
Curriculum Vitae
FRANCESCA TALPO

POSITION TITLE: Associate Professor – Dept. Biology and Biotechnology L. Spallanzani – University of Pavia

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A. Education and Training

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
University of Pavia	Dr.	07/2007	B.Sc. degree in Biotechnology, with honors Thesis title: Analysis of hematopoietic reconstitution in a pediatric patient undergoing allogeneic transplantation of stem cells obtained from two umbilical cord blood units, one of which propagated ex vivo
University of Pavia	Dr.	09/2009	M.Sc. degree in Neurobiology, with honors Thesis title: Effect of the muscarinic modulation on GABAergic interneurons of the mouse perirhinal cortex
University of Pavia	PhD	09/2009	PhD degree in Physiology and Neuroscience Thesis title: Electrophysiological analysis of the role of Rac1 and Rac3 in the development of the hippocampal circuit

B. Positions and Scientific Appointments

- From October 2025: Associate Professor of Physiology
Dept. Biology and Biotechnology "L. Spallanzani" – University of Pavia (IT)
- October 2022-September 2025: Tenure-track Assistant Professor of Physiology (RTD-B - BIO/09)
Dept. Biology and Biotechnology "L. Spallanzani" – University of Pavia (IT)
- February 2022-September 2022: Non-tenured Assistant Professor of Physiology (RTD-A - BIO/09)
Dept. Biology and Biotechnology "L. Spallanzani" – University of Pavia (IT)
- April 2020-January 2022: Postdoctoral Assistant (FUV competitive fellowships)
Dept. Biology and Biotechnology "L. Spallanzani" – University of Pavia (IT)
- October 2017-March 2020: Postdoctoral Assistant (FRG competitive fellowship) [7 January 2019 – 15 June 2019: Career break for Maternity leave]
Dept. Biology and Biotechnology "L. Spallanzani" – University of Pavia (IT)
- September 2016–May 2017: Postdoctoral Assistant
School of Medicine – Dept. Neuroscience – Yale University (CT - USA)
- May 2015–August 2016: Postdoctoral Assistant
School of Medicine and Surgery – University of Milano-Bicocca (IT)
- March 2013–April 2015: Postdoctoral Assistant
Dept. Biology and Biotechnology "L. Spallanzani" – University of Pavia (IT)
- November 2009–February 2013
PhD student in Physiology and Neuroscience, Dept. Biology and Biotechnology – University of Pavia (IT)

C. Grants, Honors, and Awards

- 2022 - PRIN PNRR (Funding organization - MIUR)
PI of the project "OT-HD: does oxytocinergic neuromodulation of striatal network have a role in the pathophysiology of Huntington's Disease?"
Duration: 2 years (Person/months: 8)
Total funding: 244.357 euros (136.857 euros: RU1-PI; 61.500 euros: RU2; 46.000 euros: RU3)
- 2022-2024 - PON "Ricerca e Innovazione 2014-2020" - Risorse React Eu
In October, takeover as PI of the "Green" project 22-G-14921-1: "Nutritional Neuroscience a green approach from field to table for human metabolic and cognitive health" (previously RTD-A PON on the same project)

- From April 2021 to January 2022 – FUV (Fondazione Umberto Veronesi) Competitive Postdoctoral Fellowship, UNIPV
Project “Selective effect of ADAM10 inhibition on different populations of striatal cells in Huntington’s Disease transgenic mice”
- From April 2020 to March 2021 – FUV (Fondazione Umberto Veronesi) Competitive Postdoctoral Fellowship, UNIPV
Project “Identifying interindividual impairments in the striatal cells of a mouse model of Huntington’s Disease”
- From January 2018 to March 2020 - FRG (Fondo Ricerca Giovani) Competitive Postdoctoral Fellowship, UNIPV
Project “Dissecting the impairment of cortical inputs towards striatum in a mouse model of Huntington’s Disease” (project that involves the collaboration of 5 research groups)
- September 2017 to date – core member of the crowdfunding campaign "The cure within a cell" (<https://universitiamo.eu/campaigns/cura-in-cellula/>) hosted by "Universitiamo by UNIPV", the University Crowdfunding Platform by UNIPV (the project raised more than 73000 euros until now)
- Travel Grants (International School of Biophysics - Erice, Italy, 11-17 May 2011) and Best Poster awards (62nd National SIF Congress - Sorrento, Italy, 25-27 September 2011; Annual Meeting of Young Researchers in Physiology - Pisa, Italy, 16-19 June 2010)

D. Teaching and Tutoring

- 2022-present: Lecturer for Physiology courses (BIOS-06/A) - Dept. Biology and Biotechnology, University of Pavia (IT)
 1. Cellular and Advanced Systemic Neurophysiology (3CFU; 24 hours/year - M.Sc. in Neurobiology)
 2. Neuroanatomy (3CFU; 24 hours/year - M.Sc. in Neurobiology)
 3. General Physiology (3CFU; 24 hours/year - B.Sc. in Biological Sciences)
 4. Bioengineering and Physiology (3CFU; 27 hours/year - B.Sc. in Bioengineering)
 5. Environmental Physiology (3CFU; 24 hours/year - M.Sc. in Experimental and Applied Biology)
- 2022-present: Supervision of undergraduate and graduate students
Advisor of 1 PhD student (Jessica Cazzola, currently involved in the PhD program), 4 M.Sc. students in Neurobiology, 1 M.Sc. student in Experimental and Applied Biology, 1 B.Sc. student in Biotechnology, and 5 B.Sc. students in Biological Sciences
- 2009–2022: Teaching Assistant for Physiology courses (formerly BIO/09, now BIOS-06/A), University of Pavia (IT)

E. Organization of scientific conferences, Coordination of academic activities, Administrative roles

- 2022–present: Leader of an independent research team within the Laboratory of Biophysics of Ion Channels and Neurophysiology (UNIPV); directly supervising and funding 1 Postdoctoral Researcher and 1 PhD Student
- 2022–present: Member of Departmental Selection Committees for Postdoctoral Research Fellowships, UNIPV.
- 2026: Member of the Departmental Committee for the Optimization and Management of in-itinere Student Evaluations, UNIPV
- 2022–present: Designated Supervisor for Laboratory Safety Regulations (Preposto alla Sicurezza, D. Lgs. 81/ 08), managing safety protocols for research staff and students
- 2022–present: Member of the Academic Committee for the Master’s Degree in Neurobiology, responsible for the administrative and organizational management of the study program, University of Pavia
- 2025: Organizer and Coordinator of the "Career Day for Neurobiology Students", an academic initiative aimed at bridging the gap between university training and the job market, UNIPV
- 22-23 September 2022 - Congress "Next Generation Neurobiology Training" - UNIPV
Member of the organizing committee and co-chair (Session 2: Neurodegenerative disease and Neural stem cells)
- 22 November 2021 –Symposium in memory of Professor Jacopo Magistretti – UNIPV
Member of the organizing committee: scientific symposium organized with the participation of international speakers working in neuroscience and/or neurophysiology fields

F. Membership of scientific societies

- 2017 to date – The Italian Society of Physiology (SIF)
- 2021 to date – Italian Society for Neuroscience (SINS)

G. Editorial Activity

- 2023: Guest Editor for *Frontiers in Molecular Neuroscience*
Edited Research Topic: "Oxytocin in brain health and disease: how can it exert such pleiotropic neuromodulatory effects?" (Collection of 11 international scientific contributions)
- 2022-present: Review Editor for *Frontiers in Neuroscience* (section Neurodegeneration)
- External Referee: Served as an ad-hoc Peer Reviewer for peer-reviewed international scientific journals, including *Journal of Neurochemistry*, *Brain Sciences*, and *Archives Italiennes de Biologie*

H. Outreach, Dissemination, and Media Coverage

- 2025-2026: Project "penne amiche della scienza"
- 2025-2026: Project "1h con il ricercatore" ("Neupolis: la città dei neuroni" - Schools Leonardo da Vinci, Severino Boezio, Felice Casorati in Pavia)
- 2018, 2019, 2020, 2021, 2022, 2023, 2024: European Researchers' Night ("MagicaMENTE!" & "Neupolis") - Pavia, IT
- 2020, 2021: Researchers in the classroom (Liceo Scientifico "Copernico", Pavia, IT – Liceo Scientifico "Mascheroni", Bergamo, IT)
- 24 September 2020: Disseminative article for "La Repubblica" ("Salute" insert).
- 8 September 2020: Interview for Fondazione Umberto Veronesi
- 2017 – 2019: organization of more than 30 public engagement and fundraising events for the crowdfunding campaign "The cure within a cell", supported by the University of Pavia (e.g. bridal fashion show, ballet shows, concerts, exhibitions, school students' drawings contests, disseminative seminars, ...)
- 6 March 2018: speaker at "Mission Impossible: Fundraising" (Activators Pavia & Unipv Innovation & StartupEurope Week)
- 2019-2020: Interviews and articles (ANSA, Adnkronos, La Repubblica, Corriere della Sera, Il Sole 24 Ore, Il Messaggero, Il Mattino, Gazzetta di Parma, La Provincia Pavese, Radio2, Radio3Scienza, RAI Scuola) about a paper I co-authored published in *Nature* (Vrselja et al., 2019). The same publication received great international media coverage (e.g. The New York Times, The Washington Post, The Guardian, Daily Mail, ...).
- 2017-2018: Articles and interviews on the newspapers "La Provincia Pavese", "Il Settimanale Pavese", and "Il Ticino" about some of the disseminative events I organized for the crowdfunding campaign "The cure within a cell".
- November 2014: article on the newspaper "La Provincia Pavese" about a paper I co-authored (Onorati et al., 2014).

H. Major contributions to science

- Oxytocin (OT): My research group has provided the first detailed description of how OT modulates hippocampal CA1 GABAergic interneurons (*Int J Mol Sci*, 2024; *Front Cell Neurosci*, 2019). This functional characterization of inhibitory networks is extended through established national and international collaborations, including Prof. Y. Yanagawa (Gunma University, Japan).
- Huntington's Disease (HD): Through long-standing collaborations with Prof. E. Cattaneo and Prof. C. Zuccato (University of Milan), my research has contributed to uncovering key mechanisms of corticostriatal synaptic dysfunction in HD, demonstrating how SREBP2-mediated cholesterol biosynthesis (*Brain*, 2021) or ADAM10 inhibition via BDNF/TrkB signaling (*J Clin Invest*, 2019; *CMLS*, 2024) rescues neuronal connectivity. Currently, as PI of a PRIN PNRR 2022 project, I coordinate a collaborative network with Prof. Zuccato and Dr. F. Cupaioli (CNR) to investigate the effects of intranasal OT in HD mice, directly laying the scientific and methodological foundation for the feasibility of the present proposal.
- Advanced Networks & Disease Modeling: My core expertise in GABAergic networks, disease modeling, and neurorepair is backed by high-level national and international collaborations. This led to defining membrane resonance properties and network dysfunctions in epilepsy with Prof. Yanagawa, Prof. C.T. Dickson, and Prof. I. de

Curtis (Front Cell Neurosci, 2021; Cereb Cortex, 2014, 2016). Additionally, working with Prof. Cattaneo, Prof.M. Onorati, and Prof. S.M. Strittmatter, I verified the functional differentiation and transplantation of stem cells (Development, 2013; Nat Neurosci, 2014; Nat Commun, 2018). Finally, under Prof. N. Sestan (Yale University), I co-authored the breakthrough study on post-mortem brain function restoration (Nature, 2019), solidifying a world-class network in advanced neurophysiology that ensures the technical feasibility of this project.

I. Selected publications

Author of **27** publications on peer-reviewed international journals; total citations: **865**; h-index: **14** (Source: Scopus)

1. Castagno AN, Spaiardi P, Trucco A, Maniezzi C, Raffin F, Mancini M, Nicois A, Cazzola J, Pedrinazzi M, Del Papa P, Pisani A, TALPO F*, Biella GR*. Oxytocin Modifies the Excitability and the Action Potential Shape of the Hippocampal CA1 GABAergic Interneurons. Int J Mol Sci. 2024 Feb 23; 25(5):2613. doi: 10.3390/ijms25052613. *co-last authors
2. Brandalise F, Ramieri M, Pastorelli E, Priori EC, Ratto D, Venuti MT, Roda E, TALPO F*, Rossi P.* Role of Na⁺/Ca²⁺ Exchanger (NCX) in Glioblastoma Cell Migration (In Vitro). Int J Mol Sci. 2023 Aug 11;24(16):12673. doi: 10.3390/ijms241612673. *co-last authors
3. Maniezzi C*, TALPO F*, Spaiardi P, Toselli M, Biella G. Oxytocin Increases Phasic and Tonic GABAergic Transmission in CA1 Region of Mouse Hippocampus. Front Cell Neurosci. 2019 May 7; 13:178. doi: 10.3389/fncel.2019.00178. *co-first authors
4. Vrselja Z, Daniele SG, Silbereis J, TALPO F, Morozov YM, Sousa AMM, Tanaka BS, Skarica M, Pletikos M, Kaur N, Zhuang ZW, Liu Z, Alkawadri R, Sinusas AJ, Latham SR, Waxman SG, Sestan N. Restoration of brain circulation and cellular functions hours post-mortem. Nature. 2019 Apr;568(7752):336-343. doi: 10.1038/s41586-019-1099-1. Epub 2019 Apr 17. PMID: 30996318; PMCID: PMC6844189.
5. 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. PMID: 34366789; PMCID: PMC8339929. *co-first authors