



# Andrea Bortolin

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**ID:** CA00324EK | **Work permit:** Italian | **Date of birth:** 15/10/1988 | **Place of birth:** Venezia, Italy |

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## ● WORK EXPERIENCE

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### **MARIE-CURIE EARLY STAGE RESEARCHER – I3S - INSTITUTO DE INVESTIGAÇÃO E INOVAÇÃO EM SAÚDE DA UNIVERSIDADE DO PORTO – 01/02/2019 – 01/06/2024 – PORTO, PORTUGAL**

Thesis Title: **Mimicking the bone in a 3D compartmentalized microfluidic chip to fight cancer-associated bone pain.**

Supervisor: Prof. Meriem Lamghari | Co-supervisor: Dr. Estrela Neto

Achievements:

- Established a new protocol for osteoclasts differentiation and culture on a 3D matrix.
- Established a protocol for 3D breast cancer spheroids formation.
- Developed a microfluidic platform for osteoclasts and breast cancer spheroids co-culture.
- Improved a protocol for dorsal root ganglia dissociation for better yield and cells viability.
- Designed a new high throughput microfluidic platform for dorsal root ganglia growth quantification in response to external stimuli.
- Developed a new software for automated dorsal root ganglia axonal growth quantification specifically for the newly designed platform.

### **VISITING RESEARCHER – CELLECTRICON – 01/01/2022 – 01/03/2022 – MOLNDAL, SWEDEN**

Achievements:

- Assessed functional sensitization and axonal sprouting of sensory neurons in response to breast cancer- bone cells conditioned media in a high throughput microfluidic device.

### **TRAINEE – UNIVERSITY COLLEGE LONDON, GOS INSTITUTE OF CHILD HEALTH – 01/02/2017 – 01/08/2017 – LONDON, UNITED KINGDOM**

Thesis title: **Bioengineering techniques for hepatocytes functional maturation.**

Principal Investigator: Prof. Nicola Elvassore | Hosting Principal Investigator: Prof. Paolo de Coppi | Scientific Supervisor: Dr. Giovanni Giobbe | Course Internal Supervisor: Dr. Graziano Martello

Achievements:

- Established a protocol for human induced pluripotent stem cells (IPS) differentiation into hepatocytes for the first time in our lab.
- Hepatocytes were differentiated in a microfluidic platform and proven to have functionally improved expression profile and metabolic pathways.

### **TRAINEE – VENETIAN INSTITUTE OF MOLECULAR MEDICINE (VIMM) – 01/06/2015 – 01/10/2015 – PADOVA, ITALY**

Thesis Title: **Activation-Induced Cell Death is initially independent from Fas extrinsic apoptotic pathway.**

Principal Investigator: Prof. Luca Scorrano | Scientific Supervisor: Mauro Corrado

Achievements:

• Found a new possible correlation between Fas extrinsic apoptotic pathway and activation-induced cell death in T lymphocytes.

## ● EDUCATION AND TRAINING

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2019 – 2023 Porto, Portugal

**DOCTOR OF PHILOSOPHY IN BIOMEDICAL ENGINEERING** Universidade do Porto, Faculty of Engineering

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2015 – 2017 Padova, Italy

**MASTER OF SCIENCE IN MEDICAL BIOTECHNOLOGIES** Università degli Studi di Padova

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2012 – 2015 Padova, Italy

**BACHELOR OF SCIENCE IN BIOTECHNOLOGIES** Università degli Studi di Padova

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## ● SKILLS

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### Technical Skills

Microfluidic Systems, Organ on Chip | In-vitro Models | Fluorescent & confocal microscopy | Image process automation & quantification | Data analysis & visualization | High content imaging & analysis | Automated liquid handling & in-vitro diagnostics

### Cell Culture

Stem cell maintenance & differentiation | Isolation, maintenance, differentiation of human & mouse primary cells and immortalised cell lines | Organoids, 3D, 2D and suspension cell cultures

### Molecular Biology Techniques

DNA & RNA extraction, PCR, qPCR | ELISA | Western blot, immuno blot and visualization with Peroxidase-labelled antibodies | Immunohistochemistry and immunocytochemistry | Flow cytometry

### Bioengineering

Design and fabrication of organ-on-chip platforms | Substrate engineering & biomimetic systems | Tissue decellularization

### Microscopy & Imaging

Histological staining | Immunofluorescence, immunohistochemistry | Confocal microscopy | High throughput imaging and analysis

### Computer Skills

ImageJ / Fiji image analysis | Ilastik | GraphPad Prism | Python basic programming | LaTeX | 3D Design: Blender, AutoCAD Basic Knowledg | Graphic Design: Adobe Photoshop, Illustrator, InDesign

### Transversal

Analytical thinking | Problem solving | Curious mindset | Self-management & motivation | Independent | Socialization | Project Management & Grant writing for EU Commission

### Interpersonal

Collaboration | Partnership building | Scientific networking | Commercial awareness | Written & oral communication | Scientific communication | Team building & leading | Conflict management

## ● LANGUAGE SKILLS

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Mother tongue(s): **ITALIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
PORTUGUESE	C1	C1	B2	B2	A2

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
<b>SPANISH</b>	C1	C1	B1	B2	A2
<b>ENGLISH</b>	C2	C2	C2	C2	C2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

## ● MOBILITY EXPERIENCES

28/01/2022 – 31/03/2022

**Secondment within BonePain II H2020 project, Grant Agreement No: 814244**

Hosting Institution: Celectricon, Mölndal, SW

Description of the assignment: Sensory neurons functional sensitisation in response to breast cancer-bone cells conditioned media.

Supervisor: Paul Karila

01/02/2017 – 09/2017

**ERASMUS + Traineeship**

Hosting Institute: University College London, GOS Institute of Child Health, UK

Description of the assignment: Functional maturation of IPS-derived hepatocytes in microfluidic devices.

Supervisor: Giovanni Giobbe, Research Associate, University College London

## ● PUBLICATIONS

2025

[\*\*Deciphering cartilage neuro-immune interactions and innervation profile through 3D engineered osteoarthritic micropathophysiological system.\*\*](#)

**Authors:** Kahraman E, Vasconcelos D, Ribeiro B, Mastromatteo E, Bortolin A, Couto M, Monteiro AC, Boschis L, Lamghari M and Neto E | **Journal Name:** Material's Today Bio

2022

[\*\*Calcium Signalling in Breast Cancer Associated Bone Pain.\*\*](#)

**Authors:** Bortolin A, Neto E, Lamghari M. | **Journal Name:** International Journal of Molecular Science

2021

[\*\*Microfluidic-based models to address the bone marrow metastatic niche complexity.\*\*](#)

**Authors:** Ribeiro P, Leitão L, Monteiro AC, Bortolin A, Moura B, Lamghari M, Neto E. | **Journal Name:** Seminars in Cell & Developmental Biology

**Cost-effective microfluidic platform for neuronal sprouting quantification and characterization.**

In preparation

**Authors:** Bortolin A, Kahraman E, Neto E, Lamghari M. | **Journal Name:** Frontiers in Analytical Science

2023

[\*\*Mimicking the bone in a 3D compartmentalized microfluidic chip to fight cancer associated bone pain\*\*](#)

PhD Thesis

## ● CONFERENCES AND SEMINARS

19/03/2025 Webinar

**Non-animal approaches in cardiovascular science**

Topics presented:

- Advanced heart-on-a-chip models in disease modeling and drug screening. (Prof Milica Radisic, University of Toronto, Canada / Berlin Institute of Health at Charité, Germany)
- Human stem cell-derived cardiomyocytes for cardiotoxicity screens. (Prof Chris Denning, University of Nottingham, UK)
- High fidelity computational approaches to model cardiovascular diseases. (Dr Caglar Ozturk – University of Southampton, UK)

2025 The Francis Crick Institute, London, UK

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### **London Stem Cell Network 8th Annual Symposium**

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2024 Politecnico di Milano, Milan, Italy

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### **European Organ-on-Chip Society annual meeting**

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2024 The Francis Crick Institute, London, UK

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### **London Stem Cell Network 7th Annual Symposium**

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20/05/2021 – 21/05/2021 i3S - Instituto de Investigação e Inovação em Saúde da Universidade do Porto

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### **27th Porto Cancer Meeting**

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Stemness & Metastasis: Advances in Research and Clinical Translation

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## ● **NETWORKS AND MEMBERSHIPS**

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2019 – CURRENT

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### **BonePainII Marie-Curie Innovative Training Network**

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2024 – CURRENT

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### **London Stem Cell Network**

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## ● **POSTER PRESENTATION**

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### **Cancer Influence on Bone Cells in an Osteolytic in-vitro Model**

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Bortolin A., Neto E., AC Monteiro and Lamghari M., 27th Porto Cancer Meeting 2021, Porto, PT.

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## ● **TRAININGS & WORKSHOPS**

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09/2019

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### **BonePainII Innovative Training Network kick-off meeting, London Veterinary college, London, UK**

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04/2020

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### **BonePainII Project Check and First Annual Meeting, Online meeting to comply with COVID-19 safety guidelines.**

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09/2021

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### **BonePainII Second Annual Meeting, i3S - Instituto de Investigação e Inovação em Saúde, Porto, PT**

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05/2021

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### **Bioimage Analysis for High Content Screening, i3S - Instituto de Investigação e Inovação em Saúde, Porto, PT**

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05/2022

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### **BonePainII Third Annual Meeting, Astrazeneca, Cambridge, UK**

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27/06/2022 – 08/07/2022

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### **EIT Health Ageing PhD School, University of Coimbra**

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## ● **PUBLIC OUTREACH PARTICIPATION**

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2019 – 2024

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### **European Researcher Night, i3S - Instituto de Investigação e Inovação em Saúde, Porto**

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