Curriculum Vitae

PERSONAL INFORMATION

Surname	**CASTAGNO**
Name	**Antonio Nicolas**
Orcid	https://orcid.org/0000-0002-3141-1465
Scopus	57226785060
Nationality	Italian

Work experience and stages

• Date (from – to)	October 2021 - Today
• Type of employment	PhD student at the Doctoral school in Biomedical Science – Program in Physiology Tutor: Prof. Gerardo Biella, Prof. Antonio Pisani
• Name and address of firm/university	University of Pavia Department of Biology and Biotechnology "L. Spallanzani" - Laboratory of Electrophysiological and Biophysics of Ion Channels and IRCCS Mondino Foundation, Pavia
• Main activities and responsibilities	Oxytocin modulation of neuronal activity in hippocampus and dorsal striatum of mice
• Date (from – to)	July 2022
• Type of employment	PhD student visitor
• Name and address of firm/university	Neurophysiology and Plasticity Lab Fondazione Santa Lucia IRCCS Via del Fosso di Fiorano, 64 – 00143 Rome
• Main activities and responsibilities	Electrophysiologic studies on rodent models of dystonia DYT1
• Date (from – to)	May 2021 – October 2021
• Type of employment	Fellow with neurobiological researcher qualification
• Name and address of firm/university	Fondazione Istituto Neurologico Nazionale Casimiro Mondino Brain Connectivity Centre Via Mondino, 2, 27100 Pavia (PV), Italia
• Main activities and responsibilities	Electrophysiological characterization of early changes in synaptic plasticity in an animal model of Parkinson's disease with glucocerebrosidase deficiency
• Date (from – to)	October 2019 – April 2021
• Type of employment	Master's thesis internship
• Name and address of firm/university	University of Pavia Department of Biology and Biotechnology "L. Spallanzani" – Laboratory of Electrophysiology and Biophysics of ion channels (Toselli and Biella lab) Via Forlanini, 6, 27100, Pavia (PV), Italy
• Main activities and responsibilities	Electrophysiological patch-clamp technique on mouse brain slices, aimed at investigating the oxytocin effects on neurons in the CA1 area of the hippocampus and in dorsal striatum

• Date (from – to)	February 2018 – July 2018
• Type of employment	Bachelor's thesis internship
• Name and address of firm/university	University of Milan Department of Medical Biotechnology and Translational Medicine - Laboratory of Molecular and Cellular Biology applied to neurodevelopmental diseases (Landsberger Lab) Via Fratelli Cervi, 93, 20090 Segrate (MI), Italia
• Main activities and responsibilities	Use of biomolecular and cellular techniques aimed at investigating the effect of Fingolimod on primary cortical neurons cultures prepared from *Mecp2* $^{-/y}$ mice (model of Rett syndrome)

Education and training

• Date (from – to)	October 2018 – April 2021
• Name and type of organization providing education and training	University of Pavia Faculty of Mathematical, Physical and Natural Sciences Master course in Neurobiology (LM-6)
• Duration of the program of study	2
• Principal subjects/occupational skills covered	Knowledge about the morphofunctional organization of the nervous system and the molecular and cellular basis underlying the neural functions of the brain and how this function takes place on a systemic level, both in physiological and pathological conditions.
• Title of qualification awarded	Master's degree Thesis title: *Comparative study of oxytocinergic modulation on neurons in mouse hippocampus and striatum* Supervisor: Prof. Gerardo Rosario Biella, Correlator: Dr. Claudia Maniezzi
• Final mark obtained	110/110 cum Laude
• Date (from – to)	2015-2018
• Name and type of organization providing education and training	University of Milan Faculty of Medicine Bachelor's degree in Medical Biotechnology (L-2)
• Duration of the program of study	3
• Principal subjects/occupational skills covered	Interdisciplinary knowledge applied in biotechnological and medical fields, with a particular focus on the research, diagnostic, therapeutic, reproductive, and medical-legal sectors.
• Title of qualification awarded	Bachelor's degree Thesis title: *Rett Syndrome and Fingolimod - An in vitro study of the effects of chronic treatment* Supervisor: Prof. Nicoletta Landsberger, Correlator: Dr.. Eleonora Spiombi
• Final mark obtained	110/110 cum Laude
• Date (from – to)	2009-2014
• Name and type of organisation providing education and training	L.S.S. 'R. Donatelli – B. Pascal' 20133, Milano (MI), Italia
• Duration of the program of study	5
• Principal subjects/occupational skills covered	Scientific High School
• Title of qualification awarded	High School Diploma

Pubblications

1) Atiallah, I. E., Bonsi, P., Tassone, A., Martella, G., Biella, G., **Castagno, A. N.**, Pisani, A., & Ponterio, G. (2023). Synaptic Dysfunction in Dystonia: Update From Experimental Models. Current neuropharmacology, 10.2174/1570159X21666230718100156. Advance online publication. https://doi.org/10.2174/1570159X21666230718100156

2) G. Biella, F. Callegari, **A.N. Castagno**, P.W. Cattaneo, J. Cazzola, I. Cristiani, M. Grassi, P. Malcovati, P. Massobrio, P. Minzioni, S. Ramat, M.C. Prata, A. Rappoldi, M. Rossella, P. Spaiardi, F. Talpo. Visual prostheses based on Silicon PhotoMultiplier: The SPEye project. Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2023 March, 167935, doi: 10.1016/j.nima.2022.167935

3) Talpo F, Spaiardi P, **Castagno AN**, Maniezzi C, Raffin F, Terribile G, Sancini G, Pisani A, Biella GR. Neuromodulatory functions exerted by oxytocin on different populations of hippocampal neurons in rodents. Front Cell Neurosci. 2023 Feb 2; 17:1082010. doi: 10.3389/fncel.2023.1082010.

4) Binini N, Talpo F, Spaiardi P, Maniezzi C, Pedrazzoli M, Raffin F, Mattiello N, **Castagno AN**, Masetto S, Yanagawa Y, Dickson CT, Ramat S, Toselli M, Biella GR. Membrane Resonance in Pyramidal and GABAergic Neurons of the Mouse Perirhinal Cortex. Front Cell Neurosci. 2021 Jul 22; 15:703407. doi: 10.3389/fncel.2021.703407

Abstracts, posters, and oral presentations

1) **Castagno, A.N.**; Spaiardi, P.; Trucco, A.; Maniezzi, C.; Raffin, F.; Mancini, M.; Nicois, A.; Cazzola, J.; del Papa, P.; Pedrinazzi, M.; Pisani, A.; Talpo, F.; Biella, G.R. "*Shaping the spikes: oxytocinergic modulation of action potentials in the CA1 hippocampal region of mice*". 20th National Congress of the Italian Society for Neuroscience (SINS). Turin, September 14th–17th, 2023

2) F. Raffin, R. De Luca, A. Trucco, **A.N. Castagno**, P. Spaiardi, F. Talpo, P.M. Fuller, G.R. Biella and E. Arrigoni. "*Neuropeptidergic modulation of the hypothalamic subparaventricular neurons in mouse brain slices*". SFN - NEUROSCIENCE 2023 Washington, D.C. Presented by dr. Francesca Raffin

3) **A.N. Castagno**, F. Talpo, C. Maniezzi, P. Spaiardi, A. Nicois, N. Mattiello, F. Raffin and G. R. Biella. *"Effects of oxytocin on action potential and neural coding of neurons in hippocampal CA1 and dorsal striatum in mice"*. Next generation neurobiology training: a new era begins at university of Pavia. September 22-23, 2022

4) P. Spaiardi, J. Cazzola, **A.N. Castagno**, G. Albieri, F.P. Ercolino, G. Faravelli, N. Mattiello, A. Sala, F. Callegari, I. Cristiani, M. Grassi, P. Malcovati, P. Massobrio, P. Minzioni, S. Ramat, M.C. Prata, A. Rappoldi, M. Rossella, F. Talpo, P.W. Cattaneo, G. R. Biella. *"Cells survival and functional characterization of differentiated SHSY-5Y cells on Silicon PhotoMultipliers (SiPM)"*. Next generation neurobiology training: a new era begins at university of Pavia. September 22-23, 2022. Presented by dr. Paolo Spaiardi (UNIPV)

5) **A.N. Castagno**, F. Talpo, C. Maniezzi, P. Spaiardi, A. Nicois, N. Mattiello, F. Raffin and G. R. Biella. *"Effects of oxytocin on action potential and neural coding of neurons in hippocampal CA1 and dorsal striatum in mice"*. 72nd SIF National Congress (The Italian Society of Physiology). Bari, Italy. September 14-16, 2022. Presented by prof. Gerardo R. Biella (UNIPV)

6) "*Visual prostheses based on Silicon PhotoMultiplier: the SPEye project*". 15th Pisa Meeting on Advanced Detectors. La Biodola (Italy), May 22-28, 2022. Presented by prof. Paolo W. Cattaneo (INFN)

Professional development

1) Next generation neurobiology training: a new era begins at university of Pavia. Pavia, September 22-23, 2022

2) Intensive School in Science Communication University of Pavia - Intensive School for Advanced Graduate Study of Pavia. Pavia, November15-19, 2021

3) Spreading the bad news: an update on the role of pathological proteins in neurodegenerative diseases, XXX Ottorino Rossi Award – New Series "The Pavia legacy". Pavia, December 20, 2019

Didactic and educational activities

1) Exercises for students attending the course of "*General Physiology*", Bachelor's degree in Bioengineering, University of Pavia (A.A. 2022 - 2023)

2) From April 2022
Cultore della materia (subject expert) in Physiology at Department of Biology and Biotechnology "L. Spallanzani" – University of Pavia

3) Sharper – European researchers' night (edition: 2019, 2021 and 2022).
Scientific staff for the "MagicaMENTE!" stand curated by Biella-Toselli Lab (Pavia, IT)

Theses Correlator

1) Bachelor's degree in Biological Sciences (University of Pavia – A.A. 2022-2023) of Matilda Pedrinazzi
Thesis title: *Neuromodulatory role of oxytocin on fast-spiking inhibitory interneurons in mouse hippocampus and striatum*
Supervisor: Prof. Francesca Talpo, Correlator: Dr. Antonio Nicolas Castagno.

2) Master's degree in Neurobiology (University of Pavia - A.A. 2021-2022) of Caterina Salerno
Thesis title: *Oxytocin modulation of dorsal striatum medium spiny neurons in a mouse model of Huntington's disease*
Supervisor: Prof. Gerardo Biella, Correlator: Dr. Antonio Nicolas Castagno

3) Master's degree in Neurobiology (University of Pavia - A.A. 2021-2022) of Fabio Ruto
Thesis title: *Electrophysiological study of the effects of oxytocin on mouse striatal medium spiny neurons*
Supervisor: Prof. Francesca Talpo, Correlator: Dr. Antonio Nicolas Castagno

4) Master's degree in Neurobiology (University of Pavia - A.A. 2021-2022) of Greta Albieri
Thesis title: *Using the SH-SH5Y cell line to preliminary assay the biocompatibility of an innovative Silicon PhotoMultiplier (SiPM) employed to develop a new generation of advanced subretinal implants*
Supervisor: Prof. Paolo Spaiardi, Correlator: Dr. Antonio Nicolas Castagno

5) Master's degree in Neurobiology (University of Pavia - A.A. 2020-2021) of Alessandro Nicois
Thesis title: *Effects of oxytocin on neuronal coding in the hippocampal and striatal circuits*
Supervisor: Prof. Gerardo Biella, Correlator: Dr. Antonio Nicolas Castagno

Personal skills and competences

Acquired in the course of life and career but not necessarily evidenced by formal certificates and diplomas.

Language skills

Mother tongue	**Italian**
Other language(s)	
	English
• Reading	Good (B2)
• Writing	Good (B2)
• Speaking	Good (B2)

Technical skills and competences

- Use of the electrophysiological laboratory equipments and the patch-clamp set-up
- Good command of intracardiac perfusion procedure and murine brain dissection
- Good knowledge of the whole-cell patch–clamp technique on brain slices
- Good ability in isolating hippocampal areas from murine brain slices
- Use of the following cellular and biomolecular techniques: preparation of primary cortical neurons cultures, genomic DNA extraction from tissue, PCR, agarose gel electrophoresis, cellular transfection using lipofectamine, immunofluorescence staining on cell culture and brain slices, RNA extraction from cell culture, protein extraction from cell colture (using Laemli buffer), SDS-Page, Western-blot through Trans-Blot system
- Use of wide-field microscopy
- Data analysis of electrophysiological data and morphological data (i.e., Sholl analysis, Strahler analysis)
- Use of Clampex, Clampfit, OriginPro, Prism, RStudio and ImageJ software
- Good ability in mouse manipulation in animal facility

Social skills and competences

Good team working skills and ability to cooperate with others derived from working in research group of 5-10 people

Organizational skills and competences

Problem solving and good organizational skills derived from the experimental planning and the need for cooperation with others

Pavia, July 26, 2023

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