The Neurosciences Summer Seminar "Cognition: From Genes to Function" invites applications (http://davinci.crg.es/soria/index.php)

Convento de la Merced
Sede de la Fundación Duques de Soria
C/ Santo Tomé, 6
Soria, Spain

(http://www.turismocastillayleon.com/cm/tkRegion?formName=regions&locale=en_UK&onlyText=false&idContent=7682)

The course is directed to PhD students or young post-docs in Neuroscience with a minimum research background. The seminar will bring together leading experts in cognitive processes at the genetic, cellular and integrative level, and in development and disease models related to cognition. Lectures will be designed to provoke discussion, criticism and reflection. It will proceed as a "debate forum" where renowned specialists will participate together with younger specialists, potentiating the debate to foster an intense exchange of ideas and opinions. In the course of the Seminar, the lecturers will highlight in 40 minutes the most relevant points of their presentation, leaving more detailed aspects for in-depth discussion immediately afterwards.

The School will be held in Soria from July 17 - 21, 2006. This area has superbly attractive spots and an overwhelming list of possibilities.
It is crossed by the river Duero and has superb remains of the pre-Roman and Roman civilisations.

Topics: Genome plasticity and cognitive evolution in hominoids; Genetic contribution to cognitive ability; Neurogenetic events in the human cerebral cortex - proliferation, migration and cell lineages; synaptogenesis, development of dendrites and formation of neural connectivity; genetic and molecular mechanisms of synaptic plasticity; characteristics of cortical areal functioning; characteristics of early cortical network; plasticity of hippocampal circuitry and signaling molecules; development of working memory and executive functions in model systems and normal and WBS children; neuroimaging of cortical development in cognitive disorders; animal models of developmental neuropathologies; generic vs. species-specific features of human neocortical evolution. A variety of techniques will also be critically considered including genetic manipulation and selection, in vivo electrophysiological recording, functional imaging.

Posters or short oral presentations can be presented by the students in two sessions.
A total of 20 students will be accepted. Fellowships are available (http://davinci.crg.es/soria/finantial.php).

Co-directed by
MARA DIERSSEN
Centro de Regulación Genómica, Barcelona
CARLOS BELMONTE

Real Academia de Ciencias Exactas, Físicas y Naturales

PRELIMINARY PROGRAM

July 17th, The Genetic Level: Bridging Genes to Cognition

Genome plasticity and cognitive evolution in hominoids L. Pérez-Jurado (Universitat Pompeu Fabra)

Synapse proteome and phosphoproteome Douglas Armstrong (University of Edinburgh)

Genetic contribution to cognitive ability J. L. Paya-Cano (Institute of Psychiatry)

Cognitive malfunctioning uncovers the genetic mechanisms of learning and memory P. Maciel (Universidade do Minho)

July 18th, The Origin: Building and wiring the cognitive brain

Specification of the distribution of functional units in the cerebral cortex S. Martinez (Instituto de Neurociencias de Alicante)

Developmental mechanisms underlying the generation of cortical interneuron diversity O. Marin (Instituto de Neurociencias de Alicante)

The Cellular Level: Synaptic plasticity and learning

Protein synthesis-dependent long-term potentiation (LTP) A. Barco (Instituto de Neurociencias de Alicante)

Mechanisms and functions of synaptic plasticity in the hippocampus T. Bliss (National Institute for Medical Research, London)

July 19th, The Systems-Level: where and how?

The piramidal neuron in cognition J. de Felipe (Instituto Cajal, Madrid)

The hippocampus: how is associative learning built up? A. Gruart i Massó (Univ. Pablo Olavide de Sevilla)

Oral Communications (Students)

July 20th, The Model Systems: Memory in the insects

Complex brain functions in the fruit fly R. Greenspan (The Neurosciences Institute, San Diego)

Direct observation of neurons while they create the memory trace in the Honey Bee R. Menzel (Institut für Biologie Neurobiologie, Freie Universität Berlin)

Genetic control of neural circuit development in Drosophila B. Hassan (VIB and University of Leuven School of Medicine)

The temporal issue: cons and recons

Molecular mechanisms of memory consolidation and reconsolidation Serge Laroche (Universite Paris Sud)

The labile nature of consolidated memories O. Stork (Otto-von-Guericke Universität)

Basic mechanisms of reconsolidation J. Lee (Dept. Experimental Psychology University of Cambridge)

July 21th, The Malfunction: Cognitive disorders, what and when gets wrong?

Molecular mechanisms underlying mental retardation: Fragile X G. Ramakers (Nederlands Instituut voor Hersenonderzoek, The Netherlands)

Candidate Neural Systems Mediating Genetic Influences on Cognition and

Behavior: Characterization Using Neuroimaging C. Zink (Unit for Systems Neuroscience in Psychiatry, National Institute of Mental Health)

VENUE: The beautiful city of Soria is the capital of the eastern most province of the autonomous region of Castilla y León. The river Duero skirts Soria, which features two important monuments: San polo and San Saturio, with a nice elm-flanked road alongside of the river. The nearby villages and towns of Almarza, Narros, Golmayo or Arnacón, surrounding the capital, preserve age-old customs and traditions. The archaeological site of Numancia is located in Garray, 15 kilometres away from the capital. The site features an archaeological workshop and superb simulations explaining the history of the famous Celtic village that heroically held out against the Romans. Castilla y León is the ideal place to practise active-tourism activities, complementing the interior wealth of the region, due to its rich mountain geography, natural spaces, rivers, valleys, scarped mountains, caves, gorges, extensive plains, in short: the diversity of its overwhelming landscape.