

Curriculum Vitae

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PhD student - Marie Skłodowska-Curie fellow

INSERM UMR-S 1237

Physiopathology and Imaging of Neurological Disorders (PhIND),
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ENTRAIN: <https://itn-entrain.eu/early-stage-researchers?esr=8>

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ResearchGate: https://www.researchgate.net/profile/Martina_Glavan

Twitter group: <https://twitter.com/vivienslab1>

EDUCATION

- 10/2019–Present **Ph.D.** in Biological and Biomedical Sciences
Université de Caen Normandie, France
Mentors :
 - Pr. Denis Vivien, PhD
 - Marina Rubio, PhD
- 09/2016–07/2017 **M.Sc.** in Bio-Industrial Techniques,
Université d'Orléans, France
Completed Master 2 study at the Collegium Sciences et Techniques in the
field of Biology and Biochemistry.
Graduated with the thesis titled: *Bio-Acoustic Levitation Assembly Method for
Engineering of Multilayered, 3D Cortex-like Construct*
- 09/2015–07/2017 **M.Sc.** in Molecular biotechnology
University of Zagreb, Croatia
Participated in the Double-Master's program between the University of
Orléans and the University of Zagreb.
*Among the 10% of the most successful students at the University
- 09/2012–06/2015 **B.Sc.** in Biotechnology
University of Zagreb, Croatia
Final Thesis: *Investigation of the processing of yeast cell wall protein Scw4p
in the kex2 and 5ypsΔkex2 mutant of S. cerevisiae*

RESEARCH EXPERIENCE & POSITIONS

10/2019–Present **PhD Student at INSERM within the Marie Curie Innovative Training Network ENTRAIN**

The research is done as a part of Marie Skłodowska-Curie Actions (MSCA) project ENTRAIN funded by European Commission. This network composed of researchers from 8 European countries has the aim to investigate inflammatory processes in the brain (<https://itn-entrain.eu/home>).

My part of research within the ENTRAIN project is focused mostly on cerebral aneurysms and role of perivascular macrophages within the pathophysiology.

Using different imaging methods, such as molecular MRI and functional Ultrasound, we are working on prediction of formation or rupture of this vessel malformation present in almost 5% of the whole world's population.

The research is directed towards the 3 main aims:

- **Development of new mouse model of intracranial aneurysms** (IAs) at the Middle Cerebral Artery (MCA) that would allow to perform longitudinal imaging studies.
- **Characterization of the model by using multimodal imaging methods** - molecular imaging sessions by MRI (tool developed in our laboratory that allows to non-invasively assess vascular inflammation, targeting adhesion molecules (VCAM-1, P-selectin) expressed at the surface of activated endothelial cells); functional ultrasound (fUS) imaging; and 2-photon *in vivo* microscopy.
- **Studying the role of Perivascular macrophages in Aneurysm physiopathology**
The inflammatory phenomena and the frequency of the aneurysm occurrence to be compared between naive mice and mice with depleted PVMs.

*The research is performed in the INSERM Unit; Physiopathology and Imaging of Neurological Disorders (PhIND) as a collaboration with Caen Normandy University.

03/2019–10/2019 **Senior Pharmacovigilance Associate** PrimeVigilance Ltd., Zagreb, Croatia.

- Mainly working on clinical trials of new drugs by processing of Individual Case Safety Reports (ICSRs) which includes - performing Data Entry, Triage and Quality Review of ICSRs entered by peers and tracking the errors. Proficient at all of the mentioned stages with high quality.
- Other activities on the project:
 - Studying and keeping track with all of the clinical trial protocol updates
 - Attending client meetings related to product safety
 - Leading team meetings
 - Controlled document writing – such as project specific Working Instructions training documents etc

- Mentoring new starters on the project on case processing activities
- Actively contributing to discussions regarding processing conventions during ad hoc meetings
- Work assignment and daily reconciliation

01/2018–13/2019 **Pharmacovigilance Associate**

PrimeVigilance Ltd., Zagreb, Croatia.

- Processing of Individual Case Safety Reports (ICSRs) in compliance with applicable pharmacovigilance regulations which includes:
 - performing a duplicate check, follow up on important case reports, analysing clinical trial data and performing data entry of adverse event case reports onto the safety database (Argus), coding data to MedDRA, writing case narrative, performing seriousness, listedness and labelling assessment of the adverse events, distributing cases to regulatory agencies etc.

01/2017–07/2017 **Research Intern at LabTAU**

Laboratory of Therapeutic Applications of Ultrasound, INSERM
Lyon, France

Mentor: Frédéric Padilla, PhD

- Involved in a multidisciplinary project, where ultrasound levitation was used to pattern neural progenitor stem cells in fibrin hydrogels, for applications in neural tissue engineering.
- My role was to optimize the technique to pattern, in a single fibrin hydrogel, neural stem cells at different stages of differentiation.
- Work included: fabrication of hydrogels, manipulation of acoustic levitation system and the characterization of ultrasound transducers, culture of neural stem cells and regular Hela cells, immunostaining and microscopy (both fluorescence and confocal) for analysis of the fabricated structures etc.

Research was done in two laboratories:

- LabTAU - Laboratory of Therapeutic Applications of Ultrasound
- SBRI - Stem-cell and Brain Research Institute

09/2015–12/2015 **Student Assistant at the Biochemistry module**

University of Zagreb, Faculty of Food Technology and Biotechnology,
Division of Biochemistry, Zagreb

- Demonstrating laboratory techniques to students mostly related to protein purification and characterization.

02/2015–07/2015 **BSc Research Student**

Mentor: Renata Teparic, PhD

Division of Biochemistry, Faculty of Food Technology and
Biotechnology, University of Zagreb, Croatia

PUBLICATIONS

- Alcohol exposure-induced neurovascular inflammatory priming impacts ischemic stroke and is linked with brain perivascular macrophages. *JCI Insight*. 2020 Feb 27;5(4):e129226. doi: 10.1172/jci.insight.129226
- Filling the gaps on stroke research: Focus on inflammation and immunity, *Brain Behav Immun*. 2020 Oct 2 doi: 10.1016/j.bbi.2020.09.025

AWARDS & GRANTS

10/2019 **Marie Skłodowska-Curie PhD Grant** (Scholarship from the European Commission as a part of the Marie Skłodowska-Curie Innovative Training Network program)

05/2018 **Regional student competition in Technology field - Tehnologijada 2018**
First place for the best scientific work

05/2017 **Scholarship for academic year 2016/2017. in the category of scholarships for excellence**
10% most successful students at the University of Zagreb

PUBLIC ENGAGEMENT AND SCIENTIFIC OUTREACH

05/2020 Presentation held to the group of Croatian professional athletes on Basic neuroscientific principles to improve sports performance (Platform: Zoom).

12/2019 Creating a video content to promote science and the MSCA ITN Network (<https://www.youtube.com/watch?v=UQvyZ9nrAzE>)

02/2020 Mentoring a Master student for 1 week
Going through the techniques and the principles of my project, explaining the aneurysm pathophysiology as well as the general values in research and everyday activities of a scientist.

RESEARCH RELATED SKILLS

- Brain imaging techniques
 - Magnetic Resonance Imaging:
trained and certificated to use 7-Tesla MRI from Bruker
 - functional Ultrasound imaging
(3D Scan, 2D and 4D Imaging with or without microbubbles)
- Microscopy (both fluorescent and confocal)
- Immunohistochemistry Analysis
- Image Analysis (Fiji/ImageJ, ITK Snap, MatLAB)

- Tissue Engineering
 - Fabrication of hydrogels
 - Manipulation of acoustic levitation system and the characterization of ultrasound transducers

- Cell culture
- Flow cytometry
- Protein purification methods
- Polymerase Chain Reaction (PCR)
- Scientific Writing
- Pharmacovigilance (Drug safety, familiar with FDA and EMA regulations)

OTHER SKILLS:

- Personal skills:

Hard-working person, with sound judgment and creativity, open and communicative. Highly motivated and eager to constantly learn with a main goal to excel in what I do.

- Communication skills:

Good verbal and written communication skills and adaptability to a multicultural environment.

- Organizational skills:

Autonomy while working but also inclination to teamwork, resourcefulness and ability to perform under pressure, high attention to details, able to plan and prioritize workload.

VOLUNTEERING EXPERIENCE:

09/2016 Assistant in Organization for the *Power of microbes in industry and environment* congress

10/2019 Volunteering with the homeless within the Jeunes Pro de Caen organization