

MARIA TAMPAKAKI

100 N. Plastira St., Vassilika Vouton, GR-70013, Heraklion, Crete, Greece

+30 2810 392442 (w)
mairata@ics.forth.gr

Current Appointment

PhD student

University of Crete

Foundation for Research and Technology-Hellas (FORTH)

Date of birth: 30/09/1993, Heraklion Crete | Nationality: Greek

EDUCATION

2023-PRESENT

PhD in CANCER NEUROSCIENCE, FACULTY OF MEDICINE, UNIVERSITY OF CRETE
INSTITUTE OF COMPUTER SCIENCE, FORTH
INSTITUTE OF ELECTRONIC STRUCTURE AND LASER, FORTH

2016-2020

MSc in "BRAIN & MIND" SCIENCES, SCHOOL OF MEDICINE, UNIVERSITY OF CRETE
Interdisciplinary Graduate Programme in the Brain and Mind Sciences, organized by the School of Medicine and the departments of Computer Science, Physics, and Philosophy and Social Studies of the University of Crete as well as from the departments of Nursing and History and Philosophy of Sciences of the National and Kapodistrian University of Athens

2011-2016

BSc in BIOLOGY, DEPARTMENT OF BIOLOGY, UNIVERSITY OF CRETE
Grade: 7.24/10, "Very Good"

2008-2011

HIGH SCHOOL DIPLOMA, "DOMINIKOS THEOTOKOPOULOS", 1ST HIGH SCHOOL OF MALEVIZI
Municipality of Malevizi, Heraklion Crete
Grade: 19/20, "Excellent"

RESEARCH EXPERIENCE

12/2023 –

PhD THESIS

"THE ROLE OF PML IN NEUROGLIOMA PHYSIOLOGY"

University of Crete, Faculty of Medicine
Foundation for Research and Technology-Hellas (FORTH)

Thesis Committee:

1. Prof. Emmanouil Froudarakis,, Systems Neuroscience Lab, IMBB, FORTH (frouman@imbb.forth.gr)
2. Dr. V. Sakkalis, Research Director, Computational Bio-Medicine Lab, ICS, FORTH (sakkalis@ics.forth.gr)
3. Dr. G. Zacharakis, Principal Researcher, Laboratory of Biophotonics and Molecular Imaging (LBMI), IESL, FORTH (zahari@iesl.forth.gr)

9/2020-11/2023

RESEARCH ASSOCIATE

Computational Bio-Medicine Lab (CBML), Institute of Computer Science (ICS), FORTH

Laboratory for Bio-photonics and Molecular Imaging (LBMI), Institute of Electronic Structure and Laser (IESL), FORTH
Summary: Development of 3D tumor spheroids and brain organoids for chemotherapeutic agents testing. Computational modeling of the spatiotemporal evolution and physiological characteristics of Glioblastoma (GB) cells based on in vitro biological models. Development of ex vivo retinal cultures for evaluation of ocular imaging biomarkers for neurodegenerative diseases using hybrid microscopy system technologies.

05/2018 – 03/2020

MASTER THESIS

“IMAGE GUIDED BRAIN CANCER MODELING – THE ROLE OF PROMYELOCYTIC LEUKEMIA PROTEIN IN GLIOBLASTOMA PHYSIOLOGY”

Computational Bio-Medicine Lab (CBML), Institute of Computer Science (ICS), Foundation for Research and Technology-Hellas (FORTH)

Evaluation Committee:

1. Supervisor: V. Sakkalis, Principal Researcher, Computational Bio-Medicine Lab, ICS, FORTH (sakkalis@ics.forth.gr)
2. Evaluator: K. Sidiropoulou, Assistant Professor in Neurophysiology, Dept. of Biology, University of Crete (sidirop@uoc.gr)
3. Evaluator: T. Maris, Assistant Professor of Medical Physics, Faculty of Medicine, University of Crete (tmaris@med.uoc.gr)

Summary: Computational modeling of the physiological characteristics of Glioblastoma (GB) cells based on in vitro biological models. The physiological properties of genetically modified GB cell lines are studied in vitro, in 2D and 3D cultures, and imaged with fluorescence pulse sources, aiming in new imaging biomarkers and therapeutic targets identification. Furthermore, the project involves the development of an ex vivo mouse brain slice protocol in order to study the invasive properties of the GB cells in their microenvironment of origin with the use of photoacoustic imaging.

10/2017 – 02/2018

LAB ROTATION

“ANALYSIS OF MACAQUE PREFRONTAL CORTEX ELECTROPHYSIOLOGICAL RECORDINGS”

Laboratory of Visual Cognition, Faculty of Medicine, University of Crete

Supervisor:

G.Gregoriou, Associate Professor, Medical School, University of Crete (gregoriou@uoc.gr)

Summary: Off-line analysis in MATLAB of macaque prefrontal cortex (PFC) electrophysiological activity regarding the PFC relationship to attention. Basic training in macaque handling and behavioral training.

05/2017 – 09/2017

LAB ROTATION

“IN VITRO/IN SILICO STUDY OF THE ROLE OF PHYSIOLOGICAL FACTORS AFFECTING TUMOR GROWTH IN PRIMARY GLIOBLASTOMA CELL LINES”

Computational Bio-Medicine Lab (CBML), Institute of Computer Science (ICS), Foundation for Research and Technology-Hellas (FORTH)

Supervisor:

V. Sakkalis, Principal Researcher, Computational Bio-Medicine Lab, ICS, FORTH (sakkalis@ics.forth.gr)

Summary: In Vitro/In Silico study of physiological characteristics of Glioblastoma (GB). Parametrization and validation of a hybrid discrete-continuous patient-specific computational model based on theoretical and experimental results.

09/2015 – 07/2016

BACHELOR THESIS

“DIFFERENTIAL REGULATION OF COGNITIVE FUNCTIONS IN ADOLESCENT AND ADULT MICE”

Neurophysiology and Behavior Lab, Dept. of Biology, University of Crete

Supervisor:

K. Sidiropoulou, Assistant Professor in Neurophysiology, Dept. of Biology, University of Crete (sidirop@uoc.gr)

Summary: Development of the Attentional Set-Shifting Task behavioral protocol in order to study the cognitive flexibility in adolescent and adult mice. Training in Standard Operating Procedures such as subcutaneous and intraperitoneal injections, transcatheter perfusion and brain tissue collection.

07/2015 – 09/2015

INTERNSHIP

Molecular and Cellular Cognition Lab, German Center for Neurodegenerative Diseases (DZNE), Research Center Caesar, Bonn, Germany

Supervisor:

D. Ehninger, Principal Investigator, Molecular and Cellular Cognition Lab, German Center for Neurodegenerative Diseases (DZNE), Research Center Caesar, Bonn, Germany (dan.ehninger@dzne.de)

Summary: Brief training on basic Molecular Biology techniques (Western Blot, PCR etc.) and biological image analysis using Cell Profiler.

03/2015 – 06/2015

LAB ROTATION

Neurophysiology and Behavior Lab, Dept. of Biology, University of Crete

Supervisor:

K. Sidiropoulou, Assistant Professor in Neurophysiology, Dept. of Biology, University of Crete (sidirop@uoc.gr)

Summary: Video Analysis of behavioral experiments using JWWatcher. Basic training in electrophysiological recordings, animal handling, animal house facilities and laboratory safety.

2012

LAB ROTATION

Natural History Museum of Crete

Supervisor:

P. Lymperakis, Curator of Vertebrates at the Natural History Museum of Crete (lyberis@nhmc.uoc.gr)

Summary: Species classification of birds and small mammals.

WORKSHOPS AND SUMMERSCHOOLS

- 27/02/2023-03/03/2023: Retinal Explants Workshop in the framework of "Dynamic" FET open Horizon 2020 grant, Tuebingen, Germany
- 03-05/07/2023: 1st Summer School in the framework of "Dynamic" FET open Horizon 2020 grant in Chania, Greece
- 04/2021 – 06/2021: 7th International Course for the Care and Use of Laboratory Animals: Mice, Rats, Zebrafish (FELASA ID: 051/15)
- 07/2019: 4th ESMI Imaging Summer School TOPIM-TECH, Chania, Greece

PUBLICATIONS

1. Mylonakis M., Marakis E., Zacharopoulos A., **Tampakaki M.**, Papamatheakis J., Papazoglou D., Zacharakis G., "A novel adaptive optics illumination device for in vivo imaging of fluorescently labeled specimens", Proc. SPIE 12630, Advances in Microscopic Imaging IV, 1263008, European Conferences on Biomedical Optics (ECBO), 2023, <https://doi.org/10.1117/12.2670906>
2. **Tampakaki M.**, Oraiopoulou M.E., Tzamali E., Tzedakis G., Makatounakis T., Zacharakis G., Papamatheakis J., Sakkalis V., "PML Differentially Regulates Growth and Invasion in Brain Cancer", International Journal of Molecular Sciences. 2021; 22(12):6289. <https://doi.org/10.3390/ijms22126289>
3. Oraiopoulou M.E., **Tampakaki M.**, Tzamali E., Tamiolakis T., Makatounakis V., Vakis F. A., Zacharakis G., Sakkalis V., Papamatheakis J., "A 3D tumor spheroid model for the T98G Glioblastoma cell line phenotypic characterization", Tissue and Cell, Elsevier, 2019

PARTICIPATION IN CONFERENCES

Oral Presentations

1. **Tampakaki M.**, Oraiopoulou M. E., Tzamali E., Tzedakis G., Psycharakis S., Zacharakis G., Sakkalis V., Papamatheakis J., "Studying the role of PML in GB using in silico cancer predictive models and advanced molecular imaging techniques", Clinical and Translational Oncology Conference 2020, Virtual Edition
2. **Tampakaki M.**, "PML and Neoplasia - The Role of PML in Glioblastoma Evolution", Clinical and Translational Oncology Conference 2019, Heraklion, Greece
3. **Tampakaki M.**, Oraiopoulou M.E., Psycharakis S., Tzamali E., Zacharakis G., Sakkalis V., Vakis A., Papamatheakis J., "The Physiological Effects of the Promyelocytic Leukemia Protein on the U87MG Glioblastoma Cell Line", 33rd Annual Congress Hellenic Neurosurgical Society & 4th Congress SeENS 2019, Southeast Europe Neurosurgical Society, Thessaloniki, Greece

Abstracts/Posters

1. **Tampakaki M.**, Tzamali E., Makrygiannaki E., Tzedakis G., Mylonakis M., Marakis E., Sidiropoulou K., Sakkalis V., Papamatheakis J., Zacharakis G., "A Tripartite Approach through In Vitro, Ex Vivo, and In Silico Modelling for Deeper Understanding of Glioblastoma", 19th European Molecular Imaging Meeting (EMIM), 2024, Porto, Portugal
2. **Tampakaki M.**, Tzamali E., Tzedakis G., Zacharakis G., Sakkalis V., Papamatheakis J., "PML-driven glioblastoma pathophysiology: Insights from experimental models and computational simulations", 1st Heidelberg Conference on Cancer Neuroscience, 2023, Heidelberg, Germany
3. **Tampakaki M.**, Tzamali E., Tzedakis G., Makrygiannaki E., Mylonakis M., Marakis E., Zacharakis G., Sakkalis V., Papamatheakis J., "Brain cancer evolution under the prism of intra tumoral heterogeneity", 18th European Molecular Imaging Meeting (EMIM), 2023, Salzburg, Austria
4. Makrygiannaki E., **Tampakaki M.**, Tzamali E., Zacharakis G., Sidiropoulou K., Sakkalis V., Papamatheakis J., "Modeling PML-mediated Glioblastoma Growth Dynamics: Insights from Spheroid-Based Studies and Brain Tissue Slice Implantation", 2nd International Conference on Nanotechnologies and Bionanoscience "NanoBio 2023", 2023, Heraklion Crete, Greece
5. **Tampakaki M.**, Tserivelakis G.J., Katsoli A-A., Tzamali E., Sakkalis V., Papamatheakis J., Sidiropoulou K., Zacharakis G., "Ex vivo hybrid imaging of human brain cancer", European Molecular Imaging Meeting (EMIM), 15-18 March, 2022, Thessaloniki, Greece

6. **Tampakaki M.**, Oraiopoulou M.E., Tzamali E., Tzedakis G., Psycharakis S., Zacharakis G., Sakkalis V., Papamatheakis J., *“In Vitro-In Silico Integration of PML-mediated Glioblastoma Evolution”*, 15th European Molecular Imaging Meeting (EMIM), 2020, Virtual Edition
7. **Tampakaki M.**, Oraiopoulou M.E., Psycharakis S., Tzamali E., Zacharakis G., Sakkalis V., Papamatheakis J., *“The role of Promyelocytic Leukemia protein pathways in brain cancer”*, 12th FORTH Retreat, ICE-HT, 2019, Patras, Greece
8. **Tampakaki M.**, Oraiopoulou M.E., Tzamali E., Zacharakis G., Sakkalis V., Papamatheakis J., *“The effect of pathological developmental pathways in human brain cancer physiology”*, 28th meeting of the Hellenic Society for Neuroscience”, 2019, Heraklion, Greece
9. **Tampakaki M.**, Oraiopoulou M.E., Psycharakis S., Tzamali E., Sakkalis V., Zacharakis G., Papamatheakis J., *“The role of PML in Glioblastoma physiology”*, 4th ESMI Imaging Summer School TOPIM-TECH, 2019, Chania, Greece
10. **Tampakaki M.**, Oraiopoulou M.E., Psycharakis S., Tzamali E., Sakkalis V., Zacharakis G., Papamatheakis J., *“Light Sheet Fluorescence Microscopy imaging of Promyelocytic Leukemia protein physiologic effects on the U87MG Glioblastoma cell line”*, 14th European Molecular Imaging Meeting (EMIM), 2019, Glasgow, Scotland, UK

SKILLS AND ACCREDITATIONS

FELASA

ID: 051/15

Functions: A, B, C, D

Mice, Rats, Zebrafish

Languages

Greek: Native

English: Certificate of Proficiency (ECPE-C2),

University of Michigan and Edexcel, Level 5

German: Goethe-Zertifikat, B2

Other Skills and Interests

Driving License Category B

Classical and contemporary dance, Theater