Proposal of projects for the XL cycle (October 2004-September 2007)

1. Docente **F. ANTONUCCI**
   Toward a Personalized Therapy in Neurodevelopmental Pathologies
   Requirements Knowledge of the main electrophysiological techniques for the study of neuronal communication, use of animal models for in vitro and in vivo experiments, knowledge of imaging techniques

2. Docente **E. BATTAGLIOLI**
   Study of fear memory consolidation pathways in Post-Traumatic Stress Syndrome (PTSD) and their potential implications in disease prevention
   R**equirements:** Basic experience working in vivo with experimental preclinical models in particular knowledge with behavioral analyses and pharmacological treatments. Good expertise in molecular biology approaches will be considered as a preferential qualification.

3. Docente **F. BIFARI**

   Characterization and modulation of "immature" neurons: a potentially exploitable reservoir of non-newly generated cells involved in plasticity of the rodent and human cerebral cortex
   Requirements: Motivated students with a strong commitment to basic and translational research in neuroscience and regenerative medicine are invited to apply. The candidate should have well-developed social skills, a hands-on attitude and be able to work in a team.

4. Docente **M. BONOMI**

   Decifering of the complex genetic basis of GnRH-secreting neuron developmental defects
   Requirements: Eventual experience on endocrine regulatory mechanisms of reproduction, whole exome sequencing technique and analysis, molecular biology techniques for gene expression studies, zebrafish model and pluripotent stem cells.

5. Docente **B. CASSANI**
   ELUCIDATING THE MECHANISM OF RESISTANCE TO CAR-T THERAPY IN LARGE B-CELLLYMPHOMAS
   Requirements: Experience working with multimodal datasets, including NGS data, and the interest and ability to manipulate and analyze complex data structures; interest or proficiency in statistical programming languages such as R or Python; interest in translational research, hemathology and cell therapies; enthusiasm and persistence in the application of analytical methods to complex biological problems.

6. Docente **S. CASTIGLIONI**

   Co-culture of endothelial cells and osteoblasts in microgravity: effects on osteoblast activity
   Requirements: Cell culture, Western Blotting, Nucleic acids extraction, Real-Time PCR, gene silencing and editing.

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7. Docente **P. CORRADINI**
Elucidating the mechanism of resistance to CAR-T therapy in large b-cell lymphomas
Requirements: experience working with multimodal datasets, including NGS data, and the interest and ability to manipulate and analyze complex data structures; interest or proficiency in statistical programming languages such as R or Python; interest in translational research, hemathology and cell therapies; enthusiasm and persistence in the application of analytical methods to complex biological problems.

8. Docente **S.A.M. DELLA BELLA**

Addressing autoimmunity and immune deficiency in thymomas, at the crossroad between cancer immunology and immune dysfunction
Requirements: Basic experience in cell culture techniques; basic experience in flow cytometry, molecular biology and related computational analytical approaches; willingness to spend periods abroad for training and collaborations

9. Docente **E. DOZIO**

Dipeptidyl Peptidase-4 (DPP4) inhibition: role in obesity-induced inflammation and tissue injury
Requirements: knowledge of the main basic methods in cellular and molecular biology (cell culture techniques, gene and protein expression analysis), biochemical assays for the evaluation of biomarkers in biological fluids, histology & immunohistochemistry methods

10. Docente **D. FORNASARI**
Multi-omics analysis of iPS-derived neurons in 2D and 3D cultures for the study of Congenital Central Hypoventilation Syndrome
Requirements: Basic cellular and molecular biology techniques (PCR, RNA extraction, RT-qPCR, western blot), mammalian cell culture and immunofluorescence. iPS culture will be considered a preferential qualification

11. Docente **M. FRANCOLINI**
Analysis of GABAergic circuitry in Pcdh19 mouse model of Developmental and epileptic encephalopathy 9 (DEE9)
Requirements: nothing declared

12. Docente **A. FRASCA**
RNA therapies for the treatment of neurodevelopmental disorders
Requirements: Experience in molecular biology and cell cultures

13. Docente **N. LANDSBERGER**
RNA therapies for the treatment of neurodevelopmental disorders
Requirements: Experience in molecular biology and cell cultures

14. Docente **M. LOCATI**
New mechanisms controlling macrophages functions: role of Ms4a proteins
Requirements: Basic cellular and molecular biology; biochemical competences. Possible (not mandatory) in vivo experience

15. Docente **F. MARCHESI**
Identification of immune profiles in pancreatic cancer by multidimensional tissue analysis.
Requirements: Previous experience in tissue staining and analysis of immune cells

16. Docente **D. MAVILIO**

Phenotypic and molecular characterization of innate lymphoid cells in Myelodisplastic syndromes: towards the comprehension of their role in disease etiology and prognosis
Requirements: Basic training in immunology laboratory and good organization skills. Previous experience in flow cytometry and cell biology are a plus

17. Docente **R. MOLTENI**

Involvement of microglial cells in the etiology, neurobiology and treatment of stressrelated psychiatric disorders
Requirements: Expertise in gene and protein expression analyses, cell culture

18. Docente **M. PAGANI**

Decoding the Molecular Drivers of Cerebral Cavernous Malformations
Requirements: none declared

19. Docente **L. PERSANI**
Advanced understanding of Thyroid Hormone action in brain and heart using zebrafish model and induced pluripotent stem cells (iPSC)
Requirements: Experience in molecular biology and cell cultures

20. Docente **E. PEVERELLI**

Manipulation of insulin receptor (IR) alternative splicing as a novel therapeutic strategy to block IGF2 autocrine proliferative loop in adrenocortical carcinoma (ACC)
Requirements: Cell cultures; cell transfection and silencing; protein detection (western blot, co-/immunoprecipitation); nucleic acid extraction, PCR.

21. Docente **A.S. PISTOCCHI**
In vitro and in vivo (zebrafish) study on the efficacy of histone deacetylase (HDAC) inhibition for the treatments of glioblastoma
Requirements: Expertise in cellular and molecular biology. Preferred but not mandatory, experience in zebrafish and/or cellular models.

22. Docente **A.S. PISTOCCHI**
In vitro and in vivo omics approaches for studying the molecular mechanisms of human diseases, with a particular focus on glioblastoma.
Requirements: Expertise in cellular and molecular biology. Preferred but not mandatory, experience in zebrafish and/or cellular models

23. Docente **L. SFONDRINI**

Tissue microbiota remodeling during lung cancer progression: a fuel for immunosuppression
Requirements: none declared

24. Docente: **E. VIANELLO**
The Molecular Mechanisms of Obesity driven to Cardiac Remodeling
Requirements: Basic practice in molecular biology: - RT-PCR - RNA/DNA extraction - Tissue Protein extraction - 2D Cell culture management

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25. Docente **G. VITALE**
Adipo-NETwork: inside the crosstalk between adipose cells and gastroenteropancreatic neuroendocrine tumors (GEP-NETs)
Requirements: Strong interest for basic and translational research.

26. Docente **L. MARELLI**
The pandemic within: tackling brain vulnerability in COVID19 at high resolution
Requirements: none declared