UNIVERSITÀ DEGLI STUDI DI MILANO

TO MAGNIFICO RETTORE OF UNIVERSITA' DEGLI STUDI DI MILANO **ID CODE ____6229____**

I the undersigned asks to participate in the public selection, for qualifications and examinations, for the awarding of a type B fellowship at **Dipartimento di** Dipartimento di Scienze della Salute dell'Università degli Studi di Milano

Scientist- in – charge: **_PROFESSOR FEDERICO BIGLIOLI__**

[FRANCESCA RAFFIN]

CURRICULUM VITAE

PERSONAL INFORMATION

Surname	RAFFIN
Name	FRANCESCA

PRESENT OCCUPATION

Appointment	Structure
UNEMPLOYED	

EDUCATION AND TRAINING

Degree	Course of studies	University	year of achievement of the degree
Degree	LM-6 NEUROBIOLOGY	UNIVERSITY OF PAVIA	2020
Specialization			
PhD	BIOMEDICAL SCIENCES	UNIVERSITY OF PAVIA	SPRING 2024
Master			
Degree of medical specialization			
Degree of European specialization			
Other			

Università degli Studi di Milano – Direzione Trattamenti Economici e Lavoro Autonomo
Ufficio Contratti di formazione e Ricerca
Via Sant'Antonio 12 - 20122 Milano, Italia
assegni.ricerca@unimi.it DTELA_M_CVAssegniENG_rev. 00 del 02/09/2021

REGISTRATION IN PROFESSIONAL ASSOCIATIONS

Date of registration	Association	City

FOREIGN LANGUAGES

Languages	level of knowledge
ENGLISH	B2

AWARDS, ACKNOWLEDGEMENTS, SCHOLARSHIPS

Year	Description of award
2022-2023	INTEGRATIVE SCHOLARSHIP FOR RESEARCH ABROAD DURING THE PHD PROGRAM IN BIOMEDICAL SCIENCES, AWARDED BY PROF. ELDA ARRIGONI (BETH ISRAEL LAHEY CENTER – HARVARD MEDICAL SCHOOL - BOSTON – MA - USA)
2020-2023	SCHOLARSHIP FOR DOCTORAL PROGRAM IN BIOMEDICAL SCIENCES, AWARDED BY THE UNIVERSITY OF PAVIA
2020	SCHOLARSHIP FOR RESEARCH ABROAD DURING THE MASTER'S DEGREE INTERNSHIP IN NEUROBIOLOGY, AWARDED BY PROF. ELDA ARRIGONI (BETH ISRAEL DEACONESS MEDICAL CENTER – HARVARD MEDICAL SCHOOL - BOSTON – MA - USA)

TRAINING OR RESEARCH ACTIVITY

description of activity

During the internship for my Bachelor's degree (Bachelor's degree in Biological Sciences, UNIFE, FE) conducted at the laboratory of Prof. M.C. Zatelli at the Sant'Anna University Hospital in Ferrara, between 2015 and 2016, I primarily worked on models of breast cancer cell cultures. Throughout this internship, which concluded with a successful protein interaction assay with immunoprecipitation, I acquired a set of skills related to molecular biology and the research environment in general. Specifically, the techniques I worked with included bacterial transformation, DNA extraction using QIAcube, transfection of cell cultures, protein extraction, protein quantification through BCA, immunoprecipitation, Western blot, Protein Ligation Assay (PLA), expansion, and maintenance of three breast cancer cell culture lines, as well as pharmacological treatments.

During the internship for my Master's thesis in Neurobiology in 2019, I joined the laboratory of Prof. G.R. Biella at the University of Pavia. Here, I had the opportunity to learn the patch clamp technique for measuring the electrophysiological activity of hypothalamic neurons on mouse brain sections. Thanks to the knowledge acquired in the initial months, I conducted a research period during the same Master's thesis internship at the laboratory of Prof. E. Arrigoni at the Beth Israel Beth Israel Deaconess Medical Center in Boston in 2020. Here, I had the opportunity to learn new techniques, particularly microsurgical operations for viral vector injections in murine animal models and ex vivo optogenetic stimulation.

Immediately following the completion of my Master's degree in Neurobiology in November 2020, I started the Ph.D. program in Biomedical Sciences at the University of Pavia. I conducted the first year of research activities in the laboratory of Prof. G.R. Biella, focusing more on developing a repeatable protocol for long-term potentiation of CA3-CA1 circuits in the hippocampal cortex in mouse brain sections, using electrical stimulation and the patch clamp technique. Additionally, I performed other laboratory activities, including genotyping of animal models, animal colony management, preparation of recording samples, data analysis, managerial tasks, and training activities related to the Ph.D. program.

In 2022, I returned to the research laboratory of Prof. E. Arrigoni in Boston, where I mainly worked on the

experimental and analytical setup of calcium imaging for recordings on mouse brain sections. I was involved in all stages of establishing a functional and reliable system, allowing me to conduct a series of recordings within various research projects coordinated by the laboratory's PostDocs, all primarily focused on understanding the functioning of brain systems involved in the control of sleep-wake functions and circadian rhythms in their entirety and complexity. During this research period, I learned the calcium imaging technique, refined my skills with the patch clamp technique related to optogenetic stimulation, and performed microsurgery operations for viral vector injections, as well as basic histology techniques. During the same period, as part of collaboration, I had the opportunity to contribute to the development of a protocol for ex vivo calcium imaging experiments that involve precise temperature control.

Additional information:
Practice in single cell patch-sequencing sample preparation with Single-Cell-to-C_T kit (Thermo Fisher).
General introduction to behavioral studies using stress-inducing protocols.
General introduction of confocal acquisition of formalin fixed brain slices.
Advanced knowledge of scientific software for acquisition and data analysis in neurophysiological recordings: Clampex, Multiclamp, Clampfit, Mini-analysis Program-Synaptosoft, Fiji-ImageJ, Suite2p, Origin, Prism Graphpad. Working knowledge of programming with MATLAB and Python. Thorough knowledge of desktop software tools Microsoft Word, Excel, PowerPoint.Thorough knowledge of the main Internet Browsers.

PROJECT ACTIVITY

Year	Project

PATENTS

Patent

CONGRESSES AND SEMINARS

Date	Title	Place
11-15 NOVEMBRE 2023	***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 – WASHINGTON DC, VA, USA
11-15 NOVEMBRE 2023	*N. L. S. Machado, **F. Raffin**, S. Kaur, A. S. Banks, N. Lynch, O. Fanari, O. R. Plascencia, S. Aten, J. D. Lima, S. S. Bandaru, R. D. Palmiter, E. Arrigoni and C. B. Saper.*	SFN – WASHINGTON DC, VA, USA

	EP3R-expressing preoptic neurons act as a two-way master switch for thermoregulation	
11-15 NOVEMBRE 2023	*R. De Luca, J. Choi, C. A. Cano, **F. Raffin**, S. Nardone, B. Fitzgerald, A. Pigozzi, O. Fanari, L. Zhu, C. R. Burgess, T. E. Scammell and E. Arrigoni.* Effect of noradrenaline in the ventrolateral preoptic area.	SFN – WASHINGTON DC, VA, USA
14-17 STTEMBRE 2023	*AN Castagno; P. Spaiardi, A. Trucco, C. Maniezzi, **F. Raffin**, M. Mancini, A. Nicois, J. Cazzola, P. del Papa, M. Pedrinazzi, A. Pisani, F. Talpo, G.R. Biella.* Shaping the spikes: oxytocinergic modulation of action potentials in the CA1 hippocampal region of mice.	SINS – TURIN, ITALY
11-15 NOVEMBRE 2022	*R. De Luca, C. Cano, **F. Raffin**, O. Fanari, S. Nardone, B. Fitzgerald, L. Zhu, T. E. Scammell and E. Arrigoni.* Noradrenaline in the ventrolateral preoptic area.	SFN – SAN DIEGO, CA, USA
22-23 SETTEMBRE 2022	*C. Canevari, A. Trucco, **F. Raffin**, F. Talpo, D.E. Bisceglia, F. Ruto, C. Salerno, M. Valenza, G. R. Biella.* Restoration of cortico-striatal connectivity in a mouse model of Huntington's disease through the administration of cholesterol-loaded nanoparticles	Next Generation neurobiology training: a new era begins at University of Pavia, PAVIA
10-13 GIUGNO 2021	***F. Raffin**, M. Cristofolini, G.R. Biella, P.M. Fuller and E. Arrigoni* Vasoactive intestinal polypeptide directly excites neurons of the subparaventricular zone	Virtual SLEEP 35th Annual Meeting of the Associated Professional Sleep Societies, LLC

PUBLICATIONS

Books
[title, place, publishing house, year …]
[title, place, publishing house, year …]
[title, place, publishing house, year …]

Articles in reviews
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. 23 November 2020
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. PMID: 36816855; PMCID: PMC9932910.
SUBMITTED ON DECEMBER 2023
Scolz A, Vezzoli E, Villa M, Talpo F, Cazzola J, **Raffin F**, Cordiglieri C, Falqui A, Besusso D, Biella GR, Zuccato C. Neuroprotection by ADAM10 inhibition requires TrkB signaling in the HD hippocampus. EMBO Molecular Medicine.
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. Turn me on and change my shape: oxytocin modifies the excitability and the action potential shape of the hippocampal CA1 GABAergic interneurons in independent fashions.

Congress proceedings
[title, structure, place, year]
[title, structure, place, year]
[title, structure, place, year]

OTHER INFORMATION

Declarations given in the present curriculum must be considered released according to art. 46 and 47 of DPR n. 445/2000.

The present curriculum does not contain confidential and legal information according to art. 4, paragraph 1, points d) and e) of D.Lgs. 30.06.2003 n. 196.

Please note that CV WILL BE PUBLISHED on the University website and It is recommended that personal and sensitive data should not be included. This template is realized to satisfy the need of publication without personal and sensitive data.

Please DO NOT SIGN this form.

Place and date: __PORDENONE (PN)_, 14/01/2024