

## Training Opportunity for Irish Trainees

Reference	Title	Duty Station
IE-2019-HRE-OM	Spaceship EAC Project / Future Missions at EAC	EAC
<p><b><u>Overview of the unit's mission:</u></b>            Within the Directorate of Human Spaceflight and Robotic Exploration, the European Astronaut Center (EAC) at Cologne, Germany, hosts the European astronaut corps and is responsible for astronaut training and medical operations. In order to prepare for future human exploration missions, EAC created the "Spaceship EAC" project, the goal of which is to develop technologies and concepts relevant for exploration on the Moon. As such, EAC is increasingly being utilised as a test bed for exploration-related technologies and operations. Concepts demonstrated within Spaceship EAC and the network of institutions involved can lead to such ideas being injected into larger funding ecosystems for Technology Readiness Level (TRL) development.</p> <p>Projects are often implemented in cooperation with institutes of the German Aerospace Center (DLR), which has its headquarters and major facilities surrounding the EAC in Cologne, and with other external European partners in the Spaceship EAC network.</p>		
<p><b><u>Overview of the field of activity proposed:</u></b>            The focus of the proposed National Trainee activity is to support EAC activities within the frame of the "Spaceship EAC" initiative in the area of a medical capability for future human exploration missions beyond Low Earth Orbit (LEO). The tighter constraints of human missions beyond LEO, including delayed evacuation and communications, small vehicles/habitats, and difficulties in the storage and re-supply of resources including food and water, will require a paradigm shift in how medical operations are executed. This paradigm shift will require crew to become more autonomous, which can only be achieved through the provision of new technologies and new processes/training. The National Trainee activities will include:</p> <ul style="list-style-type: none"> <li>• Identification of future exploration medical capability gaps;</li> <li>• Supporting the development of a strategy to close identified gaps;</li> <li>• Identification of European technologies able to close identified gaps;</li> <li>• Facilitating the integration of new technologies into a novel exploration medical system;</li> <li>• Development of a strategy to validate the specific components of the medical system.</li> </ul> <p>The activities under the "Spaceship EAC" project are executed by a team of European students and researchers under the supervision of the Future Missions section at EAC, and offers a highly multidisciplinary and stimulating environment. As part of this team, the trainee will be exposed first hand to the reality of human spaceflight operations, technology, and medical and crew support functions.</p>		
<p><b><u>Required education:</u></b>            Applicants should have just completed, or be in their final year of a University course at Masters Level (or equivalent) in a technical or scientific discipline with a focus on engineering, or have equivalent engineering experience. Knowledge/experience of the following is desirable:</p> <ul style="list-style-type: none"> <li>• Medical hardware development;</li> <li>• Bioengineering;</li> <li>• Product development and validation;</li> <li>• Technology integration;</li> <li>• Space integration;</li> <li>• Signal processing and analysis (<i>e.g.</i> Matlab, R-Script, Python);</li> <li>• Project management.</li> </ul> <p>Applicants should have good interpersonal and communication skills and should be able to work in a multi-cultural environment, both independently and as part of a team.</p>		



Applicants must be fluent in English, the working language of EAC.