

2nd IBRO School on Insect Neuroscience and *Drosophila* neurogenetics

19th August-Monday

09:00- 09:20: Welcoming from Sadiq, Lucia & Tom

09:20- 10:00: Student introductions

10:00- 10:30: Introduction to insects as model organisms (Tom)

10:30- 11:00: Coffee break

11:00- 12:00: Introduction to *Drosophila* as a model organism (Jelena)

12:00- 12:30: Introduction to Twitter and social media (Jelena)

12:30- 14:00: Lunch

14:00- 19:30:

Lab practicals. Lab practicals on *Drosophila* as a model organism and bioinformatics tools (Isa/Lucia/Jelena). Building electrophysiology amplifiers and EMG recordings (Tom/Horst/Angelo) (2 separate groups)

20th August- Tuesday

9:00-10:00: Molecular Biology (Isa)

10:00-11:00: Introduction to the physics of neural signals (Horst)

11:00-11:20: Coffee break

11:20-12:30: Introduction to neurophysiology (Tom)

14:20-19:20 p.m.

Lab practicals. Lab practicals on *Drosophila* as a model organism and bioinformatics tools (Isa/Lucia/Jelena). Building electrophysiology amplifiers and EMG recordings (Tom/Horst/Angelo) (2 separate groups)

21st August- Wednesday

9:00-10:00: Principles of biological membrane excitability (Horst)

10:00-11:00: Genetics of *Drosophila* I (Isa)

11:00-11:20: Coffee break

11:20- 12:20: The functional organisation of the nervous system (Tom)

14:00-19:00 p.m.

Lab practicals. Lab practicals on *Drosophila* as a model organism and bioinformatics tools (Isa/Lucia/Jelena). Building electrophysiology amplifiers and EMG recordings (Tom/Horst/Angelo) (2 separate groups)

22nd August- Thursday

9:00-10:00: Electrophysiological recording techniques (Horst)

10:00- 11:00: Genetics of *Drosophila* II (Isa)

11:00-11:20: Coffee break

11:20- 12:30: Genetic tools in *Drosophila* for studying the nervous system (Lucia)

14:00-19:00 p.m.

Lab practicals. Lab practicals on *Drosophila* as a model organism and bioinformatics tools (Isa/Lucia/Jelena). Building electrophysiology amplifiers and EMG recordings (Tom/Horst/Angelo) (2 separate groups)

23rd August- Friday

9:00-10:00: Introduction to the scientific method and statistics (Jelena)

10:00- 11:00: Open source software (Tom)

11:00-11:20: Coffee break

11:20- 12:20: Online resources: Pubmed, Flybase, Bloomington, etc... (Jelena)

13:30-19:00 p.m.

Lab practicals. Lab practicals on *Drosophila* as a model organism and bioinformatics tools (Isa/Lucia/Jelena). Building electrophysiology amplifiers and EMG recordings (Tom/Horst/Angelo) (2 separate groups)

24th August- Saturday

9:00-10:00: Plenary research talk from Dr. Isabel Peset

10:00- 11:00: Scientific grant writing (Sadiq)

11:00-11:20: Coffee break

11:20- 12:30: Practicals on On-line resources. Time to do Internet research on their subject of interest related to insects (Jelena)

25th August- Sunday- Field trip

26th August- Monday

9:00-10:00 : Introduction to Chemosensory systems (Lucia)

10:00-11:00 : Auditory systems (Berthold)

11:00-11:20: coffee break

11:20-12:20: *Drosophila* as a model for human diseases (Jorge)

14:00-19:30 p.m

Module specific laboratory practicals. This week students choose one of the following:

- 1- Chemosensory systems and Social behaviours: function and evolution (Lucia/Adria)
- 2- Auditory systems (Berthold & Tom)
- 3- *Drosophila* as a model for human diseases (Jorge)

27th August-Tuesday

9:00 -10:00: Non-neurodegenerative diseases in *Drosophila melanogaster* (Jorge)

10:00 -11:00 : Study of chemosensation in non-model organisms (Adria)

11:00-11:20: coffee break

11:20-12:20: Auditory systems (Berthold)

13:30-14:30 p.m.
Plenary lecture from Dr. Berthold Hedwig
14:30-19:30 p.m
Module specific laboratory practicals

28th August-Wednesday

9:00-10:00: Auditory systems (Berthold)
10:00-11:00: The use of *Drosophila* to study neurodegeneration (Jorge)
11:00-11:20: coffee break
11:20-12:20: Evolution of Chemosensory systems (Lucia)

13:30-14:30: Plenary research talk by Dr. Adria Le Boeuf
14:30-19:30 p.m.
Module specific laboratory practicals

29th August-Thursday

9:00-10:00: Pheromone and chemical communication in insects (Adria)
10-11: Auditory systems (Berthold)
11-11:20: coffee break
11:20-12:20: Ageing as a risk factor for neurodegeneration: late-onset fly models of neurodegeneration (Jorge)

13:30-19:00 p.m.
Module specific laboratory practicals

30th August-Friday

9:00-10:00: *Drosophila* as a tool for drug screening: biased and genomic approaches. (Jorge)
10-11: Auditory systems (Berthold)
11:00-11:20: coffee break
11:20-12:20: Chemosensory systems and Social behaviours: function and evolution (Lucia/Adria)

13:30-19:00 p.m.
Module specific laboratory practicals/ Preparation of presentations

31st August- Saturday

9:00- 13:00: Students presentations of practical projects

1st September- Sunday: Free

2nd September-Monday

9:00-10:00: Evolution and environmental control of body size and foraging behaviour in *Drosophila* larva (*Marta / Christen*)
10:00-11:00: General principles of vision in vertebrates and invertebrates (Alexander)
11:00-11:20: coffee break

11:20-12:20: Function and Development of Motor and Mechanosensory systems. *Jimena Berni*

13:30-19:00 p.m.

Module specific laboratory practicals. This week students choose one of the following:

- 1- How to assemble and use your own electrophysiology set-up (Horst, Robin & Tom)
- 2- Visual systems, using *Caliphora* (big flies), and *Drosophila* as models (Alex & Alexander)
- 3- Function and Development of Motor and Mechanosensory systems (Jimena & Lucia)

3rd September-Tuesday

9:00-10:00: Function and Development of Motor and Mechanosensory systems. (*Jimena*)

10:00-11:00: Evolution and environmental control of body size and foraging behaviour in *Drosophila* larva (*Marta / Christen*)

11:00 -11:20: coffee break

11:20-12:20: Phototransduction in *Drosophila* (Alex)

13:30-14:30: Plenary research talk by Dr. Tom Baden

14:30-19:30 p.m.

Module specific laboratory practicals

4th September-Wednesday

9:00-10:00: Evolution and environmental control of body size and foraging behaviour in *Drosophila* larva (*Marta / Christen*)

10:00-11:00: Fly visual processing I: Motion vision (Alexander)

11:00-11:20: coffee break

11:20-12:20: Function and Development of Motor and Mechanosensory systems. (*Jimena*)

13:30-14:30: Plenary research talk by Dr. Prieto Godino

14:30-19:30 p.m.

Module specific laboratory practicals

5th September-Thursday

9:00-10:00 Fly visual processing II: Recent developments and future directions (Alex)

10:00-11:00 Evolution and environmental control of body size and foraging behaviour in *Drosophila* larva (*Marta / Christen*)

11-11:20: coffee break

11:20-12:20: Function and Development of Motor and Mechanosensory systems. (*Jimena*)

13:30-19:00 p.m.

Module specific laboratory practicals/ Preparation of presentations

6th September-Friday

9:00-10:00 Fly visual processing III (Alex)

10:00-11:00 Evolution and environmental control of body size and foraging behaviour in *Drosophila* larva (*Marta / Christen*)

11-11:20: coffee break

11:20-12:20: Function and Development of Motor and Mechanosensory systems. (*Jimena*)

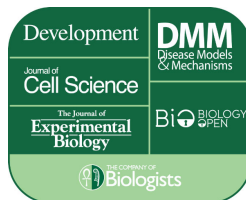
13:30-19:00 p.m.

Module specific laboratory practicals/ Preparation of presentations

7th September- Saturday

9:00- 13:00: Students presentations

16:00- 02:00: Goodbye party



Faculty

Dr. Alexander Arenz (MPI Martinried, Munich, Germany)

Dr. Tom Baden (CIN/BCCN, Tübingen, Germany)

Angelo Tedoldi (UCL, London, UK)

Dr. Jimena Berni (Dept. Zoology, Cambridge, UK)

Jorge Castillo Quan (UCL, London, UK)

Dr. Berthold Hedwig (Dept. Zoology, Cambridge, UK)

Dr. Adria Le Boeuf (CIG, Lausanne, Switzerland)

Dr. Alex Mauss (MPI Martinried, Munich, Germany)

Dr. Laura Lucia Prieto Godino (CIG, Lausanne, Switzerland)

Dr. Horst Schneider (DAQ-Solutions, Nehren, Germany)

Prof. Sadiq Yusuf (KIU, Bushenyi, Uganda)

Dr. Marta Rivalba Alba (Instituto Gulbenkian de ciencia, Portugal)

Dr. Christen Mirth (Instituto Gulbenkian de ciencia, Portugal)

Dr. Isabel Peset (University of Cambridge, UK)

Dr. Jelena Aleksic (University of Cambridge, UK)