

## ISS 3 Holobiont 10 schedule

25-29 July 2022

### Monday 25th

8h-8h45 Registration

*Salle 3000* 8h45 Welcome

9h15-10h **One health and the Holobiont**

Joël Doré (*Homo symbiosus: human-microbes symbiosis in health and disease*)

10h-10h45 **Symbiosis and reproduction**

Irene Newton (*Mi casa es su casa: How intracellular symbionts manipulate host biology*)

10h45-11h15 Coffee break

11h15-12h55 Selected oral communications. Please refer to the table below.

	<b>One health and the Holobiont</b> <b>Chair: Joël Doré</b> <b>Co-chair: Marc-André Selosse</b>  Salle 3000	<b>Symbiosis and reproduction</b> <b>Chair: Irene Newton</b> <b>Co-chair: Natacha Kremer</b>  Salle Bellecour
11h15-11h35	M Pilar Francino. <i>An extended reconstruction of human gut microbiota metabolism of dietary compounds.</i>	Marie Pollmann. <i>Cytoplasmic incompatibility in <i>Lariophagus distinguendus</i>: a novel phenotype for <i>Spiroplasma</i>. Recipient of the ISS/Moore foundation travel grant</i>
11h35-11h55	Matthieu Groussin. <i>Evolution of host-gut microbiome interactions in the context of industrialization.</i>	Ron Flateau. <i>Wolbachia endosymbionts of fleas occur in all females but rarely in males and do not show evidence of obligate relationships, fitness effect or sex-distorting manipulation.</i>
11h55-12h15	Andrew Quinn. <i>Host synthesized organic acids enable colonization of native honey bee gut symbiont</i>	Alice Namias. <i>Loss of cid variants and recombination explain rapid evolution of Wolbachia-induced cytoplasmic incompatibility</i>
12h15-12h35	Claire Valiente-Moro. <i>Mosquito sex and mycobiota contribute to fructose metabolism in the Asian tiger mosquito <i>Aedes albopictus</i></i>	Amelia Lindsey. <i>Microbe-mediated asexuality</i>

	<b>One health and the Holobiont</b> <b>Chair: Joël Doré</b> <b>Co-chair: Marc-André Selosse</b>  Salle 3000	<b>Symbiosis and reproduction</b> <b>Chair: Irene Newton</b> <b>Co-chair: Natacha Kremer</b>  Salle Bellecour
12h35-12h55	Luc Dantan. <i>Protective effect of bacteria isolated from the natural microbiota of the Pacific oyster Crassostrea gigas against OsHV-1 <math>\mu</math>Var and Vibrio aestuarianus infections.</i>	Hannes Schuler. <i>Population genetic study of a horizontal Wolbachia transmission in action</i>

12h55-14h30 Lunch on your own

*Salle 3000* 14h30-15h15 **Virus interactions in the holobionts**  
Forest Rowher (*Phage and the Origin of the Immune System*)

15h15-16h55 Selected oral communications and Teaching symbiosis session.

	<b>Virus interactions in the holobionts</b> <b>Chair: Forest Rowher</b> <b>Co-chair: Rita Rebollo</b>  Salle 3000	<b>Teaching symbiosis session</b> <b>Marc-André Selosse</b>  Forum 6
15h15-15h35	John Burns. <i>Evidence of algal virus gene expression during a salamander-alga symbiosis</i>	
15h35-15h55	Benjamin Guinet. <i>Timing of a viral domestication event in a clade of parasitic wasps</i>	
15h55-16h15		
16h15-16h35		
16h35-16h55		

16h55-17h30 Coffee break

*Salle 3000* 17h30-18h15 Opening conference  
Purification Lopez-Garcia (*Eukaryogenesis and symbiosis: recent developments*)

**Tuesday 26th**

**Salle 3000** 9h-9h45 **Immunity and symbiosis**  
Bruno Lemaître (*The foreign within: Drosophila-Spiroplasma interaction as a model of insect endosymbiosis*)

9h45-10h30 **Plant Holobiont: physiology, defense and applications for agriculture**  
Paola Bonfante (*Endobacteria, mycorrhizal fungi, plants: a symbiotic hub*)

10h30-11h Coffee break

11h-12h40 Selected oral communications. Please refer to the table below.

	<b>Plant Holobiont: physiology, defense and applications for agriculture</b> <b>Chair: Paola Bonfante</b> <b>Co-chair: Zahar Haichar</b>  Salle 3000	<b>Immunity and symbiosis</b> <b>Chair: Bruno Lemaître</b> <b>Co-chair: Anna Zaidman-Rémy</b>  Salle Bellecour
11h00-11h20	Théophile Franzino. <i>How the nature of primary metabolites exuded by plants regulates nitrate and NO reduction by rhizobacteria?</i> <b>Recipient of the ISS/Moore foundation travel grant</b>	Jang Seonghan. <i>Break the barrier: Ingested soil bacteria breach gut epithelia and stimulate humoral and cellular immunity in the bean bug Riptortus pedestris</i>
11h20-11h40	Patricia Vaz Jauri. <i>Influence of a plant growth promoting Streptomyces albidoflavus on the microbiome of two cultivars of Festuca arundinaceae</i>	Lauren Fues. <i>Complex associations between immunity and symbiont density in the facultatively symbiotic coral, Astrangia poculata</i>
11h40-12h00	Gonda Sandor. <i>Interactions of the plant metabolome and the fungal endophyte community: insights from studies in horseradish roots (Armoracia rusticana L., Brassicaceae)</i>	Sofie Burgmer. <i>Epithelial bacterial sensing regulates metabolism in Drosophila</i>
12h00-12h20	Yuling Yue. <i>Shared transcriptional response in independent lineages of land plants during plant-cyanobacteria symbiosis shed lights on its evolutionary origin</i>	Véronique Gruber. <i>Relationship between immunity and senescence processes in the control of nodule functioning in Medicago</i>
12h20-12h40	Katharina Pawlowski. <i>Specialized metabolism in the earliest divergent symbiotic Frankia clade linked to its low saprotrophic capabilities</i>	Aya Yokota. <i>Resistance to antimicrobial peptides in Caballeronia insecticola is crucial for the colonization of the Riptortus pedestris intestine</i>

12h40-14h15 Lunch on your own

**Salle 3000** 14h15-15h **Evolution of mutualistic associations: cooperation, cheating & competition**  
Kevin Foster (*Competition in bacteria and the human microbiome*)

15h-15h45 **Photosymbiosis: from lichens to xantheles and plastids**  
Fabrice Not (*Photosymbiosis in the ocean*)

15h45-16h15 Coffee break

16h15-17h55 Selected oral communications. Please refer to the table below.

	<b>Evolution of mutualistic associations: cooperation, cheating and competition</b> <b>Chair: Kevin Foster</b> <b>Co-chair: Fabrice Vavre</b>  Salle 3000	<b>Photosymbiosis: from lichens to xantheles and plastids</b> <b>Chair: Fabrice Not</b> <b>Co-chair: Marc-André Selosse</b>  Salle Bellecour
16h15-16h35	Gaëlle Lextrait. <i>Bacterial factors required for the establishment of symbiosis between Riptortus pedestris and Caballeronia insecticola</i>	Doron Pinko. <i>Chloroplast harvesting revealed in invading species expands the evolutionary range of kleptoplasty in foraminifera</i>
16h35-16h55	Sthandiwe Nomthandazo Kanyile. <i>Cuticle enhancing symbionts for a durable and waterproof armour: how nutritional symbionts enhance protection against natural enemies and desiccation in grain pest beetles.</i>	Caroline Juery. <i>Core and dispensable "transportome" genes in a planktonic photosymbiosis system.</i>
16h55-17h15	Daniel Wipf. <i>Impact of double symbiosis (arbuscular mycorrhiza and nodulation) on nitrogen uptake in the Papilionoideae</i>	Luca Borgato. <i>High cryptic diversity of lichenized Trentepohliales: phylogenetic and ecological aspects.</i>
17h15-17h35	Manuel Aranda Lastra. <i>Nutrient competition is the general mechanism underlying the cnidarian-Symbiodiniaceae symbiosis</i>	Julia Gerasimova. <i>High diversity of type I polyketide genes in lichen-forming fungi as revealed by the comparative analysis of 23 lichen genomes</i>
17h35-17h55	Anna Michalik. <i>The evolution of planthopper symbiotic systems</i>	Marie Leleu. <i>Testing the Chlamydiales footprint in the evolution of Archaeplastida</i>

18h-18h20 Group picture

18h20-21h Poster session #1 - Wine and cheese

## Wednesday 27th

- Salle 3000** 9h-9h45 **From susceptibility to resilience in global change**  
Ute Hentschel (*Microbial community dynamics in sponge symbioses under stress*)
- 9h45-10h30 **Emerging tools and approaches to study symbiosis**  
Michael Khul (*Exploring the microenvironment of aquatic symbiosis*)
- 10h30-11h Coffee break
- 11h-12h40 Selected oral communications. Please refer to the table below.

	<b>Emerging tools and approaches to study symbiosis</b> <b>Chair: Michael Khul</b> <b>Co-chair: Fabrice Not</b>  Salle 3000	<b>From susceptibility to resilience in global change</b> <b>Chair : Ute Hentschel</b> <b>Co-chair: Claire Valiente Moro</b>  Salle Bellecour
11h00-11h20	Johan Decelle. <i>Multimodal subcellular imaging to explore microbial symbiosis at the nanoscale level</i>	Sébastien Duperron. <i>Disruption of fish gut microbiota composition and holobiont's metabolome during cyanobacterial blooms: a case study of microbiome-aware ecotoxicology</i>
11h20-11h40	Nathan Vannier. <i>Meta-transcriptomic profiling of synthetic microbial communities identifies microbial genes determining root-colonization potential</i>	Débora S. Raposo. <i>Flexible diatom symbiosis in a larger benthic foraminifera along its invasion gradient in the Mediterranean Sea</i>
11h40-12h00	Baptiste Genot. <i>New imaging and molecular biology tools for amphibian-algae symbiosis studies.</i>	Timothy Swain. <i>Heightened frequency of association with thermotolerant Symbiodiniaceae correlates with bleaching-susceptibility only among vertically transmitting coral species</i>
12h00-12h20	Stéphanie Barnay-Verdier and Clara Fricano. <i>In vitro Symbiosis System: an innovative approach for deciphering Cnidarian-Dinoflagellate symbiosis set-up</i>	Anne Duploux. <i>Investigating changes in wildlife associated microbial diversity between natural and disturbed habitats</i>
12h20-12h40	Thomas Krueger. <i>From lists to function – Spatial proteomics as a tool to map the protein cellular landscape of coral symbionts</i>	Aurélien Vigneron. <i>Symbiosis contribution to <i>Oryzaephilus surinamensis</i> cold resistance</i>

12h40- 14h00 Lunch on your own

14h00-19h30 Free afternoon

- Wine cellar visit (transfer by bus)
- Lyon guided tours
- Scientific mediation for the general public

19h30 Gala Dinner (Palais de la bourse)

## Thursday 28th

**Salle 3000** 9h-9h45 **Invertebrate symbionts: from endosymbiosis to animal farming**  
Martin Kaltenpoth (*Symbiotic microbes as driving forces of evolutionary innovation in leaf beetles*)

9h45-10h30 **Marine holobionts: from littoral to deep sea**  
Jillian Petersen (*In symbiosis since the Silurian: Ecology and evolution of host-microbe interactions in marine lucinid clams*)

10h30-11h Coffee break

11h-12h40 Selected oral communications. Please refer to the table below.

	<b>Invertebrate symbionts: from endosymbiosis to animal farming</b> <b>Chair: Martin Kaltenpoth</b> <b>Co-chair: Anna Zaidman-Rémy</b>  Salle 3000	<b>Marine holobionts: from littoral to deep sea #1</b> <b>Chair: Jillian Petersen</b> <b>Co-chair: François Lallier</b>  Salle Bellecour
11h00-11h20	Elad Chiel. <i>A novel Sodalis sp. symbiont of the parasitic wasp Spalangia cameroni: Acquisition pathways and fitness effects.</i>	David Miller. <i>Inter-kingdom signalling in the coral holobiont</i>
11h20-11h40	Piotr Lukasik. <i>Abundance as a critical aspect of insect-bacterial symbioses</i>	Guoxin Cui. <i>A sea anemone cell atlas illuminates the molecular mechanisms underlying Darwin's paradox</i>
11h40-12h00	Ramya Ganesan. <i>Dynamics and molecular mechanisms of colonization in a defensive bacterial symbiont of Lagria villosa beetles</i>	François Lallier. <i>Seasonal variation of chemoautotrophy and heterotrophy in Lucinid bivalves from eelgrass meadows in Brittany</i>
12h00-12h20	Eva Novakova. <i>Extremely reduced supergroup F Wolbachia: transition to obligate insect symbionts</i>	Victoria Sharp. <i>Assessing the relationship between symbiont identity and host health in the Cassiopea xamachana holobiont.</i> <b>Recipient of the ISS/Moore foundation travel grant</b>

	<p><b>Invertebrate symbionts: from endosymbiosis to animal farming</b>  <b>Chair: Martin Kaltenpoth</b>  <b>Co-chair: Anna Zaidman-Rémy</b></p> <p>Salle 3000</p>	<p><b>Marine holobionts: from littoral to deep sea #1</b>  <b>Chair: Jillian Petersen</b>  <b>Co-chair: François Lallier</b></p> <p>Salle Bellecour</p>
12h20-12h40	Delaney Miller. <i>Functional diversity of the honey bee antifungal symbiont, Bombella apis</i>	Dolma Michellod. <i>Do it yourself: Symbiotic annelids are dominated by plant sterols they can synthesize de novo</i>

12h40-14h15 Lunch on your own

*Salle 3000* 14h15-15h **Coevolution in holobionts**  
Nancy Moran (*Analyzing coevolution of symbiotic partners*)

15h-15h45 **Symbiosis ecology: from ecosystem functioning to ecological networks**  
Joel Sachs (*Pangenome evolution reconciles robustness and instability of nitrogen fixation symbiosis*)

15h45-16h15 Coffee break

16h15-17h55 Selected oral communications. Please refer to the table below.

	<p><b>Coevolution in holobionts</b>  <b>Chair: Jean-Christophe Simon</b>  <b>Co-chair: Laurence Mouton</b></p> <p>Salle 3000</p>	<p><b>Symbiosis ecology: from ecosystem functioning to ecological networks</b>  <b>Chair: Joel Sachs</b>  <b>Co-chair: Marc-André Selosse</b></p> <p>Salle Bellecour</p>
16h15-16h35	Philippe Vandenkoornhuyse. <i>Evaluating the hologenome concept by analyzing the vertically-transmitted and horizontally-acquired fractions of the plant microbiota</i>	Sarah Zauner. <i>A novel symbiosis between lucinid clams and intracellular Shewanella links common marine coastal bivalves with their natural predators, molluscivore shorebirds</i>
16h35-16h55	Natacha Kremer. <i>Limited evolution of the Drosophila-Wolbachia symbiosis after experimental evolution under oxidative stress and viral infection</i>	Liam Laurent-Webb. <i>Endophytism and ectomycorrhiza, an overlooked dual ecological niche? Insights from Russula spp.</i>

	<p><b>Coevolution in holobionts</b>  <b>Chair: Jean-Christophe Simon</b>  <b>Co-chair: Laurence Mouton</b></p> <p>Salle 3000</p>	<p><b>Symbiosis ecology: from ecosystem functioning to ecological networks</b>  <b>Chair: Joel Sachs</b>  <b>Co-chair: Marc-André Selosse</b></p> <p>Salle Bellecour</p>
16h55-17h15	Ned Ruby: <i>Uncovering the role of nutritional rhythms in the squid-vibrio symbiosis</i>	Marion Lemoine. <i>Gut microbes impact on cold tolerance in Drosophila melanogaster</i>
17h15-17h35	Michael Ben-Yosef. <i>Reliable symbiont transmission: possible mediation by oviposition behavior in olive flies (Bactrocera oleae)</i>	Rémi Petrolli. <i>Mycorrhizal networks in the epiphytic tropical environment: a case study in epiphytic orchids.</i>
17h35-17h55	Aileen Berasategui. <i>Secondary metabolites of Escovopsis, a parasite of fungus-farming ants, underlie host-pathogen coevolution</i>	Anton Strunov. <i>How to explain a recent global replacement of wMelCS Wolbachia by wMel strain?</i>

18h-21h Poster session #2 - Wine and cheese

### Friday 29th

<i>Salle 3000</i>	9h00-9h45	<p><b>Development &amp; symbiosis</b>  Margaret McFall-Ngai (<i>Early events in the recognition and engagement of a coevolved symbiont: insights from the squid-vibrio association</i>)</p>
	9h45-10h30	<p><b>Symbioses for alternative agricultures</b>  Gabriele Berg (<i>Understanding the plant-microbe symbiosis for plant and planetary health</i>)</p>

10h30-11h Coffee break

11h-12h40 Selected oral communications. Please refer to the table below.



	<b>Development &amp; symbiosis</b> <b>Chair: Margaret McFall-Ngai</b> <b>Co-chair: Natacha Kremer</b> Salle 3000	<b>Symbioses for alternative agricultures</b> <b>Chair: Gabriele Berg</b> <b>Co-chair: Zahar Haichar</b>  Salle Bellecour
11h00-11h20	William Burgess. <i>Bacterial diversity in egg capsular fluid of the spotted salamander <i>Ambystoma maculatum</i> decreases with embryonic development</i>	Marina Omacini. <i>Endophytes and mycorrhiza; out of sight, but not out of smell</i>
11h20-11h40	Maria Cristina Motta. <i>Endosymbiosis in Trypanosomatids: Further Insights into Cell Evolution</i>	Pablo Adrián García-Parisi. <i>Fungal endophytes, rhizobia and mycorrhiza in agroecosystems: interactive implications for the co-provision of ecosystem services</i>
11h40-12h00	Inès Pons. <i>For the road: Calibrated maternal investment in light of extracellular symbiont transmission</i>	Yehuda Izraeli. <i>Microbial tenants of the parasitoid <i>Anagyrus vladimiri</i> (Hymenoptera: Encyrtidae), a natural enemy of mealybugs</i>
12h00-12h20	Monica Medina. <i>Microbial-host codevelopment in the jellyfish <i>Cassiopea xamachana</i>, a model organism for cnidarian photosymbiosis</i>	Maria Dally. <i>The association of symbiotic <i>Rickettsia</i> with omnivorous mirid bugs (Hemiptera)</i>
12h20-12h40	Mariana Galvão Ferrarini. <i>Unraveling the molecular bases of host-endosymbiont interactions at critical developmental stages</i>	Jie Hu. <i>The neighbourhood effect of weeds on crop root endospheric mycobiota</i>

12h40-14h00 Lunch on your own

14h00-15h40 Selected oral communications. Please refer to the table below.

	<b>Marine holobiont #2 / tools #2</b> <b>Chair: François Lallier</b> <b>Co-chair:</b>  Salle 3000	<b>Invertebrate nutritional symbiosis</b> <b>Chair: Anna Zaidman-Rémy</b> <b>Co-chair: Aurélien Vigneron</b>  Salle Bellecour
14h00-14h20	Margaret A. Vogel. <i>Regulation of Diversity in Marine Host-Associated Bacterial Communities</i>	Emmanuelle Jousset. <i>Are new nutritional symbionts a source of ecological innovation in aphids di-symbiotic systems?</i>

	<p><b>Marine holobiont #2 / tools #2</b>  <b>Chair: François Lallier</b>  <b>Co-chair:</b></p> <p>Salle 3000</p>	<p><b>Invertebrate nutritional symbiosis</b>  <b>Chair: Anna Zaidman-Rémy</b>  <b>Co-chair: Aurélien Vigneron</b></p> <p>Salle Bellecour</p>
14h20-14h40	Ehsan Kayal. <i>Amoebophrya</i> , a zombifying parasite with great appetite	Elisa Dell'Aglio. <i>Endosymbiont dynamics and its effects on weevil host fitness are driven by nutrient availability</i>
14h40-15h00	Justin Maire. <i>Unveiling interactions between coral photosymbionts (Symbiodiniaceae) and novel Chlamydiae</i>	Yuval Gottlieb. <i>From mutualism to parasitism: on the symbiosis axis in ticks.</i>
15h00-15h20	Charlotte Lekieffre. <i>Cryo-electron microscopy to study symbiotic associations in marine plankton</i>	Marleny García-Lozano. <i>Origin and molecular evolution of a pectinolytic symbiosis in leaf beetles</i>
15h20-15h40	Emmanuelle Botte. <i>Symbio-chip: a new microfluidic device to isolate and grow "dark matter microbes" associated with marine sponges.</i>	Michael Middlebrooks. <i>The kleptoplastic sea slug Elysia papillosa preferentially chooses inferior algae for photosynthesis</i>

15h40-16h Prizes and closing