



**HORIZON EUROPE Research and Innovation Framework Programme  
MARIE SKŁODOWSKA-CURIE ACTIONS**

**EXPRESSION OF INTEREST  
Postdoctoral Fellowships (PF)  
HORIZON-MSCA-2023-PF-01**

<b>Organisation Name/ Department</b> <i>(if applicable)</i>	Organisation name: Malta College of Arts, Science and Technology Centre: Applied Research and Innovation Centre (ARIC)	
<b>Website of the organisation</b> <i>(in English)</i>	<a href="https://mcast.edu.mt/applied-research/">https://mcast.edu.mt/applied-research/</a>	
<b>Organisation Short Name</b>	MCAST	
<b>Organisation Type</b>	<input checked="" type="checkbox"/> Academic  <input type="checkbox"/> Non-academic	<input checked="" type="checkbox"/> Higher Education establishment <input type="checkbox"/> Research organisation <input type="checkbox"/> International European Research Organisation <input type="checkbox"/> SME <input type="checkbox"/> Other (please specify)
<b>Research Fields</b>	<input type="checkbox"/> Chemistry (CHE) <input type="checkbox"/> Social Sciences and Humanities (SOC) <input type="checkbox"/> Economic Sciences (ECO) <input type="checkbox"/> Information Science and Engineering (ENG) <input type="checkbox"/> Environment and Geosciences (ENV) <input checked="" type="checkbox"/> Life Sciences (LIF) <input type="checkbox"/> Mathematics (MAT) <input type="checkbox"/> Physics (PHY)	
<b>Sub-Fields/ Keywords</b> <i>(up to 5)</i>	Neuroscience Neurophysiology Drug of Abuse Chronobiology Animal Models Electrophysiology Animal Models Behavioural testing	
<b>Marie Skłodowska-Curie Action(s) of interest</b>	<input checked="" type="checkbox"/> European Postdoctoral Fellowships <input checked="" type="checkbox"/> Global Postdoctoral Fellowships	
<b>Short Description of the Organisation/ Department</b> - strengths and scientific achievements (publications, patents, etc.), important infrastructure <i>(up to 2000 characters with spaces)</i>	The Applied Research and Innovation Centre (ARIC), which is situated in MCAST Resource Centre, is part of the College's strategic plan, giving rise to a dynamic learning space, where knowledge and innovation thrive.	



*Research equipment at ARIC:*

- Visualisation Wall (1 year old) - Multiple high-resolution displays are arranged into a single, curved, large display surface. It enables viewers to see large amounts of data at once and allows for interactive exploration and analysis of the data, training and simulation.
- Optical motion-capture cameras (1 month old)
- A versatile system with a number of applications in the life sciences, engineering, virtual reality, virtual production, and animation, able to capture motion with high accuracy and high positional and angular precision.
- Virtual Reality Headsets (1 year old)
- Robots (6 months old) - Teleoperation making it useful for tasks that require remote control, such as telepresence, remote inspection, or teleoperation in hazardous environments.
- Semi-humanoid robot (In final stages of procurement) - it combines advanced technology with human-like features to provide an engaging, personalized, and interactive educational experience for students.
- 360-degree camera (3.5 years)

*Licences available at ARIC:*

- MAXQDA® -- software package for qualitative data analysis and mixed methods research.
- IBM® SPSS® -- statistical software platform.

**Other significant research infrastructure available within MCAST's institutes**

*Institute of Information and Communication Technology:*

- VR Goggles
- Digital Video/Photo camera
- Thermal Screening Camera
- Green Screen
- Fibre Optic splicing machines

*Publications:*

- **Pierucci M**, Delicata F, Colangeli R, Marino Gammazza A, Pitruzzella A, Casarrubea M, De Deurwaerdère P, Di Giovanni G. Nicotine modulation of the lateral habenula/ventral tegmental area circuit dynamics: An electrophysiological study in rats. *Neuropharmacology* 202: 108859, Epub (2021).
- De Deurwaerdère P, Ramos M, Bharatiya R, Puginier E, Chagraoui A, Manem J, Cuboni E, **Pierucci M**, Deidda G, Casarrubea M, Di



Giovanni G. Lorcaserin bidirectionally regulates dopaminergic function site-dependently and disrupts dopamine brain area correlations in rats. *Neuropharmacology*. 17:166 (2019).

- Casarrubea M, Davies C, Faulisi F, **Pierucci M**, Colangeli R, Partridge L, Chambers S, Cassar D, Valentino M, Muscat R, Benigno A, Crescimanno G, Di Giovanni G. Acute nicotine induces anxiety and disrupts temporal pattern organization of rat exploratory behavior in hole-board: a potential role for the lateral habenula. *Frontiers in Cellular Neuroscience* 9:197 (2015).
- Casarrubea M, Davies C, Faulisi F, **Pierucci M**, Colangeli R, Partridge L, Chambers S, Cassar D, Valentino M, Muscat R, Benigno A, Crescimanno G, Di Giovanni G. Acute nicotine induces anxiety and disrupts temporal pattern organization of rat exploratory behavior in hole-board: a potential role for the lateral habenula. *Frontiers in Cellular Neuroscience* 9:197 (2015).
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- Casarrubea M, Davies C, Faulisi F, **Pierucci M**, Colangeli R, Partridge L, Chambers S, Cassar D, Valentino M, Muscat R, Benigno A, Crescimanno G, Di Giovanni G. Acute nicotine induces anxiety and disrupts temporal pattern organization of rat exploratory behavior in hole-board: a potential



	role for the lateral habenula. <i>Frontiers in Cellular Neuroscience</i> 9:197 (2015).
<b>Previous Projects/ Research Experience</b> (international/ EU/ big national or regional projects especially in the areas in which you would like to host fellows) ( <i>up to 5</i> )	<p>My research during the past 15 years has focused on how serotonin modulates the activity of reward-related structures such as the dopaminergic system of the midbrain, with a particular focus on the serotonin 2C receptor subtype. Recently, I've focused my attention on an epithalamic structure, the Lateral Habenula, which is considered as part of the reward network and plays a crucial role in encoding negative/aversive stimuli. This area has been demonstrated to be involved in the action of drugs of abuse, as well as in the pathogenesis of depressive symptoms. The experimental results I obtained suggested a pivotal role for the Lateral Habenula in the mechanism underlying the addiction to nicotine and that serotonin might modulate nicotine responses by acting on this structure. As part of my role, I have always been managing my own research projects in an independent way.</p> <p>Over the years I spent working as a researcher in the academia, I have been involved in co-supervising both undergraduate and postgraduate students carrying out research projects for their dissertations or Master degrees. In particular, I had the opportunity to mentor and supervise six BSc undergraduate students from Cardiff University carrying out their Professional Training Year in Prof. Di Giovanni's laboratory. Moreover, I was involved in the co-supervision of three Master students. Moreover, I was always managing my own research projects in an independent way.</p>
<b>Thematic areas and list of supervisors who are looking forward to preparing a project proposal with postdoctoral researchers</b>	<p><b>Dr Massimo Pierucci</b> (link to CV, contact information):</p> <ol style="list-style-type: none"> <li>1. Neuroscience</li> <li>2. Neurophysiology</li> <li>3. Drug of Abuse</li> <li>4. Chronobiology</li> <li>5. Animal Models Electrophysiology</li> <li>6. Animal Models Behavioural testing</li> </ol>
<b>Contact Person/ Position in the Organisation/ Phone/ E-mail</b>	<p><i>Dr Judita Tomaskinova</i>  <i>Deputy Director Research &amp; Innovation</i>  <i>Phone: +356 2398 7391</i>  <i>Email: <a href="mailto:Judita.Tomaskinova@mcast.edu.mt">Judita.Tomaskinova@mcast.edu.mt</a></i></p>
<b>Deadline for Expressions of Interest from postdoctoral researchers</b>	20 June 2023
<b>Necessary documents</b>	<ul style="list-style-type: none"> <li>✓ Expression of Interest</li> <li>✓ CV</li> <li>✓ Brief description of the project idea</li> </ul>



<p><b>What we offer</b></p>	<ul style="list-style-type: none"> <li>✓ Full-time contract to work on a research project and enjoy advanced training,</li> <li>✓ Competitive salary –€4,475.48 gross amount, including compulsory deductions under national law, such as employer and employee social security contributions and direct taxes;</li> <li>✓ Mobility (€ 600) and Family allowances (if applicable - € 660);</li> <li>✓ Budget for Research, Training and Networking costs (€ 1 000);</li> <li>✓ Special needs allowance (if applicable).</li> </ul>
<p><b>Requirements</b></p>	<ul style="list-style-type: none"> <li>✓ <i>Experience:</i> <ul style="list-style-type: none"> <li>- Applicants should be in a possession of a doctoral degree at the call deadline.</li> <li>- At the call deadline, supported researchers must have a maximum of 8 years full-time equivalent experience in research, measured from the date of award of the doctoral degree. Years of experience outside research and career breaks (e.g. due to parental leave) will not count towards the amount of research experience. For nationals or long-term residents of EU Member States or Horizon Europe Associated Countries who wish to reintegrate to pursue their research career in EU Member States or Horizon Europe Associated Countries, years of experience in research in third countries will not be considered in the above maximum.</li> </ul> </li> <li>✓ <i>Mobility rule:</i> <ul style="list-style-type: none"> <li>- European Postdoctoral Fellowships - applicants must not have resided or carried out their main activity (work, studies, etc.) in the country (Malta) of the beneficiary for more than 12 months in the 36 months immediately before the call deadline.</li> </ul> </li> </ul>
<p><b><u>IMPORTANT – apply with us and increase your chances for success<sup>1</sup>:</u></b></p>	<ul style="list-style-type: none"> <li>✓ Not funded applications for European Postdoctoral Fellowships with a host organisation from Malta have the chance to be funded under the <b>ERA Fellowships Call</b> (‘Widening Participation and Strengthening the European Research Area’ part of the Framework Programme). They will be automatically transferred to the ERA Fellowships Call and will be ranked in one single list according to the scores and evaluation of the Postdoctoral Fellowships call with an additional budget.</li> </ul>

<sup>1</sup> The first bullet is only for Widening countries, the second bullet is only for countries and/ or organisations that have a Seal of Excellence programme adopted. Delete accordingly.