

FLiACT Workshop 2012 on Electrophysiology in Jena

	MONDAY Dec 10th	TUESDAY Dec 11th	WEDNESDAY Dec 12th	THURSDAY Dec 13th
9:00-11:00	Elinor Thompson	Bill S. Hansson Dieter Wicher	André Fiala	Gilles Laurent
11:00-11:30	COFFEE & TEA	COFFEE & TEA	COFFEE & TEA	COFFEE & TEA
11:30-12:30	Presentation Skills	Emre Yaksi	Martin Nawrot	Gilles Laurent
12:30-13:30	LUNCH	LUNCH	LUNCH	LUNCH
13:30-14:30	Presentation Skills	Emre Yaksi	Martin Nawrot	PRACTICALS
14:30-16:00		PRACTICALS	PRACTICALS	
16:00-16:30	COFFEE & TEA	COFFEE & TEA	COFFEE & TEA	COFFEE & TEA
16:30-18:00	Presentation Skills	PRACTICALS	PRACTICALS	PRACTICALS
18:00-19:00		Case study talk: Dieter Wicher	Case study talks: Matthieu Louis & Silke Sachse	Concluding discussion & evaluation
19:00-19:30	Discussion	Discussion	Discussion	
20:00	DINNER @ hotel	DINNER @ hotel	DINNER @ hotel	FLiACT DINNER @ Ratszeise

Soft Skills Workshop	Scientific Lecture	Scientific Practical	Institute Talk	Group Discussion
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SOFT SKILLS WORKSHOP

Elinor Thompson (Barcelona Biomedical Research Park)

Say It So It Stays

Conference Presentation Skills for Scientists

Online meeting – 1 hour 30 mins

- Principles of presenting science successfully
- Scientists as audience
- The importance of purpose
- Visual aids that really aid
- Preparing for Jena

Jena workshop

0900 - 0930	Welcome to FLiACT – Matthieu Louis
0930 - 1100	Conference Presentations Course Introduction Understanding the game Purpose and message review Making your talk memorable
1100 - 1115	BREAK
1115 - 1315	Structure and organisation of your talk
1315 - 1415	LUNCH
1415 - 1520	Visuals Voice
1520 - 1535	BREAK
1535 - 1805	Individual presentations with feedback
1805 - 1830	Reflective learning

SCIENTIFIC LECTURE TOPICS

Bill S. Hansson (Managing Director, Max Planck Institute for Chemical Ecology, Jena)

Welcome and introductory note

Dieter Wicher (Max Planck Institute for Chemical Ecology, Jena)

General introduction to ion channel physiology

- Electrical properties of cell membrane (membrane capacitance + electric model), generation of action potentials
- Recording modes and equivalent circuits: intracellular recordings, voltage-clamp and current-clamp recordings
- Overview of other recording techniques

Emre Yaksi (KU Leuven)

Application of electrophysiology to *Drosophila*

- Single-sensillum recordings from the adult fly and LFP; electro-retinogram (what is it? what do we get from it?)
- Patch-clamp recording from sensory neurons: projection neurons and neurons from the auditory system? Introduction to head fixed preparation.
- Future developments: possibility to couple this preparation with behavioral assays, e.g. treadmill system.
- Current research in Yaksi lab with general emphasis on the parallels between fly and fish work

André Fiala (University Göttingen)

Introduction to optophysiology

- Functional imaging: introduction to GCaMP, Cameleon and other sensors. Principles and applications to the fly. Comparison with traditional electrophysiology. Will ephys be replaced by calcium imaging in the fly?
- Optogenetics and thermogenetics, tools and applications
- Concepts for dissecting neuronal circuits controlling and behavior

Martin Nawrot (Free University Berlin)

Introduction to data analysis

- Basic analyses of extracellular e-phys data: raw data filtering, spike sorting and the problems thereof.
- Basic spike train analyses: firing rate estimation in trial averages and single trial, measures of spike train variability.
- Neural coding and basic steps of spike response analyses towards i) tuning curves, ii) sparseness, iii) euclidean distance, iv) signal-to-noise ratio

Gilles Laurent (Max Planck Institute for Brain Research, Frankfurt)

Open questions in invertebrate sensory neuroscience

- Big challenges for the coming decades. Why addressing these questions in insects?
- Current understanding of insect olfaction: illustration of systems-neuroscience approach

GENERAL INFORMATION ABOUT PRACTICALS

- Students will be split into 6 groups with 2-3 students per group
- Equipment: 2 SSR rigs, 2 imaging rigs, 1 EAG rig, 1 patch clamp rig for in vivo recordings, 1 patch clamp rig for cell culture

A) In vivo and cell culture patch clamp recordings

instructors: Dieter, Taufia, Vard, Emre, Luis

B) Single-sensillum recordings and electro-antennograms

instructors: Elisa, Sonja

C) Calcium imaging of the adult antennal lobe

instructors: André, Silke, Veit, Martin

TRAVEL INFORMATION

WORKSHOP VENUE

Max Planck Institute for Chemical Ecology
Beutenberg Campus
Hans Knöll Str. 8, 07745 Jena, Germany
www.ice.mpg.de

How to get to the MPI:

By car

From the north (Berlin) or south (Munich), take the A9 Autobahn to Hermsdorfer Kreuz, then the A4 Autobahn in the direction of Erfurt - Frankfurt/Main. Exit at Jena Göschwitz and head towards Jena city center (Zentrum) on Rudolstädter Straße. After approx. 5 km, turn left to Winzerlaer Straße (there is a traffic light!). Follow this road and the signs to "Beutenberg Campus." Turn left to Hans Knöll Straße, the campus site. The institute is the building straight ahead at the top of the hill.

By train

From the north (Berlin), south (Munich) or east (Dresden): Take the train to Jena Paradies station. Walk for approx. 10 minutes to the city center bus terminal located along Teichgraben (Am Volksbad, then turn left to Grietgasse, then turn right to Holzmarkt, bus stop Teichgraben in front of Hotel Ibis). Take bus line No. 10 (Damaschkeweg), 11 (Beutenberg Campus), 12 (Bahnhof Göschwitz), or 13 (Bahnhof Göschwitz/Leutra) and exit at the Beutenberg Campus bus stop. Turn right to Hans Knöll Straße and walk straight uphill to the institute.

From the west (Frankfurt/Main): Take the train to Jena West station. You have to change for Jena in either Weimar or Erfurt. Walk for approx. 3 minutes down Westbahnhofstraße and turn left, walk through the underpass; cross the street to the bus stop Westbahnhofstraße and follow the directions above.

By plane

From Leipzig-Halle Airport: Take a shuttle or any train to Leipzig's main station (Hauptbahnhof). Take the train to Jena Paradies station and follow the directions above.

From Frankfurt/Main Airport: Take the S-Bahn or any train to Frankfurt/Main main station (Hauptbahnhof). Take the train to Jena West and follow the directions above.

FLiACT Dinner (Dec 13th):

Ratszeise
Markt 1, 07743 Jena, phone: +49-3641-470600
www.ratszeise.de

ACCOMODATION

Thüringer Sozialakademie – Tagungshotel

Am Stadion 1, D-07749 Jena, phone +49-3641-3030

<http://www.sozialakademie.info/uebersicht-tagen-und-uebernachten.html>

Check in on Sunday, Dec 9th: 06.30 - 11.00 and 16.00 - 22.00!!!



How to get to the hotel (Thüringer Sozial Akademie)

From Jena West train station:

Take bus line No. 15 in front of the station (Rautal) to the city centre bus terminal located along Teichgraben (or walk for approx. 2 minutes down Westbahnhofstraße and turn right to the bus stop Westbahnhofstraße, where you can take bus line No. 10, 11,12, or 13 (Stadtzentrum) to the city center. In the city center (Holzmarkt), take tram line No. 5 or 35 (Lobeda-Ost) to the stop "Sportforum". Cross the road (Stadtrodaer Straße) and walk approximately 100 m to the left.

From Jena Paradies train station:

Take exit to the city (Ausgang Stadt). There is a tram station on the right (tram stop: Paradiesbahnhof), where you can take a tram No. 1, 4, 5 or 35 (Lobeda-West or Lobeda-Ost). Exit at "Sportforum" (two stops). Cross the road (Stadtrodaer Straße) and walk approximately 100 m to the left.

From the Autobahn A4

Exit at "Jena-Zentrum" (54) and head towards Jena city center (Zentrum/Stadion) on Stadtrodaer Straße. Turn right at the traffic lights opposite the sports stadium (Stadion). Turn into the parking lot on the right. Hotel entrance is across the parking lot.

CONTACT INFORMATION:

Silke Sachse
MPI for Chemical Ecology
Dept. Evolutionary Neuroethology
Hans-Knoell-Strasse 8, D-07745 Jena , Germany
phone: +49-3641-57-1416
fax: +49-3641-57-1402
email: ssachse@ice.mpg.de

Swetlana Laubrich (secretary)
phone: +49-3641-57-1401
email: slaubrich@ice.mpg.de

PARTICIPANTS

FLiACT Fellows

Arrival: Sunday, Dec. 9th; Departure: Friday, Dec. 14th

Name	Lab	Email
Valentina Ferlito	Armstrong Lab	ferlitovalentina@gmail.com
Taufia Hussain	Sachse / Hansson Lab	thussain@ice.mpg.de
Marianthi Karageorgi	Gompel / Prud'homme Lab	mkarageorgi@yahoo.com
Guangda Liu	Nicasy Lab	guangda0101@gmail.com
Ivan Larderet	Specher Lab	ivan.larderet@unifr.ch
Tanmay Nath	Weyn Lab	meet10may@gmail.com
Sercan Sayin	Kadow Lab	sercan.sayin@gmail.com
Raiyashree Sen	Dickson Lab	rajyashree.sen@gmail.com
Ibrahim Tastekin	Louis Lab	ibrahimtastekin@gmail.com
Samuel J. Walker	Ribeiro Lab	samuel.walker@neuro.fchampalimaud.org
Simon Weinberger	Hassan Lab	simon.weinberger@cme.vib-kuleuven.be

External participants

Arrival: Monday, Dec. 10th; Departure: Friday, Dec. 14th

Name	Lab	Email
Abud Farca	Sprecher Lab	abud.farca@unifr.ch
Luis M. Franco	Yaksi Lab	lmfrancomendez@gmail.com
Marta Koch	Hassan Lab	marta.koch@cme.vib-kuleuven.be
Laurence Lewis	Kadow Lab	llewis@neuro.mpg.de
Josh Lillvis	Dickson Lab	joshua.lillvis@imp.ac.at

Instructors:

André Fiala, Uni Göttingen
Bill S. Hansson, MPI Jena
Gilles Laurent, MPI Frankfurt
Martin Nawrot, FU Berlin
Elinor Thompson, Barcelona Biomedical Research Park
Dieter Wicher, MPI Jena
Emre Yaksi, KU Leuven

Organizers:

Gabrielle Anne Bertier, CRG Barcelona
Swetlana Laubrich, MPI Jena
Matthieu Louis, CRG Barcelona
Silke Sachse, MPI Jena