PROGRAM

"Electrosensory system, development and evolution & Reproduction of tropical freshwater fishes with Special focus on gymnotiforms and mormyrids"

MÓDULE I "The electrosensory system, development and evolution "	
Monday 4	
9:00 – 09:05	Course Presentation. ***M. Castelló***
.09:05 – 10:05	Vertebrate electroreception in non-teleosts and teleosts, including hypotheses about convergent evolution of teleost electroreceptors. ***C. Baker***
10:05 – 11:05	Notes on Electroreception's Past. ***P. Moller***
11:05 – 12:00	The electroreceptive window to the world. ***A. Caputi***
14:00 – 18:00	**Practical activity:** Macro and microscopic structure of the electromotor system in Gymnotids and Mormyrids. ***A. Caputi, M. Castelló and F. Kirschbaum.***
Tuesday 5	
9:00 – 10:00	Motor command of the electric organ discharge in mormyrid electric fish: what stages does a motor command chain need? ***K. Grant***
10:00 – 11:00	Neural mechanisms for synchronization - lessons from the organization of electric organ discharge (EOD). ***P. Aguilera***
11:00 –12:00	"Exploring conserved mechanism of neural-dependent tissue regeneration in Gymnotiforms" ***G. Unguez***
14:00 – 18:00	**Practical activity:** From the EO to the EOD. The fish body as an electric source. ***A. Rodríguez y C. Pereira***
Wednesday 6	
9:00 – 10:00	Mathematical models of physical images. ***R. Budelli***
10:00 – 11:00	Electric image modeling and processing. ***L. Gómez***
11:00 –12:00	Sensorimotor coordination: pathways linking perception to action in mormyrid electric fish. ***K. Grant***
14:00 - 18:00	**Practical activity**: A field potential analysis of the electromotor system. ***P. Aguilera y A. Caputi***
Thursday 7	
9:00 – 10:00	Weakly electric fish: models in neuroethology. ***A. Silva***
10:00 – 11:00	Reproduction and development of the electric system in gymnotiform and mormyroid fishes - an overview. **F. Kirschbaum**
11:00 – 12:00	Weakly electric fish as models to study postnatal cell proliferation & neurogenesis. ***M. Castelló***
14:00 – 17:00	**Practical activity:** Depth perception and motion parallax in electrolocation: a modeling approach. ***F. Pedraja***
Friday 8	
9:00 – 10:00	Development and evolution of electric organs in gymnotiform fishes. ***F. Kirschbaum***
10:00 – 11:00	Development of electromotor and electrosensory components of the electrosensory system in *Mormyrus rume*. ***K. Grant***
11:00 – 12:00	Development and evolution of electric organs in mormyrid fishes***. F. Kirschbaum***
14:00 – 17:00	**Practical activity:** Postnatal cell proliferation and neurogenesis in pulse type weakly electric fish. ***M. Castelló***

Saturday 9 – Field Trip to Laguna del Sauce
Analysis of lake´s ecology. ***Dr. Nestor Mazeo & FrancoTeixeira de Mello***

MÓDULE II - "Reproduction of tropical freshwater fishes with special focus on gymnotiforms and mormyrids

Monday 11	
9:00 – 10:15	Ecology of tropical habitats and sytematic composition of tropical freshwater fish communities. ***F. Kirschbaum***
10:15 – 12:00	Seminar I Discussion of research article. ***A. Caputi***
14:00 – 17:00	**Practical activity:** Development of the electrosensory-electromotor system of weakly electric fish. ***K. Grant, F. Kirschbaum and M. Castelló***
Tuesday 12	
9:00 – 10:15	Anatomical, behavioral, physiological and biochemical adaptations of tropical freshwater fishes. ***F. Kirschbaum***
10:15 – 12:00	Seminar II Discussion of research article. ***P. Aguilera***
14:00 – 17:00	**Practical activity:** Analysis of the fish community structure of the Laguna del Sauce. ***F. Kirschbaum***
Wednesday 13	
9:00 – 10:15	Reproduction of freshwater fishes - general aspects. ***F. Kirschbaum***
10:15 – 12:00	Seminar III Discussion of research article.
14:00 – 17:00	**Practical activity:** General anatomy of mormyrid and gymnotiform fishes & Stadification of gonadal maduration in weakly electric fish: Macroscopic analysis. ***F. Kirschbaum and M. Castelló***
Thursday 14	
9:00 – 10:15	Reproduction of gymnotiform fishes. ***F. Kirschbaum***
10:15 – 12:00	Seminar IV Discussion of research article. ***M. Castelló***
14:00 – 17:00	**Practical activity:** Stadification of gonadal maduration in weakly electric fish: microscopic analysis. ***M. Castelló and F. Kirschbaum***
Friday 15	
9:00 – 10:00	Reproduction of mormyrid fishes. ***F. Kirschbaum***
10:00 – 12:30	**Practical activity:** Setting up an aquarium for reproduction of weakly electric fish. ***F. Kirschbaum***
14:00 – 17:00	Students presentation: Results of practical activities
17:00 – 19:00	**Closing reception**