

ICTP – [The Abdus Salam International Centre for Theoretical Physics](#), Trieste, Italy

smr1308/Preliminary_programme

THIRD ANTONIO BORSELLINO COLLEGE ON NEUROPHYSICS:

"Evolution of Intelligent Behaviour"

(23 April – 4 May 2001)

PRELIMINARY PROGRAMME

Lectures will be held in the Kastler Hall of the
Adriatico Guesthouse, Grignano

MONDAY, 23 APRIL

08:30 – 09:30 REGISTRATION

09:30 – 10:00 WELCOME

10:00 – 11:15 L. KRUBITZER (University of California at Davis)

Cortical field evolution: the comparative approach to
understanding mammalian brain organization

11:15 – 11:45 C O F F E E B R E A K

11:45 – 13:00 D. O'LEARY (Salk Institute, La Jolla, USA)

Mechanisms of cortical development: Neurogenesis, cell
migration, development of connections and cell death

13:00 – 15:00 L U N C H

15:00 – 16:15 T. JONES (University of California at Davis)

The corticothalamic system and its development

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16:15 - 16:45 C O F F E E B R E A K

16:45 - 18:00 L. KRUBITZER

Aerealization of the neocortex - genetic and epigenetic
contributions to the phenotype

18:00 - GENERAL DISCUSSION

18:30 - RECEPTION

(Adriatico Guesthouse Cafeteria)

TUESDAY, 24 APRIL

10:00 - 11:15 D. O'LEARY

Mechanisms of cortical aerealization: Genetic and epigenetic
contributions, part I

11:15 - 11:45 C O F F E E B R E A K

(A Group Photograph will be taken at the Terrace Level)

11:45 - 12.30 M. MERZENICH (University of California at San Francisco)

Experience and learning driven plasticity of the auditory and
somatosensory cortex

12:30 - 14:00 L U N C H

14:00 - 15:15 T. JONES

Subcortical substrates of neocortical plasticity

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15:15 - 15:45 C O F F E E B R E A K

15:45 - 17:00 D. O'LEARY

Mechanisms of cortical arealization: Genetic and epigenetic contributions, part II

17:00 - GENERAL DISCUSSION

18:30 - 19:00 M. MERZENICH

Contributions of studies of neuroplasticity research to understanding the origins of human impairments and neurological "illness" and to their remediation

19:00 - The discussion of the evening lecture will continue on the terrace, weather permitting, with a get-together drink

WEDNESDAY, 25 APRIL

10:00 - 10:45 GENERAL DISCUSSION

10:45 - 11:15 C O F F E E B R E A K

11:15 - 12.30 J. MEHLER (SISSA)

The learning of language

Brain plasticity and acquisition of the first and second language

12:30 - 14:00 L U N C H

14:00 - 15:15 J. MEHLER

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The learning of language

15:15 - 15:45 C O F F E E B R E A K

15:45 - 17:00 T. JONES

The thalamic matrix, differential thalamocortical
connections and thalamocortical synchrony

17:00 - GENERAL DISCUSSION

THURSDAY, 26 APRIL

09:30 - 10:45 L. BONATTI (SISSA)

Objects, properties and natural categories in the young infant

10:45 - 11:15 C O F F E E B R E A K

11:15 - 12.30 J. HARRIS (SISSA)

Learning in topographically organised regions of somatosensory
cortex

12:30 - 14:00 L U N C H

14:00 - 15:15 E. DISBROW

Areas in the lateral sulcus of primates: Evolution of manual
dexterity and bilateral coordination of the hands in primates

15:15 - 15:45 C O F F E E B R E A K

15:45 - 17:00 L. BONATTI

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Theories of deductive reasoning

17:00 - GENERAL DISCUSSION

18:00 - 19:00 B. AGUERA Y ARCAS (Princeton University)

Evolution of intelligent communication

19:00 - The discussion of the evening lecture will continue on the terrace, weather permitting, with a get-together drink

FRIDAY, 27 APRIL

09:30 - 10:45 POSTER SESSION

10:45 - 11:15 C O F F E E B R E A K

11:15 - 12.30 POSTER SESSION

12:30 - 14:00 L U N C H

14:00 - 17:00 POSTER SESSION (coffee will be served at 15:15)

SATURDAY, 28 APRIL

TOUR TO AQUILEIA and GRADO (afternoon)

MONDAY, 30 APRIL

09:30 - 10:45 B. FINLAY (Cornell University)

Stability of developmental structure in mammalian brain

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evolution: "late makes large"

10:45 - 11:15 C O F F E E B R E A K

11:15 - 12.30 A. TREVES (SISSA)

What has mammalian evolution been trying to do with the
isocortex?

12:30 - 14:00 L U N C H

14:00 - 15:15 B. FINLAY

Variability in developmental timing and brain variation

15:15 - 15:45 C O F F E E B R E A K

15:45 - 17:00 A. TREVES

What has mammalian evolution been trying to do with the
hippocampus?

17:00 - GENERAL DISCUSSION

18:30 - RECEPTION

(Adriatico Guesthouse Terrace, weather permitting)

TUESDAY, 1 MAY

09:30 - 10:45 B. FINLAY

Early development of thalamocortical and intracortical
connectivity: constraints on the paths of plasticity

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10:45 - 11:15 C O F F E E B R E A K

11:15 - 12.30 A. BULFONE (Ist. Scientifico Ospedale San Raffaele,
Milano)

Developmental diseases of the cerebral cortex: disorders of
pattern formation, cell fate, proliferation and specification

12:30 - 14:00 L U N C H

14:00 - 15:15 B. OLSHAUSEN (University of California at Davis)

Efficient coding principles in the design of nervous systems

15:15 - 15:45 C O F F E E B R E A K

15:45 - 17:00 T. ROBERTS (University of California at San Francisco)

Measurement science: the pro's and con's of functional
neuroimaging

17:00 - GENERAL DISCUSSION

18:00 - 19:00 J. CHELA FLORES (ICTP)

Is the evolution of intelligent behaviour universal?

19:00 - The discussion of the evening lecture will continue on the
terrace, weather permitting, with a get-together drink

WEDNESDAY, 2 MAY

09:30 - 10:45 T. ROBERTS

MEG neural correlates of auditory information processing

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10:45 - 11:15 C O F F E E B R E A K

11:15 - 12.30 E. DISBROW

Posterior parietal cortex in humans and monkeys

12:30 - 14:00 L U N C H

14:00 - 15:15 B. OLSHAUSEN

Why visual scenes?

15:15 - 15:45 C O F F E E B R E A K

15:45 - 17:00 A. BULFONE

Developmental diseases of the cerebral cortex: disorders of neuronal migration

17:00 - GENERAL DISCUSSION

18:00 - 19:00 J. ROEDERER(University of Alaska)

The construction and manipulation of mental representations or "maps" as a fundamental brain function

19:00 - The discussion of the evening lecture will continue on the terrace, weather permitting, with a get-together drink

THURSDAY, 3 May

09:30 - 10:45 P. RAKIC (Yale University)

Evolution of the neocortex: lessons from embryo-archaeology,
Part I

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10:45 - 11:15 C O F F E E B R E A K

11:15 - 12.30 P. RAKIC

Evolution of the neocortex: lessons from embryo-archaeology,
Part II

12:30 - 14:00 L U N C H

14:00 - 15:15 F. EBNER (Vanderbilt University, Nashville)

The functional organization of the vibrissae in rodents: from
whisker to cortex

15:15 - 15:45 C O F F E E B R E A K

15:45 - 17:00 B. HALL (Duke University, Durham, USA)

The structure and function if intracollicular circuits

17:00 - GENERAL DISCUSSION

19:30 - FAREWELL DINNER

FRIDAY, 4 May

09:30 - 10:45 F. EBNER

The role of acetylcholine in cortical plasticity

10:45 - 11:15 C O F F E E B R E A K

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11:15 - 12.30 B. HALL

The role of acetylcholine in modulating visual responses of
cells of the superior colliculus

12:30 - 14:00 L U N C H

14:00 - 16:00 J. RUBINSTEIN (University of California at San
Francisco)

Coupling of regionalization and cell type specification in the
telencephalon

16:00 - 16:30 CLOSING CEREMONY (including the distribution of
diplomas)

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