

PROGRAM

Sunday, 17 June 2018

16:00 – 20:30 Registration (Salem Waterfront Hotel & Suites)

17:00 – 20:30 Welcome Reception

Monday, 18 June 2018

07:00 - 08:30 Breakfast

08:30 - 09:00 Official welcome to “*Wolbachia* on the Waterfront” and opening remarks,
Barton Slatko

Music: “On The Waterfront”, in honor of the 100th anniversary of
composer Leonard Bernstein’s birth

09:00 - 09:30 Opening lecture: **Sir Richard Roberts** (NEB) - “The Nobel Laureates
Campaign Supporting GMOs”

SESSION 1: THE BIOLOGY OF WOLBACHIA - OVERVIEW

Chair: **Barton Slatko**

09:45 - 10:05 **Michael Gerth**: Molecular strain characterization in *Wolbachia*
phylogeny and evolutionary ecology

10:05 - 10:25 **Amelia Lindsey**: Mechanisms of establishing symbiosis in *Wolbachia*

10:25 – 10:45 **Jennifer Morrow**: Symbionts in waiting – the dynamics of incipient
endosymbiont complementation and replacement in minimal bacterial
communities of insects

10:45 - 11:10 Break

SESSION 2: REPRODUCTIVE PARASITOLOGY I

Chairs: **JenWhite & Alison Ravenscraft**

11:10 - 11:30 **Dylan Shropshire**: A single prophage WO gene rescues cytoplasmic
incompatibility in *Drosophila melanogaster*

11:30 - 11:50 **John Beckmann**: name names: substrates and suppressors of CidB, the
CI inducing deubiquitylase

11:50 - 12:10 **Mark Hochstrasser**: Toxin-Antitoxin Modules Drive Cytoplasmic
Incompatibility by Intracellular *Wolbachia* Bacteria

12:10 - 12:30 **Brittany Leigh**: What is the role of phage WO in cytoplasmic
incompatibility?

12:30 - 14:00 Lunch

12:30 – 14:00 Teacher Education Forum

SESSION 3: CELL BIOLOGY I
Chairs: **William Sullivan & Ann Fallon**

- 14:00 - 14:20 **Frederic Landmann:** *Wolbachia* stimulate egg production and are essential to the germline stem cell homeostasis
- 14:20 - 14:40 **Denis Voronin:** How *Wolbachia* survive in eukaryotic cells? Focus on host defense and metabolic processes altered by bacteria
- 14:40 - 15:00 **Irene Newton:** Evolution and functional characterization of *Wolbachia* type IV secretion substrates
- 15:00 - 15:20 **Benjamin Herran:** Impact of the *Wolbachia* endosymbiont on the AGH pathway in the common woodlouse (*Armadillidium vulgare*)
- 15:20 - 15:40 Break

SESSION 4: EVOLUTION and ECOLOGY I
Chairs: **Ben Makepeace & Michael Gerth**

- 15:40 - 16:00 **Michael Turelli:** Tempo and Mode of *Wolbachia* Acquisition across *Drosophila*
- 16:00 - 16:20 **Brandon Cooper:** Comparative population genomics demonstrates introgressive and horizontal transfer of *Wolbachia* among hybridizing *Drosophila yakuba*-clade hosts
- 16:20 - 16:40 **Alison Ravenscraft:** Developing the true bug-*Burkholderia* symbiosis as a model for studying environmental symbiont acquisition
- 16:40 - 18:00 POSTER SESSION I
- 18:15 - 19:15 Special Event: Trolley Ride thru Salem
- 19:30 - 21:00 Dinner (BBQ – Salem Waterfront Hotel)

Tuesday, 19 June 2018

- 07:00 - 08:30 Breakfast
- 08:30 – 08:40 Announcements

SESSION 5 - GENOMICS I
Chairs: **Jeremy Foster & Matthew Chung**

- 08:40 - 09:00 **Mark Gasser:** *w*Ana Genome from MinION Long-Read Sequencing Data: DNA Preparation to Assembly
- 09:00 - 09:20 **Emilie Lefoulon:** Large Fragment Targeted Enrichment Capture of *Wolbachia* genomes to diversity study: Supergroup J *Wolbachia* is not yet buried

- 09:20 - 09:40 **Robin Bromley:** *Wolbachia* Lateral Gene Transfer Events in Insects: A Whole Genome Analysis of Bugs and Beetles
- 09:40 - 10:00 **Alistair Darby:** Multiple Lateral Genetic Transfers between *Wolbachia pipientis* and *Aedes albopictus*
- 10:00 - 10:20 **Manabu Ote:** RNAs as potential targets for *Wolbachia*-mediated phenomena
- 10:20 - 10:45 Break

SESSION 6: REPRODUCTIVE PARASITOLOGY II
Chairs: **Markus Riegler & Brittany Leigh**

- 10:45 - 11:05 **Hiroshi Arai:** The third Male Killer: Characterization of Male-killing *Wolbachia* in oriental tea tortrix *Homona magnanima*
- 11:05 - 11:25 **Maki Inoue:** Late male killing caused by novel RNA viruses Partitiviridae in a tea pest, *Homona magnanima*
- 11:25 - 11:45 **Daisuke Kageyama:** A maternally transmitted male killer in *Drosophila bauraria*: Partivirus as a reproductive manipulator of insects?
- 11:45 - 12:05 **Toshiyuki Harumoto:** Male-killing toxin produced by a bacterial symbiont
- 12:05 - 12:25 **Jessie Perlmutter:** *wmk* is a *Wolbachia* prophage gene that kills male *Drosophila*
- 12:25 - 13:30 Lunch
Free Afternoon and Evening

Wednesday, 20 June 2018

- 07:00 - 08:30 Breakfast
- 08:30 - 08:40 Announcements

SESSION 7: EVOLUTION and ECOLOGY II
Chairs: **Amy Truitt & Lauren Gordon**

- 08:40 - 09:00 **Xiao-Yue Hong:** Incidence of bacterial endosymbionts in spider mites associated with local environments and host plants
- 09:00 - 09:20 **Ben Makepeace:** Multi-locus sequence typing of the sheep tick *Ixodes ricinus* and its symbiont *Candidatus Midichloria mitochondrii* across Europe reveals evidence of co-cladogenesis in Scotland
- 09:20 - 09:40 **Amy Truitt:** *Wolbachia* modifies thermal preference in *Drosophila melanogaster*
- 09:40 - 10:00 **Rohini Singh:** *Wolbachia* skews social and life history traits and reproductive investment in pharaoh ants
- 10:00 - 10:20 **William Sullivan:** *Wolbachia*, leafhoppers and the dark side of symbiosis
- 10:20 - 10:45 Break

SESSION 8: GENOMICS II

Chairs: **Alistair Darby & Emilie Lefoulon**

- 10:45 - 11:05 **Didier Bouchon**: Genomic insights into the pathogenicity of *Rickettsiella* spp., intracellular bacteria of arthropods
- 11:05 - 11:25 **Amanda Brown**: Genomics of a *Cardinium-Wolbachia* dual endosymbiosis in a plant-parasitic nematode
- 11:25 – 11:45 **Alexandra Grote**: Using metabolic networks to characterize the symbiosis between *Wolbachia* and filarial nematodes, and identify novel drug targets
- 11:45 – 12:05 **Julie Dunning Hotopp**: The Stage-Specific Transcriptome of the *Wolbachia* Endosymbiont of *Brugia malayi* wBm through the Nematode Lifecycle
- 12:05 - 12:25 **Guilherme Baiao**: The effect of *Wolbachia* on gene expression in *Drosophila paulistorum*
- 12:25-14:00 Lunch

SESSION 9: PATHOGEN INTERACTIONS I

Chairs: **Jason Rasgon & Fabio Gomes**

- 14:00 - 14:20 **Tamanash Bhattacharya**: Gaining a mechanistic insight into *Wolbachia*-mediated virus resistance
- 14:20 - 14:40 **Einat Zchori-Fein**: Insect symbionts as bio-control agents against plant pathogens
- 14:40 - 15:00 **Elizabeth McGraw**: Artificial selection on *Wolbachia*-mediated blocking of dengue virus
- 15:00 - 15:20 **Zhiyong Xi**: Developing *Wolbachia* to combat mosquito-borne diseases
- 15:20 - 15:40 Break

SESSION 10: CELL BIOLOGY I

Chairs: **Frederic Landmann & Irene Newton**

- 15:40 - 16:00 **Horacio Frydman**: Flies and *Wolbachia* talk using *Wnt* sign(aling) language
- 16:00 - 16:20 **Shelbi Russell**: *Wolbachia* and host germline components compete for kinesin-mediated transport to the posterior-pole of the *Drosophila* oocyte

OTHER SYMBIONTS I

Chairs: **Molly Hunter & Steve Perlman**

- 16:20 - 16:40 **Matthew Chung**: A taxonomic analysis of the Rickettsiales using core genome alignments to recommend species guidelines

- 16:40 - 17:00 **Lauren Gordon:** Functional genomics approaches to study the non-protective phenotype of the endosymbiont, *Sodalis glossinidius*
- 17:00 – 17:20 **Takema Fukatsu:** Recurrent replacement of eroding ancient endosymbiont by domesticated fungal pathogens
- 17:30 – 19:00 POSTER SESSION II
- 19:30 - 21:00 Dinner (North Shore Dinner – Hawthorne Hotel)

Thursday, 21 June 2018

- 07:00 - 08:30 Breakfast
- 08:30 - 08:45 Announcements

SESSION 11: CELL BIOLOGY III

Chairs: **Denis Voronin & Horacio Frydman**

- 08:45 - 09:05 **Moises Camacho:** Colonization of *Wolbachia* Endosymbionts within *Drosophila* Ovarioles
- 09:05 - 09:25 **Elves Duarte:** Identification of the genetic basis of new overproliferative *Wolbachia* variants
- 09:25 - 09:45 **Yolande Grobler:** Novel *Wolbachia*-*Drosophila* interaction involves host translation
- 09:45 - 10:05 **Mark Deehan:** Regulation of *Wolbachia* by host autophagy across multiple cell-types in *Drosophila melanogaster*
- 10:05 - 10:25 **Ann Fallon:** Optimizing *Wolbachia* infection and maintenance in mosquito cell lines
- 10:25 - 10:45 Break

SESSION 12: REPRODUCTIVE PARASITOLOGY III

Chairs: **Seth Bordenstein & Luis Teixeira**

- 10:45 - 11:05 **Matthew Doremus:** Effects of temperature on *Cardinium*-induced cytoplasmic incompatibility in a parasitoid
- 11:05 - 11:25 **Markus Riegler:** Endosymbionts modulate sex ratio bias in *Pezothrips kellyanus* in a temperature-dependent way
- 11:25 - 11:45 **Edward van Opstal:** The maternal effect gene *Wds* controls *Wolbachia* titer in *Nasonia*
- 11:45 - 12:05 **Mylene Weill:** Genetic determinism of the high diversity of Cytoplasmic Incompatibility induced by *Wolbachia* in the mosquito *Culex pipiens*
- 12:05 - 12:25 **Jen White:** Too many cooks spoil the brew? Co-infection context influences reproductive manipulation of a linyphiid spider
- 12:25 - 14:00 Lunch

SESSION 13: OTHER SYMBIONTS II
Chairs: **Molly Hunter & Steve Perlman**

- 14:00 - 14:20 **Molly Hunter:** The rise and fall of a transformational bacterial symbiont in an invasive insect herbivore
- 14:20 - 14:40 **Jacob Russell:** Does getting defensive get you anywhere? - Dissecting the causes of rapid symbiont dynamics in the pea aphid
- 14:40 - 15:00 **Steve Perlman:** Evolution and specificity in the *Drosophila-Spiroplasma* defensive symbiosis
- 15:00 - 15:20 Break

SESSION 14: PATHOGEN INTERACTIONS II
Chairs: **Beth McGraw & Tamanash Bhattacharya**

- 15:20 - 15:40 **Jason Rasgon:** *Wolbachia* effects on arbovirus infections in mosquitoes are dependent on the mosquito species, the *Wolbachia* strain, and the viral pathogen
- 15:40 - 16:00 **Fabio Gomes:** Effect of naturally occurring *Wolbachia* in *Anopheles gambiae* mosquitoes on *Plasmodium falciparum* malaria transmission
- 16:00 - 16:20 **Heather Flores:** Inhibition of *Aedes aegypti* vector competence by *Wolbachia* is not strictly density dependent
- 16:20 - 16:40 **Mark Taylor:** A-WOL: A decade of drug discovery and development
- 16:40 - 17:00 Break
- 17:00 - 17:45 **Dan Distel:** Ocean Genome Legacy - “Ocean Genome Legacy: sharing genomes to enable science”
- 17: 45 -18:30 Announcements and New Business
- 19:30 – 21:00 Dinner (Clam Bake – Salem Waterfront Hotel)

Friday, 22 June 2018

- 07:00 - 09:00 Breakfast and Departure