: Overcoming Diagnostic Challenges with Pentatomidae  
**Andrew J Maynard**
- P0438 Phylomorphospace and functional optimality of Hemipteran wings  
**Runzhe Yu**
- P0439 Molecular phylogeography of water striders, *Aquarius paludum* (Heteroptera: Gerridae), expanding to the saline environments  
**Haruka Asanabe**
- P0440 EcoBee CPS : Integration of CPS into Traditional Beekeeping  
**Oruj Orujov**

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