



P.N. 0448-P/133274
February 19, 2024

One (1) Postdoctoral Researcher Position

[PAR-0590]

The research group of Dr. Panayiota Poirazi under the IDEAS grant, funded by NHMRC, Australia entitled “The role of memory engrams in the cortex” invites applications for one Postdoctoral researcher who will help 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. 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).

About the 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.

About the project and position description:

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 use computational methods (e.g., similar to [Kastellakis et al., Cell Reports, 2016](#) or other bio-inspired machine learning approaches) to dissect the role of subcellular mechanisms in cortical engram formation.

Required qualifications:

- Ph.D. in computational neuroscience or a related field (e.g., machine learning, engineering, computer science, physics)
- Publication record in neuroscience, ideally including collaborative experimental-theoretical publications
- A solid programming background, ideally including machine learning skills (e.g., Python, NEURON, Linux, TensorFlow, PyTorch)
- Excellent oral and written skills in English language

Desired qualifications:

- Highly motivated and creative individuals willing to work in a dynamic, multidisciplinary environment
- Ability to collaborate with experimental and theoretical neuroscientists

	Evaluation criteria	Maximum score
1.	Ph.D. in computational neuroscience or a related field	YES / NO
2.	Publications in Neuroscience, ideally including collaborative experimental-theoretical publications (1-2 publications = 10 points, 3-5 publications including collaborative ones = 20 points, > 5 publications including collaborative ones, 30 points)	30
3.	Programming skills (Python, NEURON, Linux, TensorFlow, PyTorch) (Python, Neuron, Linux = 10 points, Additional ML languages like TensorFlow/Pytorch 25 points)	25
4.	Excellent oral and written skills in English language (B1: 7 points, B2: 8 points, C1: 9 points, C2: 10 points)	10
5.	Interview where the following skills will be assessed: a) Experience in developing computational models of neuronal circuits (5 points) b) Experience in developing machine learning models and applying them on neuroscience problems (10 points) c) Organization and communication skills (10 points)	25
6.	Reference letters (Excellent: 10 points, very good: 5 points)	10
Total score		100

Contract Duration: Full Time, Fixed Term. for 1 year with the possibility of extension for 2-3 more years

Total budget: Commensurate with experience: 26k€ - 36k€ per annum (including benefits) (incl. tax and social security)

Envisaged starting date: from 1st June 2024

Deadline for the submission of applications: April 15th, 2024

The application should consist of:

1. Application Form (see below)
2. CV
3. Brief statement of purpose
4. The names and contact details of two referees
5. Scanned copies of academic titles
6. Scanned copies proving all the qualifications

Submission of applications: par0590@imbb.forth.gr

Evaluation procedure

Applications will be evaluated by a three-member evaluation committee. In case of interview procedure, applicants will be invited to participate in person or teleconference.

In case of titles and qualifications awarded by foreign Higher Education Institutions, the provisions of the Law 55/2023 (article 36) and 4957/2022 (article 304) are implemented.

The results of the selection will be announced on the website of IMBB-FORTH. Applicants have the right to appeal the selection decision, by addressing their written objection to the IMBB secretariat within five days since the

results announcement on the web. Objections are submitted in one of the following ways: in person, by an authorized person, by post, by courier. They also have the right to access (a) the files of the applicants as well as (b) the table of applicants' scores (ranking of applicants results). All the above information related to the selection procedure will be available at the secretariat of IMBB-FORTH in line with the Hellenic Data Protection Authority. Access to personal data of co- applicants shall be limited to personal data (and relevant data) and supporting documents which have been the basis of the evaluation of the applicants for the specific post(s). Prior to the announcement of the personal data and/or documents of the co- applicants to the applicant, FORTH will inform the data subjects in an appropriate way.

The selected applicants will be notified personally regarding the success of his/her application and will be requested to submit certified copies of his/her degrees. If the submitted documents do not agree with the original application, the applicant will be dismissed.

GDPR Disclaimer

FORTH is compliant with all legal procedures for the processing of personal data as defined by the Regulation EU/2016/679 on the protection of natural persons with regard to the processing of personal data. FORTH processes the personal data and relevant supporting documents that applicants have submitted. Processing of that data is carried out exclusively for the needs and purposes of this specific call. Such data shall not be transmitted to or communicated to any third party unless required by law.

FORTH retains the above data up to the announcement of the final results of the call, unless further process and reservation is required by law or for purposes of exercise, enforcement, prosecution of certain one's legitimate legal rights' as defined in the Regulation EU/2016/679 and/or in national law. Under the Regulation EU/2016/679, applicants have the rights to be informed about their personal data, access to, rectification and erasure, restrictions of process and objection to as provided by applicable regulation and national laws. Applicants have the right to file a complaint to the national Data Protection Authority. For any further information regarding exercise of personal data protection rights, applicants may contact the Data Protection Officer at FORTH at dpo@admin.forth.gr.

Applicants have the right to withdraw your application and consent for the processing of personal data at any time. In this case, FORTH shall destroy such documents and/or supporting documents submitted and shall delete the related personal data.

APPLICATION FORM

Name: _____
Surname: _____
Date of birth (dd/mm/yy): _____
Address: _____
Telephone number: _____
Email address: _____

TO
FOUNDATION OF RESEARCH AND TECHNOLOGY (FORTH)
INSTITUTE OF MOLECULAR BIOLOGY AND BIOTECHNOLOGY

Hereby I submit my application for the position:

In the framework of the project: _____

Position code [Ref #] _____

Submitted with this application:

1. _____
2. _____
3. _____
4. _____
5. _____

I certify that:

- A) I accept the terms and conditions of the job announcement
- B) I possess all the necessary certificates and documents and I can present them in their original form to the committee without any delay if I am asked to do so
- C) I am able to complete the project within the foreseen time -frame
- D) all the information given in the framework of this application are accurate and true.

Date: _____

Applicant name

(signature)