

EurBee 8

8th Congress of Apidology

18-20 SEPTEMBER 2018

Ghent, Belgium

Program & Abstract Book





GENERAL INFORMATION

Venue

EurBee 8 takes place at the **Campus Ledeganck of Ghent University** (UGent).
Address: Karel Lodewijk Ledeganckstraat 35, 9000 Gent

House rules

Please wear your badge at all times
The venue is a public non-smoking building.
Switch off your mobile phone during the sessions.
It is not permitted to take cupes, glasses or plates into a room.

Use of wireless internet and access to e-mail at UGent

There are two options to connect to the internet:

1. If your home institution is part of the eduroam network, you can easily access the internet at the congress venue and other Ghent University buildings. Normally your device will identify a valid eduroam access point and log-in automatically. You can do so with your own login and password.

The settings at UGent are the following:

Network Name/SSID: eduroam (lower case!)(is broadcast)

Security Type: WPA2-Enterprise

Encryption Type: AES

Authentication method: PEAP

Authentication protocol: MSCHAP / Sub authentication method: EAP-MSCHAP V2

2. If you have no access via eduroam, follow the next steps:

Step 1 – go to network connections

Step 2 – select UGentGuest (If you have set up to request an IP address automatically, you will receive an IP address starting with 193.190.8x.)

Step 3 – now you are connected, but not authenticated. You should start a web browser and you will be redirected to a login screen:

Users name / login: **guestEurbee**

Password: **5kc3mLNL**

Registration and Information Desk Opening Hours

Monday 17 September:	17h30-21h00	Aula Ghent University
Tuesday 18 September:	07h45-18h45	Campus Ledeganck
Wednesday 19 September:	08h00-15h00	Campus Ledeganck
Thursday 20 September:	08h00-18h30	Campus Ledeganck

Lost and Found

For lost and found personal belongings, please contact the Information desk.

First Aid

In case of emergency, please contact the Information Desk.

Meals

Coffee/tea and will be served at the McLeod Foyer of Campus Ledeganck of UGent.
Lunches will be served daily at the **Campus Ledeganck of HoGent** (HoGent).
Address: Karel Lodewijk Ledeganckstraat 8, 9000 Gent

Use of wireless internet and access to e-mail at HoGent:

Please follow the next steps:

Step 1 – go to network connections

Step 2 – select the network: **Eurbee8**

Password: **18092018**

Dress code

No specific dress code during the congress (typically casual / smart casual); for the banquet dinner typically casual/cocktail - still compatible with a dance party afterward.

We kindly advise you to wear comfortable shoes during the social activity Wednesday afternoon 19 September.

Badge

Your personal name badge is your entrance ticket to all sessions and other activities of the EurBee 8 Congress. Please remember to wear this badge at all times during the Congress and the social activities. At the back of your badge is a number that you can call during the Congress in case of emergencies.

Duplication / Recording / Photo Policy

Attendees or exhibitors are encouraged to network and enjoy the congress experience. As such, capturing memories of casual meeting activities and networking is permitted with the permission of those being prominently photographed. Photographing formal meeting presentations, posters, or displays is forbidden without permission of EurBee and the presenter.

Insurance and Liability

The Congress organising committee and Semico n.v. do not accept liability for personal medical expenses/ travel expenses/losses of whatever nature incurred by delegates.

Exhibition

An exhibition will be available during the meeting. We invite you to visit our exhibitors at the Campus Ledeganck UGent:

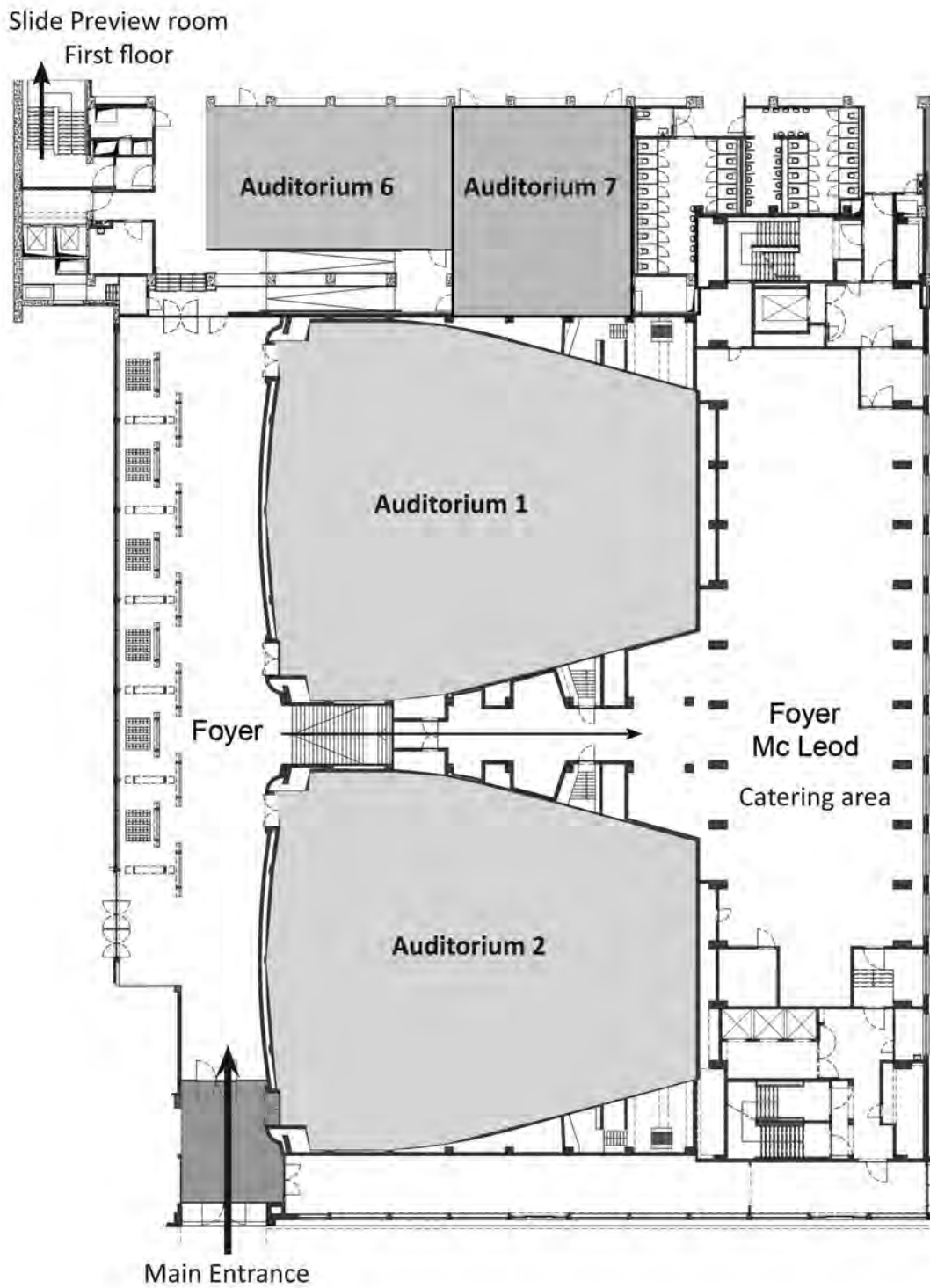
Tuesday 18 September: 09h30-18h00

Wednesday 19 September: 09h30-15h00

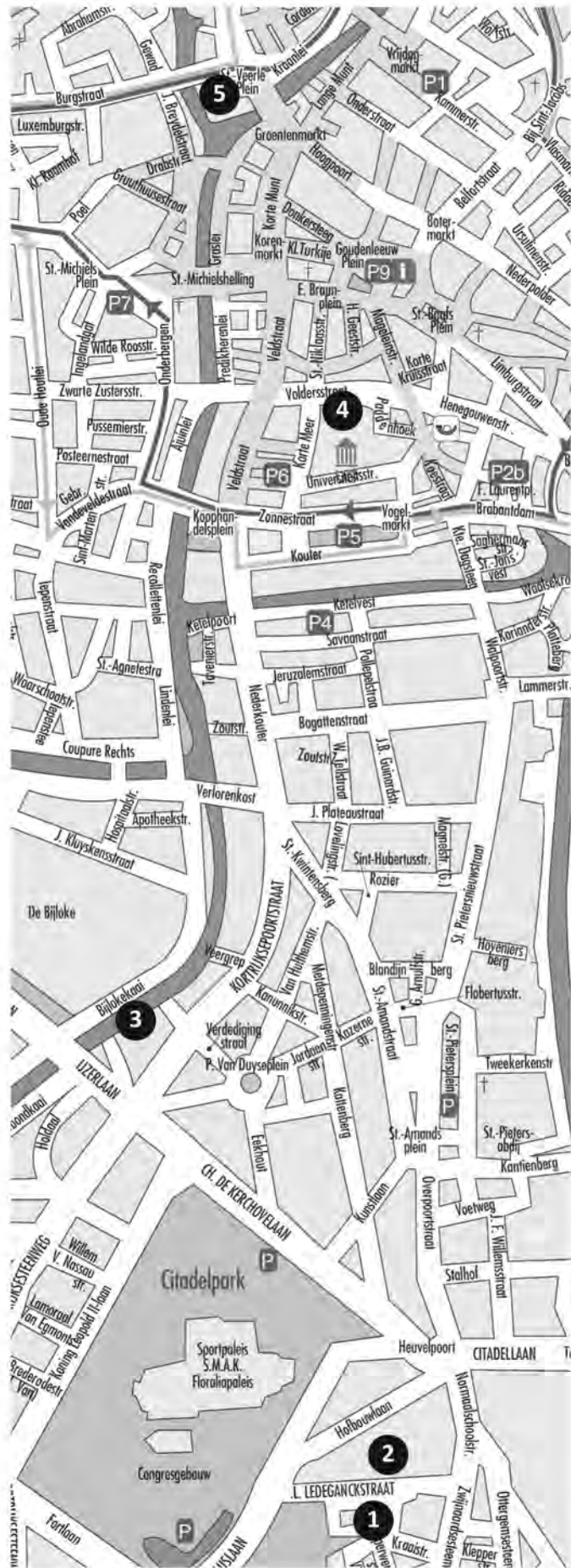
Thursday 20 September: 09h30-18h00

VENUE - Floorplan

GENERAL INFORMATION



- 1 Campus Ledeganck UGent**
Venue of EurBee 8
Address: Karel Lodewijk Ledeganckstraat 35
- 2 Campus Ledeganck HoGent**
Lunches & Poster Sessions
Address: Karel Lodewijk Ledeganckstraat 8
- 3 Social Event- Discover Ghent**
Departure point of boat trip
Address: Bijlokekaai 7
- 4 Aula Ghent University**
Opening Ceremony & Welcome Reception
Address: Volderstraat 9
- 5 Old Fish Market (Oude Vismijn)**
Congress Banquet
Address: Rekelingestraat 5





PROGRAM OVERVIEW

Monday 17 September

17h30-21h00 Registration desk

19h00-19h45 **Opening Ceremony**

19h45-21h00 **Welcome Reception**

Aula Ghent University

Aula Ghent University

Aula Ghent University



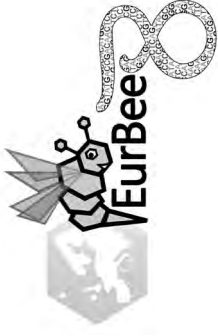
08h15 - 08h30	Welcome Address	<i>Auditorium 1</i>
08h30 - 09h30	Keynote presentation by <u>Philipp Engel</u>	<i>Auditorium 1</i>
09h30 - 12h15	Morning Sessions	<i>Campus Ledeganck UGent</i>
09h30 - 11h00	Microbiota	<i>Auditorium 1</i>
11h15 - 12h15	New Challenges in Bee-Microbe Community and Functional Ecology	<i>Auditorium 1</i>
09h30 - 12h15	Genetics 1 - Resilient Bees	<i>Auditorium 2</i>
09h30 - 12h15	Ecotoxicology 1	<i>Auditorium 6</i>
09h30 - 12h15	Where Have All the Wild Bees Gone, Long Time Passing? (BELBEES)	<i>Auditorium 7</i>
10h00 - 10h30	Coffee & Tea	<i>Mc Leod Foyer</i>
12h15 - 14h30	Lunch	<i>Campus Ledeganck HoGent</i>
13h30 - 14h30	Poster Discussion Session 1	<i>Campus Ledeganck HoGent</i>
	Pathology 1 (P001 - P044)	
	Ecotoxicology (P045 - P055)	
	Behaviour and Colony Function (P056 - P076)	
14h45 - 17h15	Afternoon Sessions	<i>Campus Ledeganck UGent</i>
14h45 - 17h15	Genetics 2	<i>Auditorium 1</i>
14h45 - 17h15	Bee Health	<i>Auditorium 2</i>
14h45 - 17h15	Ecology 1	<i>Auditorium 6</i>
16h15 - 16h45	Coffee & Tea	<i>Mc Leod Foyer</i>
17h15 - 18h15	Keynote presentation by <u>Karen Kapheim</u>	<i>Auditorium 1</i>
18h15 - 18h45	Members' Meeting	<i>Auditorium 1</i>
10h00 - 17h00	Poster Viewing	<i>Campus Ledeganck HoGent</i>
07h45 - 18h45	Registration desk	<i>Campus Ledeganck UGent</i>

Wednesday 19 September

08h15 - 08h30	Report Members' Meeting	<i>Auditorium 1</i>
08h30 - 09h30	Keynote presentation by <u>Alison Mercer</u>	<i>Auditorium 1</i>
09h30 - 12h15	Morning Sessions	<i>Campus Ledeganck UGent</i>
09h30 - 11h00	Neurobiology & Behaviour	<i>Auditorium 1</i>
11h00 - 12h00	Chemical Ecology	<i>Auditorium 1</i>
09h30 - 12h00	Genetics 3 - Resilient Bees	<i>Auditorium 2</i>
09h30 - 12h15	Pathology 1	<i>Auditorium 6</i>
09h30 - 12h15	Linking Foraging Patterns, Food Intake, Nutrition and Performance in Bees	<i>Auditorium 7</i>
10h00 - 10h30	Coffee & Tea	<i>Mc Leod Foyer</i>
12h15 - 14h00	Lunch	<i>Campus Ledeganck HoGent</i>
13h00 - 13h50	Poster Discussion Session 2	<i>Campus Ledeganck HoGent</i>
	Pathology 2 (P077 - P116)	
	Genetics (P177 - P138)	
	BeeProducts (P139 - P151)	
14h00 - 15h00	Keynote presentation by <u>Yves Le Conte</u>	<i>Auditorium 1</i>
15h00 - 18h30	Social Event - Discover Ghent	
10h00 - 15h00	Poster Viewing	<i>Campus Ledeganck HoGent</i>
08h00 - 15h00	Registration desk	<i>Campus Ledeganck UGent</i>

08h30 - 09h30	Keynote presentation by <u>Dan Hultmark</u>	<i>Auditorium 1</i>
09h30 - 12h15	Morning Sessions	<i>Campus Ledeganck UGent</i>
09h30 - 10h15	Immunity	<i>Auditorium 1</i>
10h45 - 12h15	Bee Products	<i>Auditorium 1</i>
09h30 - 12h15	Ecotoxicology 2	<i>Auditorium 2</i>
09h30 - 12h15	Pathology 2 - Virus	<i>Auditorium 6</i>
09h30 - 12h15	Studies on Colony Multiple Enemies for Bee Health	<i>Auditorium 7</i>
10h15 - 10h45	Coffee & Tea	<i>Mc Leod Foyer</i>
12h15 - 14h30	Lunch	<i>Campus Ledeganck HoGent</i>
13h15 - 14h15	Poster Discussion Session 3	<i>Campus Ledeganck HoGent</i>
	Chemical Ecology (P152 - P165)	
	Bee Health (P166 - P202)	
	Ecology (P203- P221)	
14h30 - 17h30	Afternoon Sessions	<i>Campus Ledeganck UGent</i>
14h30 - 16h00	Reproductive Biology	<i>Auditorium 1</i>
16h30 - 17h15	Evolutionary Biology	<i>Auditorium 1</i>
14h30 - 17h15	Ecology 2	<i>Auditorium 2</i>
14h30 - 17h15	Pathology 3 - Varroa	<i>Auditorium 6</i>
16h00 - 16h30	Coffee & Tea	<i>Mc Leod Foyer</i>
17h30 - 18h30	Keynote presentation by <u>Tom Wenseleers</u>	<i>Auditorium 1</i>
20h00 -	Congress Banquet	<i>Old Fish Market</i>
10h00 - 17h00	Poster Viewing	<i>Campus Ledeganck HoGent</i>
08h00 - 18h30	Registration desk	<i>Campus Ledeganck UGent</i>

PROGRAM OVERVIEW



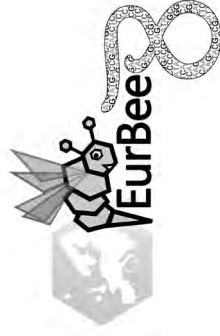
TUESDAY 18 SEPTEMBER

AUDITORIUM 1		AUDITORIUM 2		AUDITORIUM 6		AUDITORIUM 7	
Welcome Address		Parallel session 1 MICROBIOTA		Parallel session 3 ECOTOXICOLOGY 1		Symposium 1 WHERE HAVE ALL THE WILD BEES GONE, LONG TIME PASSING? (BELBEES)	
08h15							
08h30	GM1 - Honey bee gut microbiota - a versatile model for understanding microbial community evolution and functioning - Philipp Engel						
09h30							
09h30	001 - Insights into the diversity and dynamics of microbes in stingless bees (Hasselmann P.)						028 - Introduction: Where have all the wild bees gone, long time passing? (Rasmont P.)
09h45	002 - Exploring the microbiome's role in the biological invasion of the African honey bee genotype (Kowalik V.)						029 - Declining distributions for BENELUX Bumblebees: climate and land use change interactions (Marshall L.)
10h00		Coffee/Tea Break					
10h30	003 - Consequences of land-use for solitary bee microbiota composition and function (Peters B.)						030 - Extreme shift in abundance and distribution of bumblebee composition in Belgium (Rollin O.)
10h45	004 - Impact of medicaments and feed additives on the honeybee gut microbiota (Alberoni D.)						031 - Drift in distribution and quality of host-plant resources in common bumblebees (Michez D.)
11h00	005 - Pollen diversity and the microbiome; implications for honey bee health (Ferrari R.)						032 - The role of bees in interaction networks with plants as a conservation argument (Jacquemin E.)
11h15	Symposium 2 NEW CHALLENGES IN BEE-MICROBE COMMUNITY AND FUNCTIONAL ECOLOGY						033 - A century of temporal stability of genetic diversity in wild bumblebees (Maebe K.)
	006 - Immune stimulation by the gut symbiont <i>Frischella perrara</i> in the honey bee (<i>Apis mellifera</i>) (Emery O.)						034 - Viruses in wild bees: to be included in future monitoring programs (Schoonvaere K.)
11h30	007 - Lactic acid bacteria of the honey bee crop enhance adult longevity but do not provide specific defence against a microsporidian and a viral pathogen (Paxton R.)						
11h45	008 - Characterisation of the honey bee <i>Apis mellifera</i> metagenome in Britain (Regan T.)						
12h00	009 - Using contact networks and next-gen sequencing to reveal the community dynamics of the pollinator virome (Doublet V.)						
12h15 - 14h30 13h30 - 14h30							
Lunch break							
Poster Discussion Session 1: Pathology 1 (P001 - P044) Ecotoxicology (P045 - P055), Behaviour and Colony Function (P056 - P057)							

	AUDITORIUM 1 Parallel session 4 GENETICS 2	AUDITORIUM 2 Parallel session 5 BEE HEALTH	AUDITORIUM 6 Parallel session 6 ECOLOGY 1
14h45	035 - Distribution of complementary sex determiner alleles in <i>Apis mellifera</i> population (Cebriat.M.)	043 - Multi-stress effects on honey bee colonies (van Dooremalen.C.)	051 - Quantifying and modeling bee spatial strategies (Lihoreau.M.)
15h00	036 - De novo genome assembly of a western European <i>Apis mellifera mellifera</i> black bee (Vignal.A.)	044 - Impact of beekeeping management practices on honey bee mortality in Belgium (ElAgrébi.M.)	052 - Design of a spatially explicit individual-based honeybee colony model (Wallis.D.)
15h15	037 - A comprehensive genomic and morphometric assessment of European honey bee diversity and identification of SNP markers for subspecies diagnosis (Pazop.M.)	045 - Classification and prediction of stress factors and bee health using ultra high performance liquid chromatography techniques with quadrupole and orbitrap high-resolution mass spectrometry-based metabolomics (Wang.L.)	053 - Where do wild bees want to live? Biodiversity in agricultural landscapes (Krauschmer.S.)
15h30	038 - Applying a SNP-based tool for conservation of wild and managed black bees in Ireland (McCormack.G.P.)	046 - MALDI mass spectrometry imaging: an <i>in situ</i> histoproteomic approach to monitor the response of pollinators to their stressors (Bulet.P.)	054 - Community structure of bees associated with different types of floral margins (Pérez-Marcos.M.)
15h45	039 - Genetic models for long-term simulation studies in honeybee breeding (Plate.M.)	047 - Assessment of honey bee cells using deep learning (Alves.T.S.)	055 - Not the perfect match? Biogeography and pollinator shifts rather than cospeciation dominate the evolutionary history of <i>Rediviva</i> bees and their <i>Diascia</i> host plants in the Cape biodiversity hotspot (Kahnt.B.)
16h00	040 - Unraveling patterns of population structure in <i>Bombus terrestris</i> from the Iberian Peninsula and North Africa (Silva.S.E.)	048 - Beneficial microorganisms and honeybees: colony level effects of lactic acid bacterial supplements (Forsgren.E.)	056 - BumbleBEEHAVE: an agent-based population model for bumble bees and its application as a decision tool for land managers (Becher.M.A.)
16h15	Coffee/Tea Break		
16h45	041 - Signatures of selection revealed by population analyses of bumblebee genomes (Colgan.T.J.)	049 - COLOSS (prevention of honey bee Colony LOSSes): past forward (Neumann.P.)	057 - Mitogenome sequencing to study introgression events between close related subspecies of <i>Bombus terrestris</i> in the Iberian peninsula (Cejas.D.)
17h00	042 - Genomic signatures of introgression between commercial and native bumblebees, <i>Bombus terrestris</i> , in the Iberian Peninsula – implications for conservation and trade regulation (Seabra.S.G.)	050 - 10 years of coordinated study of honey bee colony loss rates – presentation of a COLOSS core project (Brod-schneider.R.)	058 - Buzzing in the buckwheat – a diverse pollinator community brings more grains to the table (Korpela.E.L.)
17h15	GENETICS - keynote lecture KN2 - Life outside the hive: What comparative genomics reveal about bee behavior, physiology, and evolution - Karen Kapheim		
18h15 - 18h45	Members' Meeting		

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WEDNESDAY 19 SEPTEMBER

AUDITORIUM 1		AUDITORIUM 2		AUDITORIUM 6		AUDITORIUM 7	
Report Members' Meeting		Parallel session 8 GENETICS 3 - RESILIENT BEES		Parallel session 9 PATHOLOGY 1		Symposium 3 LINKING FORAGING PATTERNS, FOOD INTAKE, NUTRITION AND PERFORMANCE IN BEES	
08h15							
08h30	KN3 - Using associative learning to learn about brain health and bees - Alison Mercer						
09h30	Parallel session 7 NEUROBIOLOGY & BEHAVIOUR						
09h30	059 - <i>In vivo</i> imaging of neonicotinoid influence on odour processing in the honeybee brain (Haase A.)	067 - Comparison of hygienic behavior directed against <i>Varroa destructor</i> and <i>Tropilaelaps</i> sp. (Wegener L.)	075 - Unbiased random mutagenesis contributes to a better understanding of the virulent behaviour of <i>Pseudaecillus larvae</i> (De Smet L.)				084 - Bees rely on their sense of taste to assess pollen nutritional composition (Ruedenauer E.A.)
09h45	060 - Honey bee waggle dance communication benefits pollen foraging (Nürnbergger F.)	068 - Explaining the resistance to <i>Varroa destructor</i> in the French honey bee population with VSH, SMR and colony dynamic data (Eynard S.E.)		076 - Canada-wide surveillance of exotic pathogens: <i>Lotmaria passim</i> and <i>Cirithidia mellificae</i> (Borba R.S.)			085 - Sex-dependent nutrient demand is reflected in pollen supplied to larvae by mother of a generalist solitary bee <i>Osmia bicornis</i> (Ellispiak M.)
10h00		Coffee/Tea Break					
10h30	061 - Observations of honey bee wing movements with the use of a high-speed camera (Toftiski A.)	069 - Preliminary researches regarding the efficiency of the formic acid treatment on <i>Varroa (Varroa destructor)</i> found in the artificially decapped bee brood (Siceanu A.)		077 - <i>Nosema ceranae</i> and <i>Lotmaria passim</i> : partners in crime? (MacInnis C.L.)			086 - Temporal disruption in flowers availability affects honeybee colony losses (Requier F.)
10h45	062 - The effect of absolute and relative amounts of omega-3 and omega-6 essential fatty acids on associative learning in honey bees (Arien Y.)	070 - Hygienic behaviour, <i>Varroa</i> and <i>Mosema</i> levels of Africanized honeybee colonies in Alagoas State, Northeastern Brazil (Beelen R.)		078 - Factors influencing the development and the course of the <i>N. ceranae</i> infection in <i>Apis mellifera iberiensis</i> (Urbieja A.)			087 - Pollen protein content drives bee community preference for an invasive thistle over five native plant species (Russo L.)
11h00	Parallel session 10: CHEMICAL ECOLOGY 063 - Chemical Communication and improved tools for hygienic selection in the honey bee, <i>Apis mellifera</i> (Waggoner K.)	071 - Identification of the DNA variants associated with the hygienic trait of honey bees (Farajzadeh L.)		079 - Effect of <i>Nosema ceranae</i> on dynamic communities of gut bacteria in native species of Thai honey bees (Naree S.)			088 - How larval food quantities affect caste-fate in the stingless bee <i>Scaptotrigona depilis</i> (Buchholz J.)
11h15	064 - Antibiotics, sex and social regulation - the role of C10 short chain fatty acids in honey bee biology (Crews R.M.)	072 - Combining elastic-net penalized regression and whole exome sequencing to identify phenotype-associated variants (Broeckx B.J.G.)		080 - Tracking Asian hornets (<i>Vespa velutina</i>) to their nests with radio-telemetry (Kennedy P.)			089 - Honeybees tolerate cyanogenic glucosides from clover nectar and flowers (Jensen A.B.)
11h30	065 - Exposure of Nasonov gland by flying foragers of honey bee (Toftiski A.)	073 - Progress in marker-assisted selection for honey bee breeding (Pernal S.F.)		081 - Effect of <i>Nosema ceranae</i> on energetic stress of trehalose level in haemolymph and infection ratio of giant honey bee (Suwannapong G.)			090 - The feeding with glandular secretions protects honey-bee larvae from toxic pyrrolizidine alkaloids present in pollen (Kast C.)
11h45	066 - Eat me or not- deciphering the molecular signals of diploid drone selection in the honey bee <i>Apis mellifera</i> (Gessler B.)	074 - A Canadian perspective on marker assisted selection and growing the local queen supply (Guarino M.M.)		082 - Oxidative stress increases in honey bees infected with <i>Lotmaria passim</i> (Stevanović J.)			091 - New protocols to study nectar foraging in honey bees (Sokolowski M.)
12h00				083 - Haplod males are more susceptible: spillover of <i>Cirithidia mellificae</i> from managed honey bees to wild bees (<i>Osmia cornuta</i>) (Strobl V.)			092 - Bees and resin, resin and bees: insights into an under-rated resource (Leomhardt S.D.)
12h15 - 14h00 13h00 - 13h50	Lunch break						
14h00	Poster Discussion Session 2: Pathology 2, (P077 - P116) Genetics (P117 - P138), Bee Products (P139 - P151)						
	CHEMICAL ECOLOGY- Keynote lecture KN4 - State of the art in honeybee chemical ecology - Yves Le Conte						
15h00 - 18h30	Social Event - Discover Ghent						



THURSDAY 20 SEPTEMBER

	INNATE IMMUNITY - Keynote lecture KN5 - Nutrition and immunity – a systemic response to infection in the insect model, <i>Drosophila melanogaster</i> . Dan Hultmark	AUDITORIUM 2 Parallel session 12 ECOTOXICOLOGY 2	AUDITORIUM 6 Parallel session 13 PATHOLOGY 2 - VIRUS	AUDITORIUM 7 Symposium 4 STUDIES ON COLONY MULTIPLE ENEMIES FOR BEE HEALTH
08h30				
09h30	Parallel session 11 IMMUNITY	102 - Synergistic effects of stressors on bee health: pesticides, nutrition, and behaviour (Tosi.S.) 103 - Imidacloprid diffusion route: from apple orchard to the honey bee colony matrices (Fontana.P.)	111 - Two deformed wing virus variants, genotypes A and B, cause low pupal mortality and a high frequency of wing deformities in metamorphosing honey bees (<i>Apis mellifera</i>) (Paxton.R.J.) 112 - Using an in vitro feeding system to investigate Varroa-vectored DWV variant transmission (Bradford.E.L.)	120 - European-wide analysis of <i>Paenibacillus larvae</i> genetic diversity: EuroPLarva (Sircoulomb.E.) 121 - Health status and factors identified for winter losses of honey bee colonies by the Austrian surveillance study 2015/2016 (Morawetz.L.)
09h45	093 - Single von Willebrand factor C proteins and its role in insect immunity (Meeus.L.) 094 - Study of gene expression of immunologically important molecules in honey bees after application of probiotic preparation (Matusčáková.L.)			
10h00		Coffee/Tea Break		
10h30	095 - On mechanisms of trans-generational immune priming in honeybees (Freitag.D.)	104 - Chronic toxicity of select pesticides to honey bee (<i>Apis mellifera</i> L.) larvae reared in vitro (Ellis.J.D.) 105 - The homing flight ring test: method to assess the effects of sublethal doses of pesticides on the honey bee in field conditions (Fourrier.L.)	113 - Europe-wide diversity of Deformed wing virus variants (Sircoulomb.E.) 114 - Healthy honey bees - a analysis of the virus population to assess rational Varroa control (Woodford.L.)	122 - Should Varroosis include honeybee viruses as causative agents? (Schafer.M.O.) 123 - The yellow-legged hornet: its impact on European western honeybees and control methods (Pointeau.S.)
10h45	Parallel session 14 BEE PRODUCTS 096 - Alarming situation on the EU beeswax market: the prevalence of adulterated beeswax material and related safety issues (Svečnjak.L.) 097 - Effect of beeswax adulterated with stearin on the development of worker bee brood: results of a field trial (Reybroeck.W.)	106 - Lazy Spring: pollen-bound pesticide mixtures make bees less efficient (Prado.A.) 107 - Versatile stressor impact analysis by video observation of worker behavior and brood development within cells reveals neonicotinoid effects at field realistic concentrations (Stefert.P.)	115 - Virome analysis on Belgian honeybees reveals multiple undescribed viruses, including a diverse bacteriophage population (Deboutte.W.) 116 - Apis Rhabdovirus 1, a negative-sense RNA virus present in populations of pollinators, replicates in <i>Apis mellifera</i> and <i>Varroa destructor</i> (Chajamovsky.N.)	124 - Insights into honey bee pathogen and parasite dynamics and interactions using high-throughput analysis (DAWise.P.) 125 - Small hive beetle invasion risk under current and future climate scenarios: a modelling approach to foster mitigation efforts (Comelissen.B.)
11h00	098 - Effect of spatial allocation of nectar cells on storage and honey ripening dynamics in the honeybee <i>Apis mellifera</i> (Eyer.M.)	108 - Pharmacokinetic and molecular investigations providing insights into the honey bee-friendly profile of the butenolide insecticide flupyradifurone (SVANTO prime®) (Zaworra.M.) 109 - Pesticide residues in bee bread from the national honey bee disease survey (Traynor.K.)	117 - A natural product inhibited the replication and expression of Israeli acute paralysis virus (Hou.C.) 118 - Constructing infectious Sacbrood virus clone with green fluorescence protein expression (Huang.W.F.)	126 - Survey of wild bee communities threatened by <i>Vespa velutina</i> (Mamino.A.) 127 - Patterns of <i>Vespa velutina</i> invasion in western Iberia and Italy as revealed by molecular markers (Quaresima.A.)
11h15	099 - Culturing and conserving of stored pollen on the way into beebread (Božič.J.) 100 - Sugar, amino acids, and inorganic ion profiling of honeydew from aphid species hosting different tree species in Germany (Shaaban.B.)	110 - Gene expression profiling demonstrates that exposure to neonicotinoid pesticides affects multiple biological processes in bumblebees (<i>Bombus terrestris</i>) (Colgan.T.J.)	119 - Relevance of qualitative and quantitative changes in the virome to the survival of a Swedish <i>Varroa</i> -resistant honeybee population (de Miranda.J.R.)	Discussion
11h30				
11h45				
12h00	101 - Genuine Manuka honey!? - State of the art (Beitlich.N.)			
12h15 - 14h30 13h15 - 14h15		Lunch break		
		Poster Discussion Session 3: Chemical Ecology (P152 - P165), Bee Health (P166 - P202), Ecology (P203 - P221)		

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	AUDITORIUM 1 Parallel session 15 REPRODUCTIVE BIOLOGY	AUDITORIUM 2 Parallel session 16 ECOLOGY 2	AUDITORIUM 6 Parallel session 17 PATHOLOGY 3- VARROA
14h30			
14h30	128 - Reproductive success in European orchard bee <i>Osmia cornuta</i> (Hymenoptera: Megachilidae) influenced by the number of males (Stanislavjević L.)	138 - Floral landscape enrichment and semi-natural habitats improve honeybee health, as evidenced by a 'Landscape physiology' approach (Alaux C.)	148 - <i>Varroa destructor</i> feeds primarily on honey bee fat body tissue not hemolymph (Ramsey S.D.)
14h45	129 - Differential circular RNAs expression in ovary during oviposition in honey bees (Shi W.)	139 - Influence of major stresses on wild bees communities in an urban environment (Weekers I.)	149 - <i>Varroa</i> mite saliva contains bioactive factors that aid mite feeding and manipulate the honeybee immune response (Campbell E.M.)
15h00	130 - Influence of DMSO with dextran, PVP or PEG in freezing extender on queens (Çakmak I.)	140 - The application of non-intrusive electronic bee hive monitoring to field studies (Evans H.A.)	150 - Hormonal induction of in vitro egg production in the honeybee mite, <i>Varroa destructor</i> (Christie C.R.)
15h15	131 - Queen temperature stress decreases sperm viability, queen performance, and colony productivity (Guama M.M.)	141 - Changes in bumble bee species diversity and abundance over 50 years on red clover fields in Estonia (Karise R.)	151 - Transcriptome profiling of the parasite <i>Varroa destructor</i> provides new biological insights into the mite adult life cycle (Mondet F.)
15h30	132 - Observations of the mating behaviour of <i>Apis mellifera macedonica</i> and <i>Apis mellifera cecropia</i> under natural conditions and under conditions of a control mating system (the Train of Virgin Queens) (Hajjina F.)	142 - European beech forests as a home for feral honey bee colonies (Rutschmann B.)	152 - Early <i>Varroa</i> infection transcriptomics in the Asian honey bee (Routtu J.)
15h45	133 - Preservation of domesticated honey bee (Hymenoptera: Apidae) drone semen (Giovenazzo P.)	143 - Potential role of wetlands for honey bees diversity, population density and conservation in Sudan (Lattorff M.G.H.)	153 - Lithium salts as varroacide - efficacy in the treatment of artificial swarms and side effects on bees and brood (Ziegelmann B.)
16h00	Coffee/Tea Break		
16h30	Parallel session 18 EVOLUTIONARY BIOLOGY	144 - Do floral traits play a role in animal plant interaction? A study case with orchid bees (Boff S.)	154 - Using RNAi to control <i>Varroa destructor</i> – a novel biopesticidal tool for effective control of the parasitic mite of honey bees (Verhaert L.)
16h45	134 - Experimental evolution of parasite virulence in a eusocial insect (Lattorff H.M.G.)	145 - Are non-native plants a valuable resource for wild bees? (Seitz N.)	155 - Kairomones in the hive involves in <i>Varroa destructor</i> mite behavior (Pojar-Fenesan M.)
16h45	135 - Evolution of new gene functions by gene duplications - the case of major royal jelly proteins in the honey bee (Buttstedt A.)	146 - Landscape related plant and resource diversity increases foraging and colony fitness in a tropical social bee (Kaluza B.)	156 - Reproduction of the mite <i>Varroa destructor</i> in original and new honey bee hosts (Page P.)
17h00	136 - Overview of the southwest Indian ocean honeybee: combining morphometry and genetics to investigate the original diversity of <i>Apis mellifera</i> spp. in Madagascar and surrounding archipelagos (Galataud J.)	147 - Response of wild bee diversity and functional traits to vineyard management and landscape diversity across Europe (Kratschmer S.)	157 - Tracking genomic footprints of successful host switches in honey bee <i>Varroa</i> mites (Techer M.)
17h15	137 - Genetic basis for the evolution of non-reproduction of <i>Varroa destructor</i> in populations of <i>Apis mellifera</i> (Conlon B.H.)		
17h30 -18h30	EVOLUTIONARY BIOLOGY - Keynote lecture KN6 - Social bees as model systems in the study of the evolution of cooperation and conflict - Tom Wenseleers		
20h00-	Congress Banquet		



SCIENTIFIC INFORMATION

Information for Oral Presenters

Oral / Symposium presenters are asked to load/check their presentation at least 4 hours prior to their session commencing to ensure the presentation is checked and tested. When you have to present on the first day, please load/check your presentation immediately upon your arrival.

The speakers' corner is located at the first floor of the venue and will be open on:

- Tuesday 18 September: 07h45-18h00
- Wednesday 19 September: 08h00-13h30
- Thursday 20 September: 08h00-17h00

- Speakers are requested to come to the meeting room at least 5 minutes prior to the start of the session and identify themselves to the chair.
- Presenters must take place at seats in front of the room for the duration of the session.
- In the interests of fairness, please ensure that you keep to your allotted time frame. The chair will time your presentation and provide you with a warning at 2 minutes remaining and when time is up.

Oral presentations are allocated 13 minutes (10-minutes presentation time and 3 minutes question and answer time)

Instructions for Poster Presenters

Poster boards will be located in Campus Ledeganck of HoGent.

Posters will only be displayed for **ONE (1) day**. Please ensure that your poster is displayed on the correct poster board. Please ensure that you collect your poster at the conclusion of the day your poster was on display. Posters left behind at the conclusion of the congress will be discarded.

Posters are allocated into different sessions:

- Poster session 1 is scheduled on Tuesday 18 September
 - Posters should be mounted on Tuesday (18 September) before 09h30 and left on display till 17h00 (posters must be removed at 18h00 at the latest)
- Poster session 2 is scheduled on Wednesday 19 September
 - Posters should be mounted on Wednesday (19 September) before 09h30 and left on display till 17h00 (posters must be removed on Thursday 20 September at 09h00 at the latest)
- Poster session 3 is scheduled on Thursday 20 September
 - Posters should be mounted on Thursday (20 September) between 09h00 and 09.h0 and left on display till 17h00 (posters must be removed at 18h00 at the latest)

Poster Discussion Sessions

Presenting authors are asked to attend their poster during the Poster Discussion Sessions, as indicated here:

For Poster Session 1 (P001-P076) on Tuesday 18 September	13h30 - 14h30
For Poster Session 2 (P077-P151) on Wednesday 19 September	13h00 - 13h50
For Poster Session 3 (P152-P221) on Thursday 20 September	13h15 - 14h15



SCIENTIFIC PROGRAM

Tuesday 18 September 2018

Plenary Session

AUDITORIUM 1

08h15 *Welcome Address*
Dirk de Graaf, Congress chair EurBee 8

08h30 KN1 **Keynote 1**
Honey bee gut microbiota - a versatile model for understanding microbial community evolution and functioning
Philipp Engel

Morning Sessions



09h30 - 11h15 Parallel Session 1 MICROBIOTA

AUDITORIUM 1

Moderators: Ivan Meeus & Raquel Marin Hernandez

09h30 001 *Insights into the diversity and dynamics of microbes in stingless bees*
Nunes-Silva C.G., Nacif-Marçal L., Fialho M.C.Q., D'Alvise P., Hasselmann M. (Stuttgart, Germany)

09h45 002 *Exploring the microbiome's role in the biological invasion of the African honey bee genotype*
Kowallik V., Suenaga M., Rangel J., Mikheyev A.S. (Okinawa, Japan)

10h00 *Coffee & Tea*

10h30 003 *Consequences of land-use for solitary bee microbiota composition and function*
Peters B., Leonhardt S.D., Keller A., Schloter M. (Würzburg, Germany)

10h45 004 *Impact of medicaments and feed additives on the honeybee gut microbiota*
Alberoni D., Baffoni L., Gaggia F., Stanton C., Ross P., Di Gioia D. (Bologna, Italy)

11h00 005 *Pollen diversity and the microbiome; implications for honey bee health*
Ferrari R., Browne K.A., Voulgari-Kokota A., NIHBS, Keller A., McCormack G.P. (Galway, Ireland)



11h15 - 12h15 Symposium 2 NEW CHALLENGES IN BEE-MICROBE COMMUNITY AND FUNCTIONAL ECOLOGY

AUDITORIUM 1

Moderators: Benjamin Dainat & Vincent Doublet

11h15 006 *Immune stimulation by the gut symbiont *Frischella perrara* in the honey bee (*Apis mellifera*)*
Emery O., Schmidt K., Engel P. (Lausanne, Switzerland)

11h30 007 *Lactic acid bacteria of the honey bee crop enhance adult longevity but do not provide specific defence against a microsporidian and a viral pathogen*
Disayathanoowat T., Vásquez A., Olofsson T., Natsopoulou M., Doublet V., McMahon, D., Paxton R.J. (Halle, Germany)

11h45 008 *Characterisation of the honey bee *Apis mellifera* metagenome in Britain*
Regan T., Barnett M.W., Laetsch D.R., Wragg D., Bush S.J., The BeeBiome Consortium, Blaxter M.,
 Freeman T.C. (Edinburgh, UK)

12h00 009 *Using contact networks and next-gen sequencing to reveal the community dynamics of the
 pollinator virome*
Doublet V., Doyle T., Brown M.J.F., Wilfert L. (Edinburgh and Penryn, UK)



09h30 - 12h15 Parallel Session 2
GENETICS 1 - RESILIENT BEES

Moderators: Cédric Alaux & Samuel Boff



AUDITORIUM 2

09h30 010 *Field testing and selection on European honey bee populations (Smartbees project 2015-2018)*
Büchler R., Uzunov A., Hoppe A., Bienefeld K. (Kirchhain, Germany)

09h45 011 *Mite adaptations in European *Apis mellifera* populations surviving *Varroa destructor* by means of
 natural selection?*
Moro A., Le Conte Y., Neumann P., de Miranda J.R., Locke-Grandér B., Dahle B., Blacquièrre T.,
 Beaufrepaire A. (Bern, Switzerland)

10h00 *Coffee & Tea*

10h30 012 *Investigations into unmanaged honey bee colonies in Ireland*
Browne K.A., Henriques D., Hassett J., Geary M., Moore E., Pinto M.A., McCormack G.P. (Galway,
 Ireland)

10h45 013 *Black box selection leads to distinct traits of resistance to *Varroa destructor* in honeybees*
Blacquièrre T., Boot W., Calis J., Van Stratum P. (Wageningen, The Netherlands)

11h00 014 *The good, the bad and the ugly – dissecting *Apis mellifera* survivability to *Varroa destructor**
Beaufrepaire A., Alaux C., Crauser D., Dalmon A., Diévarit V., Mondet F., Pioz M.,
 Le Conte Y. (Avignon, France)

11h15 015 *Breeding of *Apis cerana*: resistance of Sacbrood virus*
Choi Y.S., Vung N.N., Lee M-L., Lee M-Y., Kim H.K., Kim J.E. (Wanju-gun, South Korea)

11h30 016 *Tolerance to Deformed wing virus at the individual and colony level in Swedish mite-resistant honey
 bees*
Locke B., Thaduri S., Stephan J., de Miranda J.R. (Uppsala, Sweden)

11h45 017 *The Lord of the Rings: genotype-environment interactions for honey bee colonies surviving *Varroa*
destructor by means of natural selection*
Neumann P., Oddie M.A.Y., Beaufrepaire A., Blacquièrre T., Conlon B.H., Crauser D., Dahle B., Frey E.,
 de Graaf D.C., Häußermann C., de Smet L. (Bern, Switzerland)

12h00 018 *BeeStrong: towards a genomic tool for the selection of *Varroa* resistant honey bees*
Sann C., Poquet Y., Basso B., Mondet F., Eynard S., Servin B., Phocas F., Guillaume F., Bidanel J.P.,
 Cluzeau-Moulay S. (Jouy-en-Josas, France)



**09h30 - 12h15 Parallel Session 3
ECOTOXICOLOGY 1**

AUDITORIUM 6

Moderators: Wim Reybroeck & Tjeerd Blacquière

- 09h30 019 *EU-wide restrictions on neonicotinoids have not entirely eliminated the risk for honeybees foraging on oilseed rape nectar*
Wintermantel D., Odoux J-F., Decourtye A., Henry M., Allier F., Bretagnolle V. (Surgères and Villiers-en-Bois, France)
- 09h45 020 *Time-to-death approach to reveal chronic and cumulative toxicity of a fungicide for honeybees not revealed with the standard ten-day test*
Simon-Delso N., San Martin G., Bruneau E., Hautier L. (Louvain la Neuve, Belgium)
- 10h00 *Coffee & Tea*
- 10h30 021 *Effects of neonicotinoids on honey bee food glands*
Bruckner S., Straub L., Villamar-Bouza L., Neumann P., Williams G. (Auburn, USA)
- 10h45 022 *The sublethal effects of clothianidin on the honey bee gut microbiota*
El Khoury S., Giovenazzo P., Derome N. (Québec, Canada)
- 11h00 023 *Co-exposure to virus and pesticide (Deformed wing virus / neonicotinoid) alters bee behavioural performances*
Coulon M., Dalmon A., Prado A., Di Prisco G., Alaux C., Crauser D., Dubois E., Thiéry R., Ribière-Chabert M., Le Conte Y. (Avignon and Sophia-Antipolis, France)
- 11h15 024 *The effects of neonicotinoids on circadian rhythms in honey bees*
Allain C., Sokolowski M. (Amiens, France)
- 11h30 025 *Chronic exposure to thiamethoxam can promote chronic bee paralysis virus infections in honey bees*
Coulon M., Schurr F., Martel A-C., Di Prisco G., Dalmon A., Alaux C., Le Conte Y., Thiéry R., Dubois E. (Sophia Antipolis, France)
- 11h45 026 *Sublethal exposure to the neonicotinoid insecticide thiacloprid impairs the immune defence in the solitary bee species Osmia bicornis L.*
Brandt A., Hohnheiser B., Sgolastra F., Bosch J., Meixner M.D., Büchler R. (Kirchhain, Germany)
- 12h00 027 *Effects of neonicotinoids on the behavior of foraging honey bees with artificial flower choices*
Çakmak I., Hranitz J.M., Blatzheim L., Bower C.D., Polk T., Levinson B., Wells H. (Bursa, Turkey)



**09h30 - 11h45 Symposium 1
WHERE HAVE ALL THE WILD BEES GONE, LONG TIME PASSING?
(BELBEES)**

AUDITORIUM 7

Moderators: Pierre Rasmont & Orianne Rollin

- 09h30 028 *Where have all the wild bees gone, long time passing ?*
Rasmont P., Boevé J-L., Francis F., Dendoncker N., Dufrêne M., Smagghe G., Barbier Y., Brasero N., D'Haeseler J., Dekoninck W., Desmet L., Foschweiller M., Jacquemin F., Maebe K., Marshall L., Martinet B., Meeus I., Michez D., Moerman R., Pauly A., Roger N., Schoonvaere K., Vanderplanck M., Van Ormelingen P., Vray S., de Graaf D.C. (Mons, Belgium)

- 09h45 029 *Declining distributions for BENELUX Bumblebees: climate and land use change interactions*
Marshall L., Biesmeijer J.C., Rasmont P., Vereecken N.J., Dvorak L., Fitzpatrick U., Francis F., Neumayer J., Ødegaard F., Paukkunen J.P.T.¹, Pawlikowski T., Reemer M., Roberts S.P.M., Straka J., Vray S., Dendoncker N. (Namur, Belgium and Leiden, The Netherlands)
- 10h00 *Coffee & Tea*
- 10h30 030 *Extreme shift in abundance and distribution of bumblebee composition in Belgium*
 Vray S., Rollin O., Michez D., Dendoncker N., Rasmont P. (Gembloux, Belgium)
- 10h45 031 *Drift in distribution and quality of host-plant resources in common bumblebees*
Michez D., Roger N., Moerman R., Vanderplanck M. (Mons, Belgium)
- 11h00 032 *The role of bees in interaction networks with plants as a conservation argument*
Jacquemin E., Violle C., Munoz F., Mahy G., Rasmont P., Michez D., Vereecken N.J., Roberts S.P.M., Vray S., Dufrêne M. (Gembloux, Belgium and Montpellier, France)
- 11h15 033 *A century of temporal stability of genetic diversity in wild bumblebees*
Maebe K., Meeus I., Vray S., Dekoninck W., Boevé J-L., Rasmont P., Smaghe G. (Ghent, Belgium)
- 11h30 034 *Viruses in wild bees: to be included in future monitoring programs*
Schoonvaere K., Francis F., de Graaf D.C. (Ghent, Belgium)

Afternoon Sessions

- 14h45 - 17h15 Parallel Session 4** **AUDITORIUM 1**
GENETICS 2
 Moderators: Guy Smaghe & Katarina Bilikova
- 14h45 035 *Distribution of complementary sex determiner alleles in *Apis mellifera* population*
 Zareba J., Blazej P., Laszkiewicz A., Sniezewski L., Majkowski M., Janik S., Cebzat M. (Wroclaw, Poland)
- 15h00 036 *De novo genome assembly of a western European *Apis mellifera mellifera* black bee*
Vignal A., Eynard S.E., Klopp C., Canale-Tabet K., Marande W., Roulet A., Donnadiou C., Servin B. (Castanet Tolosan, France)
- 15h15 037 *A comprehensive genomic and morphometric assessment of European honey bee diversity and identification of SNP markers for subspecies diagnosis*
Parejo M., Montes I., Bouga M., Estonba A., Papoutsis L., Nielsen R.O., Momeni J., Langa J., Vingborg R., Kryger P., Meixner M. (Leioa, Spain and Bern, Switzerland)
- 15h30 038 *Applying a SNP-based tool for conservation of wild and managed black bees in Ireland*
 Browne K.A., Henriques D., Pinto M.A., Native Irish Honeybee Society, McCormack G.P. (Bragança, Portugal)
- 15h45 039 *Genetic models for long-term simulation studies in honeybee breeding*
Plate M., Bernstein R., Hoppe A., Bienefeld K. (Hohen Neuendorf, Germany)

- 16h00 040 *Unraveling patterns of population structure in *Bombus terrestris* from the Iberian Peninsula and North Africa*
Silva S.E., Seabra S.G., Carvalheiro L.G., Nunes V.L., Marabuto E., Mendes R., Rodrigues A.S.B., Laurentino T.G., Paulo O.S. (Lisbon, Portugal)
- 16h15 *Coffee & Tea*
- 16h45 041 *Signatures of selection revealed by population analyses of bumblebee genomes*
Colgan T.J., Arce A.N., Gill R.J., Ramos-Rodrigues A., Li L., Kanteh A., Wurm Y. (London, UK and Cork, Ireland)
- 17h00 042 *Genomic signatures of introgression between commercial and native bumblebees, *Bombus terrestris*, in the Iberian Peninsula – implications for conservation and trade regulation*
Seabra S.G., Silva S.E., Nunes V.L., Sousa V.C., Martins J., Pina-Martins F., Rebelo M.T., Figueiredo E., Paulo O.S. (Lisbon, Portugal)



14h45 - 17h15 Parallel Session 5
BEE HEALTH

AUDITORIUM 2

Moderators: Anne Dalmon & Dennis VanEngelsdorp

- 14h45 043 *Multi-stress effects on honey bee colonies*
van Dooremalen C., van Langevelde F., Blacquière T. (Wageningen, The Netherlands)
- 15h00 044 *Impact of beekeeping management practices on honey bee mortality in Belgium*
El Agrebi N., Danneels E., de Graaf D.C., Saegerman C. (Liège, Belgium)
- 15h15 045 *Classification and prediction of stress factors and bee health using ultra high performance liquid chromatography techniques with quadrupole and orbitrap high-resolution mass spectrometry-based metabolomics*
Wang L., Smaghe G., Meeus I. (Ghent, Belgium)
- 15h30 046 *MALDI mass spectrometry imaging: an in situ histoproteomic approach to monitor the response of pollinators to their stressors*
Bulet P., Arafah K., Voisin S., Houdelet C., Bocquet M. (La Tronche and Archamps, France)
- 15h45 047 *Assessment of honey bee cells using deep learning*
Alves T.S., Ventura P., Neves C.J., Candido Junior A., De Paula Filho P.L., Pinto M.A., Rodrigues P.J. (Bragança, Portugal)
- 16h00 048 *Beneficial microorganisms and honeybees: colony level effects of lactic acid bacterial supplements*
Stephan J.G., Lamei S., Pettis J.S., Riesbeck K., de Miranda J.R., Forsgren E. (Uppsala, Sweden)
- 16h15 *Coffee & Tea*
- 16h45 049 *COLOSS (prevention of honey bee Colony LOSSes): past forward*
Neumann P., Williams G., Chantawannakul P., The COLOSS consortium (Bern, Switzerland)
- 17h00 050 *10 years of coordinated study of honey bee colony loss rates – presentation of a COLOSS core project*
Brodtschneider R., Gray A.J., COLOSS C.P. (Graz, Austria)


**14h45 - 17h15 Parallel Session 6
ECOLOGY 1**
AUDITORIUM 6

Moderators: Robert Brodschneider & Norman Carreck

- 14h45 051 *Quantifying and modeling bee spatial strategies*
Dubois T., Pasquaretta C., Gautrais J., Dore A., Aubert H., Lihoreau M. (Toulouse, France)
- 15h00 052 *Design of a spatially explicit individual-based honeybee colony model*
Wallis D. Hatjina F. Jensen A., Simon-Delso N., Skov F., Topping C. (Rønne, Denmark)
- 15h15 053 *Where do wild bees want to live? Biodiversity in agricultural landscapes*
Kratschmer S., Ockermüller E., Neumayer J., Hainz-Renetzeder C., Frank T., Pascher K., Pachinger B. (Vienna, Austria)
- 15h30 054 *Community structure of bees associated with different types of floral margins*
Pérez-Marcos M., Ortiz-Sánchez F.J., López-Gallego E., Ramírez-Soria M.J., Sanchez J.A. (Murcia, Spain)
- 15h45 055 *Not the perfect match? Biogeography and pollinator shifts rather than cospeciation dominate the evolutionary history of *Rediviva* bees and their *Diascia* host plants in the Cape biodiversity hotspot*
Kahnt B., Hattingh W.N., Theodorou P., Wieseke N., Kuhlmann M., Glennon K.L., van der Niet T., Paxton R.J., Cron G.V. (Halle and Leipzig, Germany)
- 16h00 056 *Bumble-BEEHAVE: an agent-based population model for bumble bees and its application as a decision tool for land managers*
Becher M.A., Twiston-Davies G., Osborne J.L. (Toronto, Canada and Penryn, Cornwall, UK)
- 16h15 *Coffee & Tea*
- 16h45 057 *Mitogenome sequencing to study introgression events between close related subspecies of *Bombus terrestris* in the Iberian peninsula*
Cejas D., López-López A., Ornos C., De la Rúa P., Muñoz I. (Murcia, Spain)
- 17h00 058 *Buzzing in the buckwheat – a diverse pollinator community brings more grains to the table*
Korpela E-L., Hokkanen H., Jaš S., Martikkala M., Toratti S. (Helsinki, Finland)

Plenary session
AUDITORIUM 1

- 17h15 KN2 **Keynote 2**
Life outside the hive: What comparative genomics reveal about bee behavior, physiology, and evolution
Karen Kapheim
- 18h15 *Members' Meeting*

 **PATHOLOGY 1 (P001 - P044)**

- P001 Deformed wing virus variant strains in the Indigenous and exotic honey bee in Saudi Arabia
- P002 The German bee monitoring (DeBiMo): report 2016/ 2017
- P003 Prevalence of protozoan parasites in *Vespa velutina* and in native European Hymenoptera (Vespoidea, Apoidea) from Galiza (NW-Iberian Peninsula)
- P004 Impact of nutritional stress on colony strength and pathogen infection
- P005 Does feeding pollen substitutes impact honey bee (*Apis mellifera*) colony strength parameters and *Nosema* infections?
- P006 Toward a novel diagnostic tool for the selection of varroa-sensitive hygiene honey bee colonies
- P007 Virus prevalence across sympatric field samples of *Apis mellifera* and *Bombus* species
- P008 Transmission via hive products: globalization of the honey bee virosphere?
- P009 Validation of three Real-Time PCR assays for the rapid differentiation of *Aethina tumida* from other *Nitidulidae* (Coleoptera) species
- P010 Identification of honeybee colonies infected by *Paenibacillus larvae* through the powdered sugar examination
- P011 Artificial brood interruption associated to the winter Varroa treatment
- P012 *Nosema ceranae* found in the abdomens of small hive beetle (*Aethina tumida*) imagoes
- P013 Histological features of the larvae of *Apis mellifera* on day 5 fed with toxic nectar in vitro
- P014 Deformed wing virus variants in *Varroa destructor* susceptible and tolerant honey bee colonies
- P015 Detection of viruses in virgin and mated queens of the honey bee *Apis mellifera* L.
- P016 Inhibition of growth of *Paenibacillus larvae* by bacteriocin from *Brevibacillus laterosporus*
- P017 Nosemosis control in European honey bees *Apis mellifera* by silencing the gene encoding *Nosema ceranae* polar tube protein 3
- P018 Main pathogens in bumblebee species from Spain
- P019 Comparative analysis of PCR protocols to detect bee trypanosomatids
- P020 Bee pathogens colonizing bee gums
- P021 A survey of the different Varroa control methods used in Scotland and their efficacy
- P022 Study of some pathogens in bumblebees and honeybees at four different locations in Slovenia
- P023 BeeTyping™, an approach for monitoring bee health inspired from clinical microbiology biotyping
- P024 Sanitary impacts and virus diversity in *Apis mellifera unicolor* population on Reunion Island, one year after *Varroa destructor* first detection
- P025 The *Tropilaelaps* mites threat: an examination of the injuries inflicted on *Apis mellifera* host
- P026 Field tests of the new varroacide VarroMed® in honey bee colonies with brood in late summer and autumn
- P027 Biofilm formation of an Iranian isolate *Paenibacillus larvae*, the etiological agent of American FoulBrood Disease in honey bees larvae
- P028 Chronic stress in honey bee colonies induced by acaricide residues and pathogens. A case study
- P029 Trypanosomatids: a new threat for honey bee colonies?
- P030 Tissue tropism of *Nosema apis* and *Nosema ceranae* in experimentally infected worker honey bees (*Apis mellifera*)
- P031 Efficacy of Polyvar Yellow® for controlling *Varroa destructor* in Spanish honey bee colonies
- P032 BEEHEAL: standardization of laboratory methods for sample processing, nucleic acids extraction and PCR for microsporidia and viruses analysis
- P033 Infection levels of *Nosema ceranae* (fries et al., 1996) in honey bee colonies in Poland
- P034 Does thiametoxan seed-treated oilseed rape have an impact on honey bee mortality?
- P035 Antimicrobial activity of phytomolecules against *Paenibacillus larvae*
- P036 Antimicrobial activity of phenolic extract of apple pomace against *Paenibacillus larvae* and its toxicity on *Apis mellifera*
- P037 Honey bee feeding and its influence on the biochemical response to fluralinate acaricide
- P038 The Belgian national reference laboratory on bee diseases

- P039 Detection of RNA viruses in bumblebees *Bombus atratus* in Uruguay
 P040 Effect of different MRS-media on the growth of *Melissococcus plutonius*
 P041 Diagnosis of the *Tropilaelaps* mites (Acari: Laelapidae) infestation: optimisation and standardisation of two identification methods based on morphological examination and PCR
 P042 Prevalence of *Paenibacillus larvae* in central bohemian region: a case study during spring 2018
 P043 Distribution of Deformed wing virus of honeybees (*Apis mellifera intermissa*) in the different regions of Algeria
 P044 Honey bee colony losses and associated viruses in *Apis mellifera intermissa* in Algeria

▣ ECOTOXICOLOGY (P045 - P055)

- P045 Neonicotinoids affect brain structural plasticity and olfactory memory in honey bees
 P046 A new design for 10-day adult chronic toxicity tests: exposing honey bees (*Apis mellifera* L.) to active ingredients in pollen, sugar water, and wax matrices
 P047 Synergistic effect of *Varroa destructor* and imidacloprid on immunity during honey bee development
 P048 Survival and physiological impacts of pesticides combinations in the honeybee (*Apis mellifera*)
 P049 Impact of imidacloprid, difenoconazole and glyphosate alone or in mixtures on honey bee
 P050 Trinitrotoluene bioaccumulation in the honey bee hive
 P051 Neonicotinoids decrease sucrose responsiveness of honey bees at first contact
 P052 Effects of neonicotinoid insecticide exposure on nest-founding bumblebee queens
 P053 Monitoring of honeybee colonies exposed to pesticide contamination in apple orchards and vineyards by means of Melixa systems
 P054 Effects of pesticides on walking behavior of *Apis mellifera*
 P055 Impacts of nutrition on the bumblebee's sensitivity to pesticides

▣ BEHAVIOUR AND COLONY FUNCTION (P056 - P076)

- P056 Preliminary protocol to identify the decapped-recapped cells by worker bees, in order to estimate the hygienic behavior in connection with the capped brood
 P057 The pheromones semiochemical effect study in a new solution for honey bee colony development
 P058 Bumblebee foraging preferences and strawberry pollination effectivity according to surrounding biotopes
 P059 Queen tracking inside the hive : a new methodology for the study of queen movement
 P060 Apolipoprotein III haemolymph content and weight as putative biomarkers of precocious foraging
 P061 Hygienic behaviour in different lines of honey bee colonies
 P062 Use of quadcopter drones to estimate honey bee population densities and define honey bee drone congregation locations
 P063 The assessment of non-reproduction rate of *Varroa* (*Varroa destructor*) in a selection apiary in Romania – a comparative approach 2015-2016
 P064 The behaviour of adult honey bees, *Apis mellifera* L., that were reared artificially
 P065 Large scale monitoring of honey bee colony losses in Latin America
 P066 Genetic analysis of royal jelly production and behavioural traits in *Apis mellifera*
 P067 Beehive ventilation: a research agenda
 P068 Screening of volatile organic compounds with semiochemical role from melliferous plants
 P069 Extraction of sugar from vegetables and supplement carbohydrate sources to honeybee, *Apis mellifera*
 P070 Optivar: Promoting the development of selection and breeding for honey bee colonies that are able to naturally limit the burden of *Varroa* infestations
 P071 Are effective microorganisms possible supplement for honey bee colonies?
 P072 Number of queen cells and reproductive swarms in the dwarf honey bee, *Apis florea*
 P073 Evidence for short term evolutionary memory of genetic and environment interactions
 P074 Finding Home: bumblebee homing in rural and urban environments
 P075 *Nosema* infected bees increase protein intake to fight parasites
 P076 Melliferous and polliniferous resources of *Apis mellifera unicolor* in a tropical rainforest of Reunion Island

Wednesday 19 September 2018

Plenary session

AUDITORIUM 1

08h15 *Report Members' Meeting*
Robert Paxton

08h30 KN3 **Keynote 3**
Using associative learning to learn about brain health and bees
Alison Mercer

Morning Sessions



09h30 - 11h00 Parallel Session 7

AUDITORIUM 1

NEUROBIOLOGY & BEHAVIOUR

Moderators: Roger Huybrechts & Jozef Van der Steen

09h30 059 *In vivo* imaging of neonicotinoid influence on odour processing in the honeybee brain
Andrione M., Cabirol A., Fayolle M., Zanini D., Zanon M., Vallortigara G., Antolini R., Haase A.
(Rovereto, Italy)

09h45 060 *Honey bee waggle dance communication benefits pollen foraging*
Nürnberg F., Härtel S., Keller A., Steffan-Dewenter I. (Würzburg, Germany)

10h00 *Coffee & Tea*

10h30 061 *Observations of honey bee wing movements with the use of a high-speed camera*
Łopuch S., Tofilski A. (Krakow, Poland)

10h45 062 *The effect of absolute and relative amounts of omega-3 and omega-6 essential fatty acids on associative learning in honey bees*
Arien Y., Dag A., Shafir S. (Rehovot, Israel)



11h00 - 12h00 Parallel Session 10

AUDITORIUM 1

CHEMICAL ECOLOGY

Moderators: Pierre Rasmont & Adam Tofilski

11h00 063 *Chemical Communication and improved tools for hygienic selection in the honey bee, *Apis mellifera**
Wagoner K., Spivak M., Millar J., Schal C., Rueppell O. (Greensboro, NC, USA)

11h15 064 *Antibiotics, sex and social regulation - the role of C10 short chain fatty acids in honey bee biology*
Crewe R.M., Moritz R.F.A. (Pretoria, South Africa)

11h30 065 *Exposure of Nasonov gland by flying foragers of honey bee*
Tofilski A., Żmuda A. (Krakow, Poland)

- 11h45 066 *Eat me or not- deciphering the molecular signals of diploid drone selection in the honey bee *Apis mellifera**
Gessler B., Hasselmann M. (Stuttgart, Germany)



09h30 - 12h00 Parallel Session 8

AUDITORIUM 2

GENETICS 3 - RESILIENT BEES

Moderators: Tjeerd Blacquière & Peter Rosenkranz

- 09h30 067 *Comparison of hygienic behavior directed against *Varroa destructor* and *Tropilaelaps* sp.*
 Shrestha M., Wegener J., Gautam I., Bienefeld K. (Hohen Neuendorf, Germany)
- 09h45 068 *Explaining the resistance to *Varroa destructor* in the French honey bee population with VSH, SMR and colony dynamic data*
Eynard S.E., Basso B., Guirao A-L., Mondet F., Vignal A., Servin B. (Castanet Tolosan, France)
- 10h00 *Coffee & Tea*
- 10h30 069 *Preliminary researches regarding the efficiency of the formic acid treatment on varroa (*Varroa destructor*) found in the artificially decapped bee brood*
Siceanu A., Căuia E., Vişan G.O., Căuia D. (Bucharest, Romania)
- 10h45 070 *Hygienic behaviour, *Varroa* and *Nosema* levels of Africanized honeybee colonies in Alagoas State, Northeastern Brazil*
 Neto J.T.M., Almeida D.A., Lima E.G., Guimarães-Beelen P., Silva H.M., Beelen R. (Maceió, Brazil)
- 11h00 071 *Identification of the DNA variants associated with the hygienic trait of honey bees*
Farajzadeh L., Momeni J., Nielsen R., Wegener J., Bienefeld K., Bendixen C. (Aarhus, Denmark)
- 11h15 072 *Combining elastic-net penalized regression and whole exome sequencing to identify phenotype-associated variants*
Broeckx B.J.G., De Smet L., Blacquière T., Maebe K., Khalenkow M., Van Poucke M., Dahle B., Neumann P., Bach Nguyen K., Smaghe G., Deforce D., Van Nieuwerburgh F., Peelman L., de Graaf D.C. (Merelbeke, Belgium)
- 11h30 073 *Progress in marker-assisted selection for honey bee breeding*
Pernal S.F., Borba, R., Hoover S.E., Currie R.W., Guarna M.M., Zayed A., Foster L.J. (Alberta, Canada)
- 11h45 074 *A Canadian perspective on marker assisted selection and growing the local queen supply*
 Bixby M., Guarna M.M., Hoover S., MacAfee A., Higo H., Pernal S.F., Foster L. (Vancouver, Canada)



09h30 - 12h15 Parallel Session 9

AUDITORIUM 6

PATHOLOGY 1

Moderators: Peter Neumann & Robert Paxton

- 09h30 075 *Unbiased random mutagenesis contributes to a better understanding of the virulent behaviour of *Paenibacillus* larvae*
 Descamps T., De Smet L., De Vos P., de Graaf D.C. (Ghent, Belgium)

- 09h45 076 *Canada-wide surveillance of exotic pathogens: Lotmaria passim and Crithidia mellifica*
Borba R.S., Wolf-Veiga P., Guarna M.M., Pernal S.F. (Beaverlodge and Vancouver, Canada)
- 10h00 *Coffee & Tea*
- 10h30 077 *Nosema ceranae and Lotmaria passim: partners in crime?*
MacInnis C.L., Luong L.T., Schwarz R.S., Guarna M.M., Pernal S.F. (Alberta and Beaverlodge, Canada)
- 10h45 078 *Factors influencing the development and the course of the N. ceranae infection in Apis mellifera iberiensis*
Urbieta A., Higes M., Meana A., Barrios L., Martín-Hernández R. (Marchamalo, Spain)
- 11h00 079 *Effect of Nosema ceranae on dynamic communities of gut bacteria in native species of Thai honey bees*
Naree S., Ellis J., Mayack C., Suwannapong G. (Chon Buri, Thailand)
- 11h15 080 *Tracking Asian hornets (Vespa velutina) to their nests with radio-telemetry*
Kennedy P., Ford S., Poidatz J., Thiery D., Osborne J. (Bordeaux-Aquitaine, France)
- 11h30 081 *Effect of Nosema ceranae on energetic stress of trehalose level in haemolymph and infection ratio of giant honey bee*
Ponkit R., Paxton R.J., Suwannapong G. (Chon Buri, Thailand)
- 11h45 082 *Oxidative stress increases in honey bees infected with Lotmaria passim*
Radaković M., Vejnović B., Glavinić U., Aleksić N., Mirilović M., Stanimirović Z., Stevanović J. (Belgrade, Serbia)
- 12h00 083 *Haploid males are more susceptible: spillover of Crithidia mellifica from managed honey bees to wild bees (Osmia cornuta)*
Strobl V., Yañez O., Straub L., Albrecht M., Neumann P. (Bern and Zürich, Switzerland)



09h30 - 12h15 Symposium 3

AUDITORIUM 7

LINKING FORAGING PATTERNS, FOOD INTAKE, NUTRITION AND PERFORMANCE IN BEES

Moderators: Sara Leonhardt & Cédric Alaux

- 09h30 084 *Bees rely on their sense of taste to assess pollen nutritional composition*
Ruedenauer F.A., Spaethe J., Strube-Bloss M.F., Leonhardt S.D. (Würzburg, Germany)
- 09h45 085 *Sex-dependent nutrient demand is reflected in pollen supplied to larvae by mother of a generalist solitary bee Osmia bicornis*
Filipiak M. (Kraków, Poland)
- 10h00 *Coffee & Tea*
- 10h30 086 *Temporal disruption in flowers availability affects honeybee colony losses*
Requier F., Odoux J-F., Henry M., Bretagnolle V. (Beauvoir sur Niort and Surgères, France)

- 10h45 087 *Pollen protein content drives bee community preference for an invasive thistle over five native plant species*
Russo L., Vaudo A., Fisher C.J., Grozinger C., Shea K. (Dublin, Ireland)
- 11h00 088 *How larval food quantities affect caste-fate in the stingless bee *Scaptotrigona depilis**
Buchholz J., Hartfelder K. (Halle, Germany)
- 11h15 089 *Honeybees tolerate cyanogenic glucosides from clover nectar and flowers*
Jensen A.B., Lecocq A., Green A.A., De Castro E.C.P., Olsen C.E., Zagrobelny M. (Copenhagen, Denmark)
- 11h30 090 *The feeding with glandular secretions protects honeybee larvae from toxic pyrrolizidine alkaloids present in pollen*
Kast C., Kilchenmann V., Lucchetti M.A. (Bern, Switzerland)
- 11h45 091 *New protocols to study nectar foraging in honey bees*
Sokolowski M. (Amiens, France)
- 12h00 092 *Bees and resin, resin and bees: insights into an underrated resource*
Leonhardt S.D., Drescher N., Kaluza B.F., Neumann P., Klein A-M., Wallace H.M., Schmitt T. (Würzburg, Germany)

Plenary session

AUDITORIUM 1

- 14h00 KN4 **Keynote 4**
State of the art in honeybee chemical ecology
Yves Le Conte
- 15h00-18h30 *Social Event - Discover Ghent*

**PATHOLOGY 2 (P077 - P116)**

- P077 Experimental infection of bumblebees (*Bombus terrestris*) with Deformed wing virus and Black queen cell virus
- P078 Determining the efficacy of oxalic acid sublimation as a control for the honey bee pest *Varroa destructor* in Florida, USA
- P079 A new multiplex PCR protocol to detect mixed trypanosomatid infections in species of *Apis* and *Bombus*
- P080 Three years controlling the yellow-legged hornet (*Vespa velutina*), a new predator of honeybees in the Balearic Islands
- P081 Black garden ants are alternative hosts of honey bee viruses
- P082 Supplementation of *Apis mellifera* colonies with a beneficial microbes mixture based on *Lactobacillus kunkeei* strains
- P083 Trapping *Vespa velutina* queens as a control method and its impact on honey bee colony strength
- P084 Can sublethal pesticides exposure in honeybee colonies with subclinical infections by *Paenibacillus larvae* favour the development of American foulbrood in clinical form?
- P085 Towards an electronic nose for American foulbrood: identifying volatile biomarkers for *Paenibacillus Larvae*
- P086 Impact of essential oils at low doses on *Varroa destructor*
- P087 Bee pathogen occurrence in commercial and traditional beekeeping
- P088 Chronic bee paralysis: An emerging issue in honey bee health
- P089 Multiple virus and microsporidian infections in individual honey bee workers (*Apis mellifera*)
- P090 Comparative tests of in-hive traps for diagnosis and control of *Aethina tumida* infestations
- P091 Prey (honeybee) predator (yellow-legged hornet) spill-over of the bee pathogen DWV
- P092 Influence of *Nosema ceranae* infection on semen characteristics in honeybee drones
- P093 Effect of winter stores on *Nosema Ceranae* infection and on colony fitness
- P094 Dietary supplementation protects honey bee from immunosuppression caused by *Nosema ceranae*
- P095 Evaluation of VarroMed® performances in winter treatment of honey bee colonies (*Apis mellifera*) after brood interruption in a temperate area
- P096 Use of traps containing biocides to diagnose and control SHB
- P097 Monitoring of Small Hive Beetle (*Aethina tumida* Murray) in Calabria (Italy) from 2014 to 2016: practical identification methods
- P098 Reactive oxygen species and nitric oxide in honey bee gut epithelial immunity
- P099 Effect of protoporphyrin IX amide derivatives on *Nosema ceranae* development in *Apis Mellifera carnica*
- P100 VarroMed - field trial data and lessons learned from the first centrally approved next-generation veterinary medicinal product against *Varroa*
- P101 First report of the booklice *Liposcelis* spp (order: psocoptera) associated with honey bee hive
- P102 Antimicrobial activity of *Bifidobacterium* spp. isolated from *Apis mellifera jemenitica* against drug multi-resistant human pathogens
- P103 *Lactobacillus plantarum* from the gut of indigenous honeybee of Saudi Arabia inhibit the growth and biofilm formation of *Candida albicans*
- P104 Antibacterial properties of Saudi Arabian Sidr honey against *Paenibacillus larvae*, the causal organism of American foulbrood
- P105 The action of honeybee venom on drug multi-resistant human pathogens
- P106 Bacterial strains of the *Lactobacillus* and *Fructobacillus* genera isolated from the gastrointestinal tract of honeybees for the use in the control and prevention of bee diseases and for probiotic preparations based on such bacterial strains (Patent application No. P.423363)
- P107 European foulbrood disease: host-pathogen interactions and the impact of secondary invaders
- P108 Effects of Deformed wing virus (DWV) on honey bee
- P109 Sulforaphane is also present in bee pollen
- P110 *Paenibacillus larvae*: genetic diversity and susceptibility to European and Asian honey bees and antagonistic activity of microflora in bee hives on American foulbrood pathogen

- P111 Healthy bee: monitoring of Belgian honey bee health (2016-2017)
 P112 Nosemosis in Estonian and Latvian apiaries: difference between countries, persistence over years and species distribution
 P113 Ectoparasitic mites *Varroa underwoodi* in Eastern and Western honey bees
 P114 Spatio-temporal variation of honeybee pathogens prevalence in wild bees in semiarid areas
 P115 Cement honey - effects of the trisaccharide melezitose on honey bees
 P116 Oxybee® (containing oxalic acid) in the treatment of varroosis in honey bees under field conditions in Germany

□ GENETICS (P117 - P138)

- P117 A study of local adaptation in the Iberian honeybee (*Apis mellifera iberiensis*) using a reciprocal translocation experiment
 P118 Introgressive hybridization and latitudinal admixture clines in honeybees in East-Central Europe
 P119 A comparative study of colony performance, hygienic behaviour and parasite and disease infection in the endemic honeybee *A. m. ruttneri* and the introduced *A. m. ligustica* in Malta
 P120 Using exuviae as a non-destructive sampling method for population genetic analysis of bees
 P121 Genetic characterization of the Italian *Vespa velutina nigrithorax* (*du Buysson*) population
 P122 *Varroa* selection criteria: how can beekeepers use it?
 P123 Smartbees - sustainable management of resilient bee population
 P124 How to best control for differences in microsatellite loci variability when comparing genetic diversity across populations
 P125 Genome-wide analysis of structural and single nucleotide variation at candidate loci for behavioural traits in Carniolan honeybee (*Apis mellifera carnica*)
 P126 Applying reduce SNP assays for inferring C-lineage introgression patterns in Iberian honeybee populations of the Azores archipelago
 P127 Developing reduced SNP assays from whole-genome sequence data to estimate C-lineage introgression in the Iberian honeybee (*Apis mellifera iberiensis*)
 P128 Polymorphisms in cytochrome P450 versus cline distribution of evolutionary lineages in *Apis mellifera iberiensis*
 P129 Contribution to the characterization of the genetic diversity of the honeybee *Apis mellifera*: case of the sex determination locus *csd*
 P130 Applying molecular tools for conservation of wild and managed black bees in Ireland
 P131 The transcription of ecdysteroids related genes in *Apis mellifera* workers and drones brood
 P132 *Varroa* mite reproduction, hygienic and grooming behavior of Ethiopian honeybee (*Apis mellifera jementica*)
 P133 High sample throughput genotyping for estimating C-lineage introgression in the dark honeybee: an accurate and cost-effective SNP-based tool
 P134 A collection status of the world biogeography and population genomics of *Varroa destructor* project
 P135 Identification of honeybee populations from the azores: insights from wing geometric morphometrics
 P136 Integrative approach apply to three Belgian species (*Thoracobombus*) involving DNA sequences and male marking secretions
 P137 Genetic architecture of honey bee virus susceptibility
 P138 The conservation of honey bee subspecies depends on beekeepers' involvement

• BEE PRODUCTS (P139 - P151)

- P139 The impact of solid state fermentation on bee pollen out layer and phenolic compounds
 P140 Alpha-mangostin and apigenin induced the death of BT474 breast cancer cells via necrosis involving with autophagy and inflammation
 P141 Monocyclic aromatic hydrocarbons in urban honey bee larvae and pollen

- P142 First scientific studies of beehive air composition
- P143 Authentication of honeydew honeys by analyzing non-volatile components
- P144 Quality and variety of Ukrainian honey
- P145 Effect of honeybee race and season changes on propolis composition
- P146 Microbeekeeping protocol to design a quantitative and qualitative properties of natural honey
- P147 *Fallopia japonica* honey: an antimicrobial candidate against methicillin-resistant (MRSA) and methicillin-susceptible (MSSA) *Staphylococcus aureus*
- P148 Bee products in Thailand: their medicinal properties
- P149 Gbaya - beekeeping and honey hunting
- P150 Physicochemical and sensory properties of different types of honey from Serbian market
- P151 Development of liposome containing bee venom extract from *Apis dorsata* for anti-aging

Plenary session

AUDITORIUM 1

- 08h30 KN5 **Keynote 5**
Nutrition and immunity - a systemic response to infection in the insect model, *Drosophila melanogaster*
Dan Hultmark

Morning Sessions



09h30 - 10h15 Parallel Session 11 IMMUNITY

AUDITORIUM 1

Moderators: Roger Huybrechts & Robert Paxton

- 09h30 093 *Single von Willebrand factor C proteins and its role in insect immunity*
Wang H., Niu J., Smagghe G., Meeus I. (Ghent, Belgium)
- 09h45 094 *Study of gene expression of immunologically important molecules in honey bees after application of probiotic preparation*
Marušćáková I., Schusterová P., Bielik B., Toporčák J., Mudroňová D. (Košice, Slovakia)
- 10h00 095 *On mechanisms of trans-generational immune priming in honeybees*
Freitag D., Salmela H., Harwood G., Amdam G. (Helsinki, Finland)

10h15 *Coffee & Tea*



10h45 - 12h15 Parallel Session 14 BEE PRODUCTS

AUDITORIUM 1

Moderators: Etienne Bruneau & Janko Bozic

- 10h45 096 *Alarming situation on the EU beeswax market: the prevalence of adulterated beeswax material and related safety issues*
Svečnjak L., Prđun S., Baranović G., Damić M., Rogina J. (Zagreb, Croatia)
- 11h00 097 *Effect of beeswax adulterated with stearin on the development of worker bee brood: results of a field trial*
Reybroeck W., Van Nevel J. (Melle, Belgium)
- 11h15 098 *Effect of spatial allocation of nectar cells on storage and honey ripening dynamics in the honeybee *Apis mellifera**
Eyer M., Dietemann V. (Bern, Switzerland)
- 11h30 099 *Culturing and conserving of stored pollen on the way into beebread*
Podrižnik B., Božič J. (Ljubljana, Slovenia)
- 11h45 100 *Sugar, amino acids, and inorganic ion profiling of honeydew from aphid species hosting different tree species in Germany*
Shaaban B., Seeburger V., Schroeder A., Lohaus G. (Wuppertal, Germany)
- 12h00 101 *Genuine Manuka honey!?! - State of the art*
Beitlich N., Speer K. (Dresden, Germany)



**09h30 - 12h15 Parallel Session 12
ECOTOXICOLOGY 2**

AUDITORIUM 2

Moderators: Claude Saegerman & Annelly Brandt

- 09h30 102 *Synergistic effects of stressors on bee health: pesticides, nutrition, and behaviour*
Tosi S. (San Diego, La Jolla, CA, USA)
- 09h45 103 *Imidacloprid diffusion route: from apple orchard to the honey bee colony matrices*
Malagnini V., di Prisco G., Zanotelli L., Nazzi F., Annoscia D., Tonidandel L., Colombo R., Serra G., Boi M., Fontana P., Angeli G. (San Michele all'Adige, Italy)
- 10h00 104 *Chronic toxicity of select pesticides to honey bee (*Apis mellifera* L.) larvae reared in vitro*
Dai P., Jack C.J., Mortensen A.N., Bustamante T.A., Bloomquist J.R., Ellis J.D. (Gainesville, Florida, USA)
- 10h15 *Coffee & Tea*
- 10h45 105 *The homing flight ring test: method to assess the effects of sublethal doses of pesticides on the honey bee in field conditions*
Fourrier J., Rouzes A., Monchanin C., Henry M., Decourtye D., Aupinel P., Fortini D., Moreau C. (Avignon, France)
- 11h00 106 *Lazy Spring: pollen-bound pesticide mixtures make bees less efficient*
Prado A., Pioz M., Vidau C., Brunet J.L., Jury, M., Crauser D., Requier F., Le Conte Y., Alaux C. (Avignon, France)
- 11h15 107 *Versatile stressor impact analysis by video observation of worker behavior and brood development within cells reveals neonicotinoid effects at field realistic concentrations*
Siefert P., Hota R., Grünewald B. (Frankfurt am Main, Germany)
- 11h30 108 *Pharmacokinetic and molecular investigations providing insights into the honey bee- friendly profile of the butenolide insecticide flupyradifurone (SIVANTO prime®)*
Zaworra M., Almanza M.T., Nauen R. (Monheim, Germany)
- 11h45 109 *Pesticide residues in bee bread from the national honey bee disease survey*
Traynor K., vanEngelsdorp D., Rennich K., Rose R., Fahey R. (College Park, MD, USA)
- 12h00 110 *Gene expression profiling demonstrates that exposure to neonicotinoid pesticides affects multiple biological processes in bumblebees (*Bombus terrestris*)*
Fletcher I.K., Colgan T.J., Arce A., Ramos-Rodriguez A., Stolle E., Gill R., Wurm Y. (London, UK)



**09h30 - 12h15 Parallel Session 13
PATHOLOGY 2 - VIRUS**

AUDITORIUM 6

Moderators: Fanny Mondet & Joachim de Miranda

- 09h30 111 *Two deformed wing virus variants, genotypes A and B, cause low pupal mortality and a high frequency of wing deformities in metamorphosing honey bees (*Apis mellifera*)*
Tehel A., Vu Q., Theodorou P., Paxton R.J. (Halle, Germany)
- 09h45 112 *Using an in vitro feeding system to investigate Varroa-vectored DWV variant transmission*
Bradford E.L., Campbell E.M., Bowman A.S. (Aberdeen, Scotland, UK)

- 10h00 113 *Europe-wide diversity of Deformed wing virus variants*
Sircoulomb F., Schurr F., Blanchard Y., Lucas P., Dubois E., Thiery R., Smartbees consortium partners (Sophia Antipolis, France)
- 10h15 *Coffee & Tea*
- 10h45 114 *Healthy honey bees - analysis of the virus population to assess rational Varroa control*
Woodford L., Evans D.J., Bowman A., Highet F. (St Andrews, UK)
- 11h00 115 *Virome analysis on Belgian honeybees reveals multiple undescribed viruses including a diverse bacteriophage population*
Deboutte W., Beller L., Yinda K.C., Conceição-Neto N., Maes P., de Graaf D.C., Matthijnsens J. (Leuven, Belgium)
- 11h15 116 *Apis Rhabdovirus-1, a negative-sense RNA virus present in populations of pollinators, replicates in Apis mellifera and Varroa destructor*
Levin S., Galbraith D., Sela N., Erez T., Grozinger C.M., Chejanovsky N. (Israel)
- 11h30 117 *A natural product inhibited the replication and expression of Israeli acute paralysis virus*
Yang S., Xu X., Zhao H., Deng S., Chu Y., Yang D., Wang X., Zhao D., Diao Q., Hou C. (Beijing, P.R. China)
- 11h45 118 *Constructing infectious Sacbrood virus clone with green fluorescence protein expression*
Mehmood S., Jin T., Huang H., Huang W-F. (Fuzhou, P.R. China)
- 12h00 119 *Relevance of qualitative and quantitative changes in the virome to the survival of a Swedish Varroa-resistant honeybee population*
Thaduri S., Locke B., Granberg F., de Miranda J.R. (Uppsala, Sweden)



09h30 - 12h15 Symposium 4

AUDITORIUM 7

STUDIES ON COLONY MULTIPLE ENEMIES FOR BEE HEALTH

Moderators: Marie-Pierre Chauzat & Laurianne Paris

- 09h30 120 *European-wide analysis of Paenibacillus larvae genetic diversity: EuroPLarva*
Sircoulomb F., Gaiani N., Paris L., Ribière-Chabert M., Rivière M.P. (Sophia Antipolis, France)
- 09h45 121 *Health status and factors identified for winter losses of honey bee colonies by the Austrian surveillance study 2015/2016*
Morawetz L., Köglberger H., Derakhshifar I., Mayr J., Moosbeckhofer R., Crailsheim K. (Graz, Austria)
- 10h00 122 *Should Varroosis include honeybee viruses as causative agents?*
Schäfer M.O. (Greifswald - Island Riems, Germany)
- 10h15 *Coffee & Tea*
- 10h45 123 *The yellow-legged hornet: its impact on European western honeybees and control methods*
Pointeau S., Rome Q., Requier F., Fournier A., Decante D., Vallon J., Henry M., Decourtye A. (Avignon, France)
- 11h00 124 *Insights into honey bee pathogen and parasite dynamics and interactions using high-throughput analysis*
D'Alvise P., Hasselmann M. (Stuttgart, Germany)

- 11h15 125 *Small hive beetle invasion risk under current and future climate scenarios: a modelling approach to foster mitigation efforts*
Cornelissen B., Schweiger O., Neumann P. (Bern, Switzerland)
- 11h30 126 *Survey of wild bee communities threatened by *Vespa velutina**
Carisio L., Liroy S., Porporato M., Manino A. (Turin, Italy)
- 11h45 127 *Patterns of *Vespa velutina* invasion in western Iberia and Italy as revealed by molecular markers*
Quaresma A., Henriques D., Godinho J., Maside X., Bortolotti L., Pinto M.A. (Bragança, Portugal)
- 12h00 Discussion time

Afternoon Sessions



14h30- 16h00 Parallel Session 15 REPRODUCTIVE BIOLOGY

AUDITORIUM 1

Moderators: Fani Hatjina & Lina De Smet

- 14h30 128 *Reproductive success in European orchard bee *Osmia cornuta* (Hymenoptera: Megachilidae) influenced by the number of males*
Stanisavljević L., Rašić S., Stanisavljević J. (Belgrade, Serbia)
- 14h45 129 *Differential circular RNAs expression in ovary during oviposition in honey bees*
Chen X., Shi W., Chen C. (Beijing, P.R.China)
- 15h00 130 *Influence of DMSO with dextran, PVP or PEG in freezing extender on queens*
Nur Z., Çakmak S.S., Çakmak I., Önder N.T., Gökçe E., Üstüner B., Alçay S., Toker B., Şen H., Soylu M.K. (Bursa, Turkey)
- 15h15 131 *Queen temperature stress decreases sperm viability, queen performance, and colony productivity*
Guarna M.M., Pettis J.S., Pernal S.F. (Beaverlodge, AB, Canada)
- 15h30 132 *Observations of the mating behaviour of *Apis mellifera macedonica* and *Apis mellifera cecropia* under natural conditions and under conditions of a control mating system (the Train of Virgin Queens)*
Hatjina E., Charistos L. (Nea Moudania, Greece)
- 15h45 133 *Preservation of domesticated honey bee (Hymenoptera: Apidae) drone semen*
Paillard M., Rousseau A., Giovenazzo P., Bailey J.L. (Deschambault and Quebec, Canada)
- 16h00 Coffee & Tea



16h30- 17h30 Parallel Session 18 EVOLUTIONARY BIOLOGY

AUDITORIUM 1

Moderators: Guy Smagghe & Anja Buttstedt

- 16h30 134 *Experimental evolution of parasite virulence in a eusocial insect*
Lattorff H.M.G. (Nairobi, Kenya and Halle-Jena-Leipzig, Germany)

- 16h45 135 *Evolution of new gene functions by gene duplications - the case of major royal jelly proteins in the honey bee*
Buttstedt A., Mureşan C.I., Helbing S., Moritz R.F.A. (Halle and Dresden, Germany)
- 17h00 136 *Overview of the southwest Indian ocean honeybee: combining morphometry and genetics to investigate the original diversity of *Apis mellifera* spp. in Madagascar and surrounding archipelagos*
Galataud J., Delatte H., Bernet C., Techer M., Reynaud B., Clémencet J. (Saint Denis, France)
- 17h15 137 *Genetic basis for the evolution of non-reproduction of *Varroa destructor* in populations of *Apis mellifera**
Conlon B.H., Moritz R.F.A., Routtu J. (Halle, Germany)



14h30- 17h30 Parallel Session 16
ECOLOGY 2

AUDITORIUM 2

Moderators: Ivan Meeus & Andrzej Oleksa

- 14h30 138 *Floral landscape enrichment and semi-natural habitats improve honeybee health, as evidenced by a 'Landscape physiology' approach*
Alaux C., Allier F., Decourtye A., Odoux J-F., Le Conte Y., Henry M. (Avignon, France)
- 14h45 139 *Influence of major stresses on wild bees communities in an urban environment*
Weekers T., Leclercq N., Hainaut H., Caruso G., Molenberg J-M., Vereecken N.J. (Brussels, Belgium)
- 15h00 140 *The application of non-intrusive electronic bee hive monitoring to field studies*
Evans H.A., Evans S.K. (Newcastle upon Tyne, UK)
- 15h15 141 *Changes in bumble bee species diversity and abundance over 50 years on red clover fields in Estonia*
Karise R., Mänd M., Viik E. (Harjumaa, Estonia)
- 15h30 142 *European beech forests as a home for feral honey bee colonies*
Rutschmann B., Kohl P.L. (Würzburg, Germany)
- 15h45 143 *Potential role of wetlands for honey bees diversity, population density and conservation in Sudan*
El-Niweiri M.A.A., Lattorff M.G.H. (Nairobi, Kenya and Halle-Jena-Leipzig, Germany)
- 16h00 *Coffee & Tea*
- 16h30 144 *Do floral traits play a role in animal plant interaction? A study case with orchid bees*
Boff S., da Luz C.F.P., Raizer J., Lima L.C.P. (São Paulo, Brazil)
- 16h45 145 *Are non-native plants a valuable resource for wild bees?*
Seitz N., vanEngelsdorp D., Leonhardt S.D. (Würzburg, Germany)
- 17h00 146 *Landscape related plant and resource diversity increases foraging and colony fitness in a tropical social bee*
Kaluza B., Wallace H., Heard T., Leonhardt S. (Würzburg, Germany and Maroochydore QLD, Australia)
- 17h15 147 *Response of wild bee diversity and functional traits to vineyard management and landscape diversity across Europe*
Kratschmer S., Pachinger B., Paredes D., Macavei L., Guzmán G., Guernion M., Nicolai A., Fertil A., Popescu D., Bunea C., Zaller J., Winter S. (Vienna, Austria)



**14h30- 17h30 Parallel Session 17
PATHOLOGY 3 - VARROA**

Moderators: Marina Meixner & Frans Jacobs

AUDITORIUM 6



- 14h30 148 *Varroa destructor* feeds primarily on honey bee fat body tissue not hemolymph
Ramsey S.D., Ochoa R., Bauchan G., Gulbranson C., Mowery J., Cohen A., Lim D., Joklik J., Cicero J.M., Ellis J.D., Hawthorne D., vanEngelsdorp D. (College Park, Maryland, USA)
- 14h45 149 *Varroa mite saliva contains bioactive factors that aid mite feeding and manipulate the honeybee immune response*
Campbell E.M., Bowman A.S. (Aberdeen, Scotland, UK)
- 15h00 150 *Hormonal induction of in vitro egg production in the honeybee mite, Varroa destructor*
Christie C.R., Budge G.E., Campbell E.M., Bowman A.S. (Aberdeen, Scotland, UK)
- 15h15 151 *Transcriptome profiling of the parasite Varroa destructor provides new biological insights into the mite adult life cycle*
Mondet F., Rau A., Klopp C., Rohmer M., Severac D., Le Conte Y., Alaux C. (Avignon, France)
- 15h30 152 *Early Varroa infection transcriptomics in the Asian honey bee*
Routtu J., Conlon B.H., Devaraju S., Brockmann A., Moritz R.F.A. (Halle-Wittenberg, Germany)
- 15h45 153 *Lithium salts as varroacide - efficacy in the treatment of artificial swarms and side effects on bees and brood*
Ziegelmann B., Makosch M., Hannus S., Rosenkranz P. (Stuttgart, Germany)
- 16h00 *Coffee & Tea*
- 16h30 154 *Using RNAi to control Varroa destructor – a novel biopesticidal tool for effective control of the parasitic mite of honey bees*
Gleit Kielmanowicz M., Verhaert J., Inberg A., Masucci J.D., Avni D., Cooper S., Durnel N., Back S. (Brussels, Belgium)
- 16h45 155 *Kairomones in the hive involves in Varroa destructor mite behavior*
Pojar-Fenesan M., Balea A., Ciotlaus I. (Cluj-Napoca, Romania)
- 17h00 156 *Reproduction of the mite Varroa destructor in original and new honey bee hosts*
Lin Z., Qin Y., Page P., Wang S., Li L., Wen Z., Hu F., Neumann P., Zheng H., Dietemann V. (Bern, Switzerland and Chiang Mai, Thailand)
- 17h15 157 *Tracking genomic footprints of successful host switches in honey bee Varroa mites*
Techer M., Roberts J.M.K., Mikheyev A.S. (Okinawa-ken, Japan)

Plenary session

AUDITORIUM 1

- 17h30 KN6 **Keynote 6**
Social bees as model systems in the study of the evolution of cooperation and conflict
Tom Wenseleers

CHEMICAL ECOLOGY (P152 - P165)

- P152 Increased fluctuating asymmetry in honey bee drones exposed to neonicotinoid pesticides
- P153 Drone's endophallus pigment: comparative study of absorption spectra of four *Apis* species
- P154 Honeybees (*Apis mellifera*) and bee pollen as bio-indicators of heavy metal pollution in different geographic areas
- P155 Multi-stress approach for the assessment of decline causes for honeybee
- P156 The brood survival rate of a colony predicts the adult emergence rate of its larvae reared in vitro
- P157 The adverse effects of nanosilver on *Apis mellifera carnica*
- P158 Effects of a potential natural acaricide carvacrol on carnolian honeybee (*Apis mellifera carnica*)
- P159 Hemolytic activity of pathogenic bacteria, erythrocyte membrane protection, and immunostimulatory effects of Saudi honeys
- P160 Field effects of two neonicotinoid pesticides on honey bee drones, *Apis mellifera*
- P161 The ups and downs of hops (*Humulus lupulus*) beta acids in *Varroa* control
- P162 The impact of in hive pesticide contaminations on honey bee mortality
- P163 Enhancement of chronic bee paralysis virus levels in honeybees acute exposed to imidacloprid: a Chinese case study
- P164 The effects of tau-fluvalinate and tebuconazole on honeybee (*Apis mellifera*) queens
- P165 Thyme nectar and pollen terpenes potentially improving honey bee health

BEE HEALTH (P166 - P202)

- P166 The Norwegian bumblebees in the face of climate change
- P167 BPRACTICES and Hivelog web application for honey bee products traceability
- P168 Possible side effects of sugar supplementary nutrition on honey bee health
- P169 Fat body evaluation of wintering bees with NIR (near infrared spectroscopy)
- P170 Influence of pH on stability and structure of major royal jelly proteins
- P171 Molecular mechanism study of honeybee caste differentiation regulated by the conformation change of major royal jelly protein 1
- P172 Colonies and queen replacement strategies: a systemic experiment
- P173 Sustainability of beekeeping farms: a definition proposal
- P174 Laurel (*Laurus nobilis*) extract induces gene expression of antioxidative enzymes in honeybees
- P175 New probiotic preparation for honey bees
- P176 Pollen as a key factor for the response of honey bees to mite parasitization
- P177 Opportunities and challenges for sustainable apiculture on the mountain Avala and surrounding region (Belgrade area, Serbia)
- P178 The Scientific Veterinary Medical Association for Apiculture (SVETAP)
- P179 BPRACTICES: first attempt of definition of Good Beekeeping Practices (GBPS)
- P180 Three species of native Thai honey bees exploit overlapping pollen resources: Identification of bee flora from pollen loads and midguts from *Apis cerana*, *A. dorsata* and *A. florea*
- P181 Pollen consumption by adult solitary bees: amount, frequency, and species composition
- P182 BDA (beekeeping database) in Italy: an achievement in the management of bee health
- P183 Quality of honeybee nutrition originating from proteins is key factor of honeybee health
- P184 Heavy metal pollution levels in honey bee larvae depending on pollen and environmental pollution
- P185 Sustainable beekeeping and advisory service: a critical review
- P186 Comprehensive study of midgut/pyloric bacterial population in European and Japanese honey bees
- P187 The influence of beekeepers' management practices and pesticides on bee health in Chile's Central Valley
- P188 Proline enriched diet effects on haemolymph amino acid composition in *Osmia bicornis* (L.) females and males

- P189 Reducing the risk of honey bee colony loss through beekeeping management practices
- P190 Perception of risk factors affecting bee colonies (*Apis mellifera*) health and mortality in Belgium
- P191 Natural comb honeybee management in frame hives for professional beekeepinga
- P192 First European study of honey production in beehives under an annual "Vita Feed" nutritional protocol
- P193 Validation of reference genes for RT-qPCR analysis of thermal stress gene expression in *Bombus terrestris*
- P194 BeeHeal: promoting bee health for sustainable agriculture
- P195 Bioactive compounds that could be found in bee pollen
- P196 SAMS - International partnership on innovation in Smart Apiculture Management Services
- P197 Bee world is celebrating its 100th Anniversary in 2019
- P198 Study regarding the content of the various nutrients in the *Crataegus monogyna*, *Brassica* spp. and *Prunus* spp. bee pollen
- P199 A multi-stressor analysis of spatio-temporal shifts in Belgian bee community
- P200 Colony performance of *Apis mellifera* feeded with *Lactobacillus johnsonii* AJ5 metabolites
- P201 Bee *Varroa* scanner
- P202 Creating overwintered nucleus colonies for early spring research

ECOLOGY (P203- P221)

- P203 An assessment of the Belgian *Halictids* species, with an overview of the endangered species in other countries in Europe
- P204 Improvement of the almond production using bumblebees
- P205 Ensuring access to high quality flower resources can reduce impacts of climate change on bumblebee colony development
- P206 Hyperthermic stress resistance of bumblebees: what about of sub-boreal Belgian species
- P207 Foraging in the cities: ecological niche breadth and overlap of Euglossini bees
- P208 Foraging activity of honey bees and wild pollinators on fruit trees and berry shrubs
- P209 Effects of some behavior characteristics of honey bee (*Apis mellifera* L.) and bumble bee (*Bombus terrestris*) on cherry pollination (production, quality, phenology and yield) and climatic temperature change
- P210 Genetic analysis on recently found *B. veteranus* specimens in Belgium, does the supposed extinct species returned or just never left?
- P211 Spatio-temporal floral resource shifts in Belgium
- P212 Exotic and native plant species and their role attracting native pollinators
- P213 Pollination efficiency of thirteen bee species visiting *Cajanus cajan* in Cameroon
- P214 Status and trends of wild pollinators in Belgium and North of France
- P215 Adaptation to a changing world: how wild bees cope with climate change
- P216 May regulations against thistles threaten bumblebees?
- P217 Beekeeping potential in the red dwarf honeybees, *Apis florea*
- P218 Honey bees (*Apis mellifera* L.) use pollen from the biogas crop *Sorghum bicolor* and increase the seed-set
- P219 Impacts of honey bee density on crop yield: a meta-analysis
- P220 Effects of landscape structure and floral border on pollination services provided by honeybees and native bees in avocado orchards of central Chile
- P221 The effect of pest management in orchards on honey bee welfare



SOCIAL PROGRAM

EurBee 8 Social Program

Belgium fires one's imagination. Those with a craving for art and culture or architectural beauty, will be pampered in our city of art. Those who like a taste of gastronomy, cultural events and nightlife will also have every wish satisfied. Throughout the EurBee 8 social program you will discover in the city of Ghent all the above!

Monday evening 17th, 19h00 – 21h00
Opening Ceremony and Welcome Reception
at the Aula of Ghent University

Volderstraat 9, Ghent

When Ghent University was founded, the city decided to design and build a "celebration palace", the Aula. The foundation stone of this neoclassical building with a Greek-looking porch, spacious peristilium, and round Hall with a panelled ceiling was laid in 1819. The building was opened in 1826. Nowadays, the Aula is still the place for official ceremonies, honorary doctorates, proclamations and so on.

The EurBee 8 host committee would like to welcome you at 19h00 at the Aula of Ghent University for the EurBee 8 Opening Ceremony, which will be followed by the Welcome Reception, where you can catch up with colleagues.



SOCIAL PROGRAM

Wednesday afternoon 19th, 15h00 – 18h30
Social event - Discover Ghent

We will leave immediately after the afternoon plenary session from the congress venue and walk through the Citadelpark to the Bijlokekaai. A boat will bring you to the historical inner city centre of Ghent, where the guides will take you along to discover the city. The tour will last approximately 2 hours. Beware of the cobblestones and wear comfortable shoes!



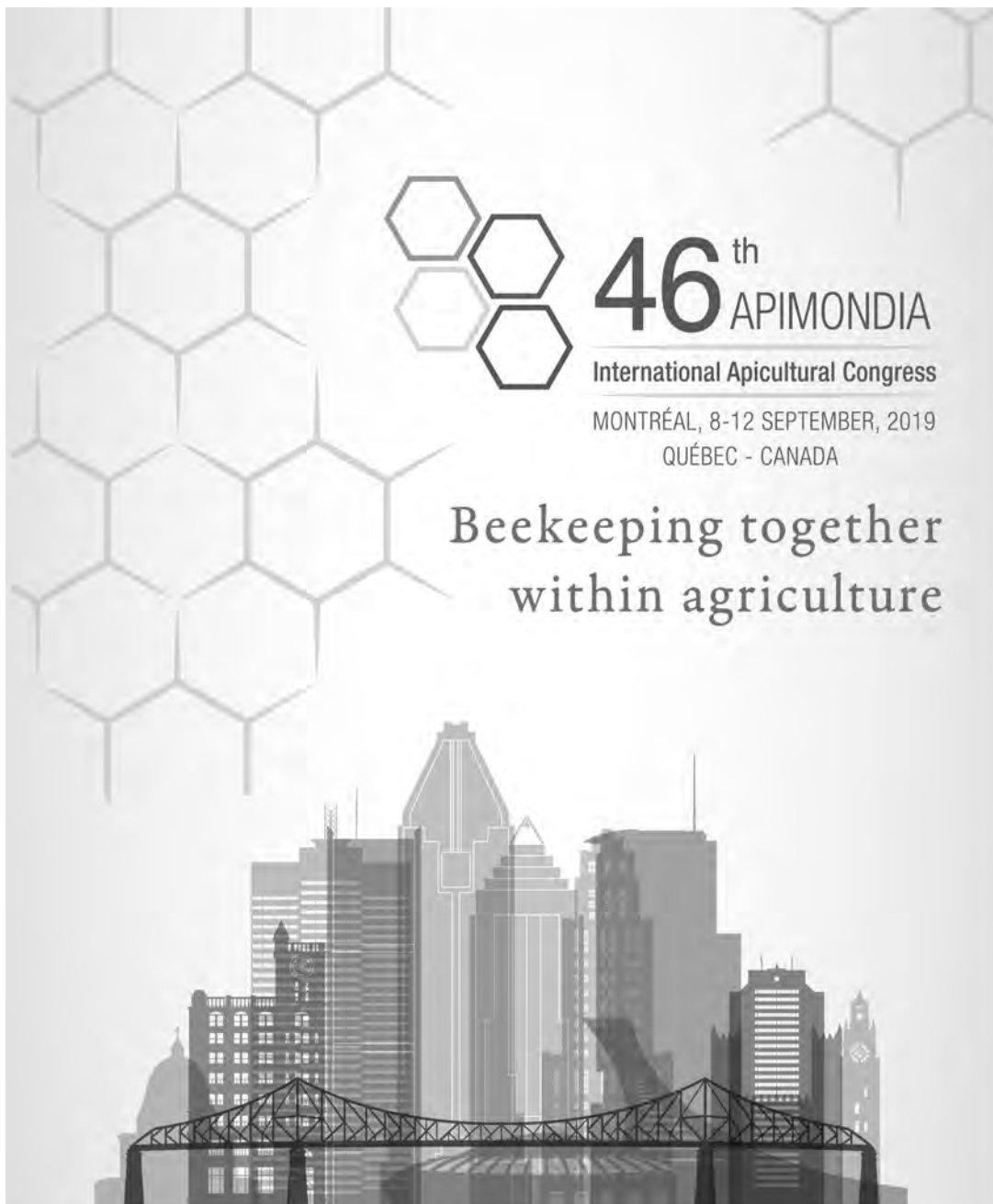
Thursday evening 20th, 20.00 –
Congress Banquet at the Old Fish Market (Oude Vismijn)

Rekelingestraat 5

The Oude Vismijn used to be the fish, meat and vegetable market of Ghent and is located in the most historical heart of the city of Ghent. This cultural historical patrimony has recently been renovated.

Here centuries-old history and high-tech facilities go hand in hand. Opposite the Castle of the Counts lies the monumental gateway (1689) to the Old Fish Market. Neptune keeps watch over the Scheldt (male) and the Lys (female). Time is foreseen for awards and speeches and of course after the dessert we make place to install the dancing floor. Drinks will be offered during the banquet but will be on delegates account afterwards.

With the kind support of the 46th Apimondia



SOCIAL PROGRAM



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