

NEURAL DEVELOPMENT AND NEURODEVELOPMENTAL DISORDERS

COURSE ORGANIZERS:

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PROGRAM in short

This course will introduce students to cutting-edge research on topics ranging from brain patterning, neurogenesis, cell fate specification, synapse formation and plasticity, to new insights on genetic, clinical, therapeutic and cognitive aspects of neurodevelopmental disorders. Participants will have the opportunity to directly acquire from influential scientists in-depth knowledge of novel, state of the art approaches and technologies to investigate specific aspects of nervous system development and disease diagnosis. See below for a detailed program.

SCHEDULE and LOCATION

The course takes place at the Department of Life Sciences and Systems Biology (Via Accademia Albertina 13, Torino) & Department of Neuroscience "Rita Levi Montalcini" (C.so M. D'Azeglio 52, Torino), University of Turin – Italy. The course will be held **SEPTEMBER 22-26, 2014**

REGISTRATION

The total number of participants will be limited to 50 students, and registrations will be dealt with on a first come, first served basis. Registration may close earlier than indicated in case the maximum number of participants will be reached.

Email address for registrations: **dottorato.neuroscienze@unito.it**

STIPENDS

In the context of a new program for integrated higher education and training in Neuroscience, FENS in partnership with IBRO provides stipends of 750 EUR for international students interested in attending this course.

The application form for a FENS-IBRO stipend is available here: [apply here](#)

Deadline: August 15, 2014

DETAILED PROGRAM

The course is designed to maximize the interaction between the speakers and participants, by creating a friendly and unthreatening environment. Lectures will be held in the morning. In the afternoon, students will be asked to actively participate to focus groups that will provide additional opportunities for interactions among junior and senior researchers, and foster collaborations as well as further discussion. In addition, students will have the opportunity to present and discuss their current research project during daily poster sessions. Time will be reserved for social activities and local sightseeing in order to create a relaxing and enjoyable environment suitable to maximize the interaction between the speakers and participants. Students will be encouraged during this time to reinforce and challenge the scientific concepts that have emerged during the daily discussions.

Monday - September 22 - Department of Life Sciences and Systems Biology

9.00-9.30 Welcome and introduction

Topic 1. Neural development: patterning and specification

9.30-12.30 Lectures

M. Studer (Univ. of Nice) "Building up cortical organization: molecular and cellular mechanisms"

K. Leto (Univ. of Turin) "Development and specification of cerebellar phenotypes"

D. Ragozzino (Univ. of Rome) "Microglia and brain development"

12.30-14.00 lunch

14.00-16.00 Focus groups

1.A "Generation of interneuron diversity in the brain"

S. De Marchis (Univ. of Turin)

1.B "Synapse formation in the brain"

M. Sassoè (Univ. of Turin)

16.00-17.00 Synthesis and conclusions

Tuesday - September 23 - Department of Life Sciences and Systems Biology

Topic 2. Neural development: environmental influence

9.00-12.00 Lectures

N. Berardi (Univ. of Florence and CNR, Pisa) "Enriched environment and cerebral plasticity: from development to brain repair"

V. Broccoli (San Raffaele Hospital, Milan) "Epigenetic mechanisms of neuronal differentiation during brain development"

C. Eva (Univ. of Turin) "Effect of early life experience on brain development and vulnerability to psychopathology"

12.00-14.00 lunch and poster session

14.00-16.00 Focus groups

2.A "iPS methodologies and applications"

A. Buffo (Univ. of Turin)

2.B "Extrinsic modulators of brain plasticity "

D. Carulli (Univ. of Turin)

16.00-17.00 Synthesis and conclusions

Wednesday - September 24 - Department of Life Sciences and Systems Biology

Topic 3. Animal models and biological determinants of neurodevelopmental disorders

9.00-12.30 Lectures

M. Giustetto (Univ. of Turin) "Rett syndrome: models of preclinical research"

L. Villard (Inserm, Marseille) "From bench to bedside in Rett syndrome"

F. Di Cunto (Univ. of Turin) "Mechanisms, models and possible intervention points for human microcephaly"

12.30-14.00 lunch and poster session

14.00-16.00 Focus groups

3.A "Modelling neural disease for translational applications"

M. Giustetto (Univ. of Turin)

3.B "Neuroglial interactions in brain diseases"

A. Buffo (Univ. of Turin)

16.00-17.00 Synthesis and conclusions

Thursday - September 25- Department of Life Sciences and Systems Biology

Topic 4. Neurodevelopmental disorders: genetic and clinical perspective

8.30-13.00 Lectures

A. Brusco (Univ. of Turin) "Genetics of neurodegenerative disorders involving cerebellum: hereditary ataxias"

G.B. Ferrero (Univ. of Turin) "Copy number variants and neurodevelopmental phenotypes: a pediatric perspective"

P. Striano (Ist. Gaslini, Genoa) "Clinical significance of rare copy number variations in epilepsy"

S. Russo (Ist. Auxologico Italiano, Milan) "From diagnosis to disclosure of novel implicated genes by exome sequencing"

13.00-14.00 lunch

14.30-17.30 Neuroscience in Turin. G. Giacobini "An historical sketch and an introduction to museum collections" - Visit to the Museum of Human Anatomy and to the Lombroso Museum of Criminal Anthropology - Department of Neuroscience "Rita Levi Montalcini".

Nightly social event organized by local PhD students

Friday - September 26- Department of Life Sciences and Systems Biology

Topic 5. Neurodevelopmental disorders: cognitive perspective

09.00-12.30 Lectures

L. Colle (Univ. of Turin) "Cognitive functions and dysfunctions in autism spectrum disorder"

S. Gori (Univ. of Padua) "Visual perception and attention in neurodevelopmental disorders"

G. Cioni (IRCCS Stella Maris Foundation, Pisa) "Early intervention in infants with neurodevelopmental disorders"

12.30-14.00 lunch and poster session

14.00-16.00 Focus groups

5.A "Cognitive behavioural interventions in autistic spectrum disorders: strengths and weakness"

L. Colle (Univ. of Turin)

16.00-17.00 Concluding remarks