DARIO CUPOLILLO | Postdoc

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EMPLOYMENT and EDUCATION

Postdoc 📍 Genoa, IT
Italian Institute of Technology (IIT) 📅 04/2021 - Ongoing

Doctorate in Neuroscience 📍 Bordeaux, FR
Interdisciplinary Institute for Neuroscience (IINS) 📅 04/2016 - 03/2021

Research Fellow 📍 Turin, IT
Neuroscience Institute Cavalieri-Ottolenghi (NICO) 📅 01/2015 - 06/2015

MSc in Molecular Biotechnology 📍 Turin, IT
University of Turin 📅 12/2012 - 10/2014

BSc in Biotechnology 📍 Turin, IT
University of Turin 📅 10/2009 - 12/2012

FUNDINGS and ACADEMIC GRANTS

MSCA Postdoctoral Fellowship
Horizon Europe Framework Programme 📅 2022 - 2024

LabEX Brain
PhD extension Grant 📅 2020 - 2021

Fondation de recherche médicale (FRM)
PhD extension Grant 📅 2019 - 2020

MSCA Doctoral Fellowship
Horizon Innovative Training Network 📅 2016 - 2019

AWARDS

Société des Neurosciences
Travel Grant - FENS Forum 📅 2020

FENS/IBRO-PERC
Travel Grant - FENS Forum 📅 2020

PUBLICATIONS

1. **Cupolillo D,**, Regio V., Barberis A.
   "Synaptic microarchitecture: the role of spatial interplay between excitatory and
   inhibitory inputs in shaping dendritic plasticity and neuronal output"
   Frontiers in Cellular Neuroscience (2024)

2. **Cupolillo D,**, Grosjean N., Marneffe C., Viotti J., Reynaud C., Deforges S., Carta M., Mulle C.
   "Early changes in the properties of CA3 engram cells explored with a novel viral tool"
   BiorXiv (2024)

3. Jiang N., **Cupolillo D.**, Grosjean N., Muller E., Deforges S., Mulle C., Amedee T.
"Impaired plasticity of intrinsic excitability in the dentate gyrus alters spike transfer
in a mouse model of Alzheimer's disease"
Neurobiology of disease (2021)

4. **Cupolillo D.**, Hoxha E., Faralli A., De Luca A., Rossi F., Tempia F., Carulli D.
"Autistic-like traits and cerebellar dysfunction in Purkinje cell PTEN knock-out mice"
Neuropsychopharmacology (2016)

ABSTRACTS and POSTERS

Regio V., **Cupolillo D.**, Barberis A.
"Mapping spatial organization of functional inputs"
FENS Forum 2024

Cupolillo D., Marneffe C., Reynaud C., Deforges S., Grosjean N., Mulle C.
"Exploring the early properties of CA3 engram neurons with a novel viral tool"
SFN 2021

Cupolillo D., Grosjean N., Cho Y., Deforges S., Mulle C.
"Comparing properties of CA3 engram cells over initial period of encoding
and early phase of consolidation"
FENS Forum 2020

Cupolillo D., Grosjean N., Deforges S., Cho Y., Mulle C.
"Assessing properties of CA3 neuronal assemblies involved in information encoding"
FENS Forum 2018

Cupolillo D., Grosjean N., Deforges S., Cho Y., Mulle C.
"Properties of CA3 neuronal assemblies involved in information encoding
in physiological conditions and Alzheimer's disease"
European synapse meeting 2017

Cupolillo D., Grosjean N., Deforges S., Cho Y., Mulle C.
"Early deficits in one-trial memory tasks in a mouse model of Alzheimer's disease"
NeuroFrance 2017

Carulli D., Faralli A., **Cupolillo D.**, Rossi F.
"Conditional deletion of PTEN affects Purkinje cells survival and response to injury"
FENS Forum 2014

TEACHING EXPERIENCES

Supervision of MSc thesis in Neuroscience 📅 2020
University of Bordeaux

Instructor at laboratory training course 📅 2019
Advanced methods for preclinical Alzheimer's research
Bordeaux School of Neuroscience

COURSES

Deep Learning 📅 2024
Neuromatch Academy

Experimental Neuroscience Bootcamp 📅 2023
The Cajal Advanced Neuroscience Training Program

**Animal experimentation training: "Elementi base per l'approccio
dei ricercatori all'utilizzo degli animali ai fini scientifici"** 📅 2021
ECM Commissione Nazionale per la Formazione Continua

Animal experimentation training: surgery level 📅 2018
CNRS stage

The art of grantmanship 📅 2018
Officina H2020 - University of Milan

Animal experimentation training: designer level 📅 2017
CNRS stage

Synapse methodolgy course 📅 2017
European training network Marie Skłodowska Curie Action

Alzheimer's disease: clinical features and pathogenic mechanisms 📅 2016
European training network MSCA

OUTREACH ACTIVITY

Scientific mediator for high school students 📅 2017
Opération Declics

SKILLS

🧪 Wet lab
- Mouse stereotaxic virus injection
- Patch clamp slice electrophysiology
- Basic immunofluorescence/histochemistry staining procedures
- Confocal microscopy
- 2-photon calcium imaging
- Mouse behavioral experiment
- Mouse transcardial perfusion and brain extraction

🔧 Technical
- 3D printing (FDM and SLA)
- Basic Soldering Techniques
- Arduino controllers
- Raspberry PI

🖥 Softwares
- Microsoft Office package
- Anaconda
- Visual Studio Code
- MBF Vidrio ScanImage
- ImageJ
- GraphPad statistic software
- Adobe Illustrator
- Designspark Mechanical for 3d printing

❯_ Programming

○ Python
  - Data analysis
  - Image analysis
  - Graphical representation
  - Computer vision
  - Electrophysiology analysis (pyABF)
  - Graphical User Interface (PyQt5)
  - Deep Learning (Pytorch, Tensorflow)
○ Arduino sketch

CODING PROJECTS

ROIpy
Automated dendritic ROI placement for 2p calcium imaging
○ github.com/dcupolillo/ROIpy

Spyne
Toolbox for spine and dendritic calcium imaging analysis
○ github.com/dcupolillo/spyne

Neuronpath
Custom calcium imaging dataset file manager
○ github.com/dcupolillo/neuronpath

Pyhavior
Toolbox for behavioral test analysis
○ github.com/dcupolillo/Pyhavior

LANGUAGES

○ **English**: professional
○ **Italian**: native
○ **French**: basic
○ **Spanish**: basic