

Postdoctoral Fellowship in Experimental/Computational Neuroscience

- **Poirazi Lab** (www.dendrites.gr), Institute of Molecular Biology and Biotechnology (IMBB), Foundation for Research and Technology Hellas (FORTH), Heraklion, Greece
- **Position type:** Full Time, Fixed Term, available from 1st July 2022 for 3 years
- **Salary:** Commensurate with experience: 26k€ - 36k€ per annum (including benefits)
- **Closing date:** applications will be screened continuously until the position is filled
- **Project:** “The role of memory engrams in the cortex” (IDEAS grant, funded by NHMRC, Australia)

We are looking for a talented and enthusiastic scientist to join the Laboratory of Dr. Panayiota Poirazi at IMBB-FORTH as a postdoctoral fellow.

About the project

The successful applicant will work on a multidisciplinary collaborative project aiming to determine the importance of cortical engram cells in memory formation and storage and probe the role of cortical memory engrams in the generation and retrieval of a sensory-based memory. The project will combine computational modeling, electrophysiology, calcium imaging techniques, and molecular and behavioral experiments. First, the biophysical properties of engrams will be identified in a cortical area of interest, and their functional role will be unraveled in vivo. Then, computational modeling will be used to determine the role of engram cells during memory recall. This project is a collaboration between the Florey Institute of Neuroscience and Mental Health in Melbourne, Australia (Prof. L. Palmer), and the University of Dublin, Ireland (Prof. T. Ryan).

The successful applicant will work on behavioral and 2-photon imaging experiments in behaving mice and help extend a computational circuit model ([Kastellakis et al., *Cell Reports*, 2016](#)) to dissect the role of subcellular mechanisms in cortical engram formation. The model will simulate the recorded cortical engrams in specific areas (auditory / prefrontal cortex).

Poirazi Lab

The **Poirazi Lab** investigates how dendrites and their integrative properties contribute to learning and memory-related functions, using computational and experimental techniques. Our models explain findings and predict new roles for dendrites in functions such as spatial navigation/learning, working memory, associative memory, visual processing, etc. We also perform behavioral experiments in mice and use 2-photon imaging of prefrontal cortical neurons to investigate the cellular correlates of flexible behavior. The laboratory offers a thriving and lively research environment and is well-funded by several competitive grants.

Position qualifications

The ideal candidate should have a Ph.D. in neuroscience or a related field. We welcome applications from candidates with diverse educational backgrounds, including biology, computational biology,

physics, applied mathematics and engineering, that have demonstrated research experience in neuroscience. Applicants must have a proven publication record in neuroscience and be highly motivated and creative individuals who want to work in a dynamic, multidisciplinary research environment. They should be willing to interact with both experimental and theoretical neuroscientists. Previous experience should include in vivo recordings in rodents and/or solid programming background (Python, NEURON, Linux), ideally including neuronal modelling. Experience with experimental procedures/data collection and analysis is desirable. The ability to work in a team is essential.

More information

IMBB (www.imbb.forth.gr) is part of FORTH (www.forth.gr), a European center of Excellence. IMBB is one of Greece's most prominent life science research institutions, with an outstanding record of scientific achievements, state-of-the-art infrastructure, and a broad range of research, innovation, and high quality, inspirational, educational activities. In addition, IMBB is strongly committed to inclusivity, promoting equality, and celebrating diversity among its staff and students.

The wide range of research activities in the Institute aims at understanding the fundamental biological processes operating in living organisms. IMBB also hosts interdisciplinary research programs at the interface of biology with informatics, chemistry, physics and medicine and is heavily involved in providing post-graduate students with high-level education through joint graduate programs with the University of Crete. An additional standing mandate of IMBB is the exploitation and translation of acquired knowledge to tangible societal benefits, including the development of new technologies, innovative products and services.

IMBB is located close to Heraklion, the largest city and the administrative capital of the island of Crete, located south of the Greek mainland. It is the fifth-largest city in Greece with a population of >140,000 and is famous for its lively lifestyle and the outstanding outdoors.

Application and Selection process

Interested candidates should send via email:

- (1) a CV
- (2) a motivation letter
- (3) a list of two-three referees (names and contact info)

to Dr. Poirazi (poirazi@imbb.forth.gr), adding "*Cortical Engrams: Postdoctoral position*" in the subject.

Applications will be **screened continuously until the position is filled**. Informal inquiries are welcome.