Georgios Pavlou Ph.D.

Athens, Greece | pavlou.grgs@gmail.com
Current position: Founder and CEO at VNous

Education

University Grenoble Alpes, Grenoble, France 2020
Doctor of Philosophy (**PhD**) in Molecular and Structural Physical Chemistry - Biophysics

University Paris Diderot, Paris, France 2016
Master of Science (**MSc**) in Interdisciplinary Approaches in Life Sciences-Bioengineering

University of Aberdeen, Aberdeen, United Kingdom 2014
Master of Science (**MSc**) in Systems and Synthetic Biology

University of Crete, Heraklion, Greece 2012
Bachelor's degree (**BSc**) in Mathematics

Experience

Massachusetts Institute of Technology, Cambridge, United States 2020-2023
Postdoctoral researcher, Bioengineering/Microphysiological systems/Vascular biology/Neuroscience/Alzheimer's disease (Mentor: Prof Roger D Kamm)
Engineering an *in vitro* model of the human blood brain barrier (brain vessels) for Alzheimer's disease.

Massachusetts Institute of Technology, Cambridge, United States 2020-2023
Trainer-Consultant
Pharmaceutical industry scientific training-consulting (Novartis, Roche, Amgen, GlaxoSmithKline, Boehringer Ingelheim)

Institute for Advances Biosciences, Grenoble, France 2016-2020
PhD student, Biophysics/Parasitology/Infectious diseases/Live microscopy
Investigation of the movement and invasion process of the parasite *Toxoplasma* during cell infection.

University Paris Descartes, Paris, France 2016
Master's degree student, Biology/Bioengineering/Cancer
Resistance prediction of targeted cancer treatment using microfluidic platforms.

Hospital Institute Curie, Paris, France 2016
Master's degree student, Bioinformatics/Cancer
Focus on a global protein analysis of the tumor microenvironment in breast cancer patients using R programming language.

Institute Curie, Paris, France 2016
Master's degree student, Bioengineering/Cancer
Quantification of cancer cell migration events with a focus on the nucleus deformation using microfluidics and microscopy imaging.

National and Kapodistrian University of Athens, Medical School, Athens, Greece 2014-2015
Researcher, Molecular biology/Oncology
Working on cancer related projects to gain more experience in molecular biology experiments and mathematical modelling of biological processes.

Awards & Accomplishments

- 12 (+3 under review) publications in peer-reviewed scientific journals (Cell Host&Microbe, ACS nano, EMBO reports, Small methods, Journal of Experimental Medicine, Advanced Functional Materials)
- Presented more than 35+ times in worldwide meetings (United States, France, Switzerland, Portugal, United Kingdom, Greece)
- 1 scientific research grant writing (PhD extension fellowship)
- 2 conference prizes for best presentation

Skills

- Scientific writing
- Scientific consulting to universities and pharmaceutical industries
- Project manager (design and perform several experiments on different projects)
- Team manager (supervision of students and researchers)
- Presenting in worldwide meetings
- Social networks lab management (Website, Twitter, Instagram)
- Microscopy
- Traction force microscopy
- Atomic force microscopy
- Expansion microscopy
- Interference reflection microscopy
- Image analysis
- Microfluidics
- 3D printing (milling machine)
- Organ on chip
- Cell culture
- Molecular biology techniques (PCR, ELISA, Western blot, DNA handling)
- Immunohistochemistry
- MS Office
- GraphPad Prism
- MATLAB
- Adobe tools (Photoshop, Illustrator)

Other

- Mathematics-Biology teacher

Detailed publications

-**Pavlou G**, Jorfi M, Ko E, Zhang S, Ashley SJ, Floryan MA, Choi SH, Tanzi RE, Kamm RD (In submission-2023) Engineering a 3D functional neurovascular model for Alzheimer's disease.

-Maurissen TL, Spielmann A, Widmer G, Bickle M, **Pavlou G**, Westenskow PD, Kamm RD, Ragelle H (Submitted 2023 - Nature communications) Modeling early pathophysiological phenotypes of diabetic retinopathy in a human inner blood-retinal barrier-on-a-chip.

-Rustenhoven J, **Pavlou G**, Storck SE, Dykstra T, Du S, Wan Z, Quintero D, Scallan J, Smirnov I, Kamm RD and Kipnis J (2023) Age-related alterations in meningeal immunity drive impaired CNS lymphatic drainage. Journal of Experimental Medicine

-Zhang S, Wan Z, **Pavlou G**, Zhong A.X, Xu L, Kamm R.D (2022) Interstitial Flow Promotes the Formation of Functional Microvascular Networks *In Vitro* through Upregulation of Matrix Metalloproteinase-2. Advanced Functional Materials

-Wan Z, Zhong AX, Zhang S, **Pavlou G**, Coughlin MF, Shelton SE, Nguyen HT, Lorch JH, Barbie DA, Kamm RD. (2022) A Robust Method for Perfusable Microvascular Network Formation *In Vitro*. Small Methods

-Maurissen TL, **Pavlou G**, Bichsel C, Villaseñor R, Kamm RD, Ragelle H. (2022) Microphysiological Neurovascular Barriers to Model the Inner Retinal Microvasculature. Journal of Personalized Medicine

-**Pavlou G**, Touquet B, Vigetti L, Renesto P, Bougdour A, Debarre D, Balland M and Tardieux I. (2020) Coupling Polar Adhesion with Traction, Spring and Torque Forces Allows High-Speed Helical Migration of the Protozoan Parasite *Toxoplasma*. ACS Nano

-Siebert C, Villers C, **Pavlou G**, Touquet B, Yakandawala N, Tardieux I & Renesto P (2020) Francisella novicida and F. philomiragia biofilm features conditionning fitness in spring water and in presence of antibiotics. PLoS ONE

-**Pavlou G** & Tardieux I (2020) Phenotyping *Toxoplasma* Invasive Skills by Fast Live Cell Imaging. In Toxoplasma gondii, Tonkin CJ (ed) pp 209–220. New York, NY: Springer US

-Del Rosario M, Periz J, **Pavlou G**, Lyth O, Latorre-Barragan F, Das S, Pall GS, Stortz JF, Lemgruber L, Whitelaw JA, Baum J, Tardieux I & Meissner M (2019) Apicomplexan F-actin is required for efficient nuclear entry during host cell invasion. EMBO Reports

-**Pavlou G**, Milon G & Tardieux I (2019) Intracellular protozoan parasites: living probes of the host cell surface molecular repertoire. Current Opinion in Microbiology

-**Pavlou G**, Tardieux I (2018) The *Toxoplasma* Tour de Force to Unfold its Intravacuolar Developmental Program. Journal of Infectiology

-**Pavlou G**, Biesaga M, Touquet B, Lagal V, Balland M, Dufour A, Hakimi M & Tardieux I (2018) *Toxoplasma* Parasite Twisting Motion Mechanically Induces Host Cell Membrane Fission to Complete Invasion within a Protective Vacuole. Cell Host & Microbe