Curriculum vitae et studiorum

ANNA MARIANO

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Personal Details

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Work experience

01/09/2023 – current

Postdoctoral Research scientist @ Università degli Studi di Napoli "Federico II", Naples (Italy)
Project: Up-scaling the global univocal identification of medicines – UNICOM (Grant agreement ID: 875299)
PI: Prof. Maurizio Taglialatela

- Multielectrode arrays (MEA) recordings from primary neurons and acute brain slices;
- Molecular and cellular biology techniques such as DNA extraction, agarose gel electrophoresis, PCR, western blot;
- Student supervision in laboratory activities and thesis writing;
- Grant writing (FIS 2023).

01/11/2021 – 31/07/2023

Technologist-Researcher @ Tissue Electronics Lab, Italian Institute of Technology (IIT), Naples (Italy)
Project: Brain Virtual Interactivity Platform – BraVI (PNR 2015-2020)
PI: Prof. Francesca Santoro

- Project & Team management;
- Strategic planning & Analysis;
- 2D/3D cell culture of different cell lines and primary neurons;
- Characterization of cell-interface interactions and topography-mediated cell behaviour;
- Cell vitality/proliferation assays;
- Multielectrode arrays (MEA) recordings from primary neurons and cardiomyocytes;
- Immunocytochemistry, confocal microscopy and calcium imaging;
- Student supervision in laboratory activities and thesis writing;

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- Grant writing (ERC STG 2022).

01/04/2020 – 31/10/2021

Postdoctoral research scientist @ Tissue Electronics Lab, Italian Institute of Technology (IIT), Naples (Italy)
PI: Prof. Francesca Santoro

- 2D/3D cell culture of different cell lines and primary neurons;
- Characterization of cell-interface interactions and topography-mediated cell behaviour;
- Cell vitality/proliferation assays;
- Multielectrode arrays (MEA) recordings from primary neurons and cardiomyocytes;
- Immunocytochemistry, confocal microscopy and calcium imaging;
- Student supervision in laboratory activities and thesis writing
- Grant writing (MSCA individual fellowship 2020, EIC pathfinder 2021).

01/10/2018 – 30/09/2019

Postdoctoral research scientist @ University of Dundee, Dundee (UK)

- Stereotaxic surgery in anaesthetized rats, bregma and lambda identification;
- Electrode implantation, intraventricular cannulae implantation;
- Local field potential (LFP) recording, fEPSPs recording;
- Molecular and cellular biology techniques such as DNA extraction, agarose gel electrophoresis, PCR, western blot.
- Immunohistochemistry (trans-cardiac perfusion, tissue extraction, fixation, slicing and staining).

PI: Prof. Jeremy Lambert and Prof. Stephen Martin

Education

12/11/2014 – 30/09/2018

Doctor of Philosophy (PhD) in Medicine @ University of Dundee, Dundee (UK) Ph.D. thesis title: "*Opioid modulation of AMPA receptors: A new target to treat mood disorder and cognitive dysfunction*"
Supervisors: Prof. Jeremy Lambert and Dr. Rosamund Langston
Funding: "*The 2014 Princess Royal Tenovus Scotland Medical Research Scholarship*" (50K)**.**

- Rodent husbansdry, colony management, animal handling (ear tagging, weaning), genotyping;
- Rodent behaviour (Morris water maze, novel object recognition task, novel place recognition task, hippocampal-dependent episodic memory task, open field);
- Whole cell patch-clamp technique (mIPSCs, sEPSCs, eEPSCs recordings), data analysis;
- Reports and papers writing;
- Supervision and training of students.

08/06/2015 – 02/08/2015

***"Neural systems and Behavior"* neuroscience summer course @ Marine Biological Laboratory (MBL), Woods Hole (USA)**

- Electrophysiological recordings in current clamp and voltage clamp configuration, extracellular recordings, and intracellular dye injection;
- Optogenetic tools for neural stimulation and calcium imaging in C. elegans.

01/09/2014 **Professional qualification – Biologist, Section A (Abilitazione all'esercizio della professione di Biologo, Sezione A) @ Università degli Studi di Napoli "Federico II", Naples (Italy)**

01/03/2012 –24/03/2014 **Master's Degree in Biological sciences (molecular diagnostics) @ Università degli Studi di Napoli "Federico II", Naples (Italy)**
Thesis title: "*"Effect of diet in rats exposed to associative learning*"
Supervisors: Prof. Marianna Crispino
Grade: 110/110 cum laude

- Rat handling, colony management;
- Rat behaviour (two-way active avoidance task);
- Molecular biology techniques such as DNA and RNA extraction, agarose gel electrophoresis, PCR, qRT-PCR, western blot;
- Supervision and training of students.

01/09/2008 –22/03/2012 **Bachelor's Degree in Biological sciences @ Università degli Studi di Napoli "Federico II", Naples (Italy)**
Thesis title: "Evaluation of the effects elicited by InP QDs treatment in Hydra vulgaris"
Supervisors: Prof. Marianna Crispino and Dr. Angela Tino
Grade: 110/110 cum laude

- Experience in molecular biology techniques such as DNA extraction, qRT PCR
- DAPI staining for cell vitality;
- Maintenance of Hydra vulgaris in standard lab conditions.

01/09/2003 –30/06/2008 **High School Diploma specializing in scientific subjects @ I.M.S. Virgilio, Pozzuoli (Italy)**
Grade: 100/100

Awards

- Awarded in 2021 with the Seal of Excellence for a Marie Curie Individual Fellowship;
- Awarded in 2015 with $8800 by the Marine Biological Laboratory (MBL) and Genentech to attend the **"Neural Systems and Behavior"** course in Woods Hole (Massachusetts, USA). Only 20 students are accepted every year amongst applicants from all over the world;
- Awarded in 2014 with "*The 2014 Princess Royal Tenovus Scotland Medical Research Scholarship"* from Tenovus Scotland to fund PhD studentship at the University of Dundee (50K);

Publications (*: first author; $^{\pm}$: corresponding author)

-Latte Bovio C, **Mariano A**$^{\pm}$, Santoro F$^{\pm}$ (2024) Electron Microscopy of Neurons on Biomimetic Substrates. Book Chapter included in Neuronal Morphogenesis - Methods and Protocols which will be published by Springer Nature as a volume of Methods in Molecular Biology. In print.

-Bruno U*, **Mariano A***, Rana D, Gemmeke T, Musall S, Santoro F. (2023) From neuromorphic to neurohybrid: transition from the emulation to the integration of neuronal networks. Neuromorph. Comput. Eng. 3 (2), 023002. doi: 10.1088/2634-4386/acc683
IF: not available

-**Mariano A***, Fasolino I*, Dinger NB, Latte Bovio C, Bonadies I, Pezzella A, Ambrosio L, Raucci MG, Santoro F (2023) Eumelanin Coated PLA Electrospun Microfibers to guide SH-SY5Ycells morphology, elongation and differentiation. Adv. Mater. Interfaces 2023, 10, 2202022. doi: 10.1002/admi.202202022
IF: 6.39

-Ausilio C, Lubrano C, **Mariano A**, Santoro F (2022) Negatively-charged supported lipid bilayers regulate neuronal adhesion and outgrowth. RCS Advances 12 (47), 30270-30277. doi: 10.1039/D2RA05147H
IF: 4.04

-Matino L*, **Mariano A***, Ausilio C, Garg R, Cohen-Karni T, Santoro F. (2022) Modulation of early- stage neuronal outgrowth through out- of- plane graphene. Nano Letters 22 (21), 8633-8640. doi: 10.1021/acs.nanolett.2c03171.
IF:10.80

-**Mariano A***$^{\pm}$, Latte Bovio C, Criscuolo V, Santoro F$^{\pm}$. (2022) Bioinspired micro- and nano- structured neural interface. Nanotechnology 33 492501. doi: 10.1088/1361-6528/ac8881
IF: 3.50

- Lunghi A*, **Mariano A***, Dinger NB, Murgia M, Rondanina E, Toma A, Di Lauro M, Bianchi M, Santoro F, Fadiga L, Biscarini F (2022) Soft neural interfaces with PEDOT:PSS micropillar arrays. Adv. Mater. Interfaces 2023 9 (25), 2270139. doi: 10.1002/admi.202200709
IF: 6.39

-Elnathan R*, Barbato MG*, Guo X*, **Mariano A***, Wang Z*, Santoro F, Shi P, Voelcker NH, Xie X, Zhao Y, Zhao W*, Chiappini C (2022) Biointerface design for vertical nanoprobes. Nat Rev Mater 7, 953–973. doi: 10.1038/s41578-022-00464-7
IF: 76.68

-**Mariano A***, Lubrano C, Bruno U, Ausilio C, Dinger NB, Santoro F. (2021) Advances in cell- conductive polymer biointerfaces and role of the plasma membrane. Chem. Rev. 2022, 122, 4, 4552– 4580. doi: 10.1021/acs.chemrev.1c00363.

IF: 72.09

-Chiappini C, Chen Y, Aslanoglou S, **Mariano A**, Mollo V, Huanwen M, De Rosa E, He G, Tasciotti E, Xie X, Santoro F, Zhao W, Voelcker NH, Elnathan R (2021) Tutorial: nanoneedles for intracellular delivery. Nat Protoc 16, 4539–4563. doi:10.1038/s41596-021-00600-7.
IF: 17.02

-Bruno U, **Mariano A**, Santoro F (2021) A systems theory approach to describe dynamic coupling at the cell–electrode interface. APL Materials 9, 011103. doi: 10.1063/5.0025293.
IF: 6.63

Atti di convegno
Cefaliello C, **Mariano A**, Virtuoso A, Perrone-Capano C, Crispino M. Modulation of synaptosomal system of protein synthesis. 65th National Congress of the Italian Physiological Society – SIF, ISBN: 978-88-940105-0-3, 2014; pp201.

Work presented

-Anna Mariano, Francesca Santoro. Neuro-inspired micro- and nano-structured substrates for biomimetic neural interfaces. CIMTEC 2022- 9th Forum on New Materials, Perugia (Italy) (**2022**). ***Invited oral presentation.***

-Chiara Ausilio, Claudia Lubrano, **Anna Mariano**, Francesca Santoro. Negatively-charged supported lipid bilayers regulate neuronal adhesion and outgrowth. Orbitaly, Erice (Italy) (**2021**). ***Poster presentation.***

-Anna Mariano, Jeremy Lambert, Ros Langston. GluA1-containing AMPA Receptors Dysfunction in a Mouse Model of Huntington's Disease. Scottish Neuroscience Group annual meeting, Aberdeen (Scotland, UK) (**2017**). ***Oral presentation.***

-Anna Mariano, Olivia Monteiro, Jeremy Lambert, Ros Langston. Episodic memory and cognitive flexibility in the HdhQ111 mouse model of Huntington's Disease. Society for Neuroscience annual meeting, San Diego (USA) (**2016**). ***Poster presentation.***

-Carla Cefaliello, **Anna Mariano**, Assunta Virtuoso, Carla Perrone-Capano, Marianna Crispino. Modulation of synaptosomal system of protein synthesis. 65th National Congress of the Italian Physiological Society – SIF, (Italy) (**2014**). ***Poster presentation.***

Institutional responsibilities

2021 – 2023: Co-founder of the IIT Postdoc community, Istituto Italiano di Tecnologia, Italy.
2020 – 2022: Co-organizer of seminars and outreach activities, Istituto Italiano di Tecnologia, Italy.
2018 – 2019: Co-organizer of seminars and outreach activities, Division of Neuroscience, Medical Research Institute, University of Dundee, Dundee, UK.

Date
05/02/2024

Signature
Dr. Anna Mariano