

PhD Position – Decoding spatiotemporal cues in metastasis using multi-omics and imaging approaches

Host: <https://www.imaigene-lab.com/> (supervised by Dr Alieva & Dr Olmeda), Institute for Biomedical research IIBM-CSIC/UAM), **Madrid, Spain**

Program: Marie Skłodowska-Curie Doctoral Network (SpaXio)

Duration: 4 years · **Funding:** EU MSCA Doctoral Network · **Apply here:**

<https://www.spaxio.eu/recruitment-and-projects/application>

About SpaXio

The **EU-funded MSCA Doctoral Network “Spatial Crosstalk in Immune-Oncology” (SpaXio)** is now recruiting **14 PhD students** to decipher how the tumor microenvironment promotes metastasis in colon and breast cancer.

SpaXio brings together leading cancer researchers across **Austria, Germany, France, Switzerland, and Spain**, combining **spatial multi-omics, organoid models, advanced imaging**, and **AI-driven data integration**. Each doctoral project offers an interdisciplinary training environment bridging **cancer biology, systems medicine, and artificial intelligence**.

Project 9 – Decoding Spatiotemporal Cues in Metastasis Using Multi-Omics and Imaging Approaches

Doctoral Candidate 9 will develop **computational methods** to analyze **dynamic live-cell imaging data** from **tumor–immune–stroma interactions** in **primary and metastatic cancer models**.

Using **machine learning** and **computer vision**, the candidate will:

- Quantify cellular behaviors (motility, interactions, killing events).
- Integrate imaging features with **spatial metabolomics** data.
- Link morphodynamic and metabolic profiles to **clinical datasets**.

The goal is to build **scalable analytical pipelines** for interpreting complex imaging datasets and uncover principles of metastasis-promoting microenvironments.

This project will be carried out in **Madrid (Spain)**, supervised by **Alieva and Olmeda**, within the **ImAigene Lab**, at the **Instituto de Investigaciones Biomédicas Sols-Morreale (IIBM-CSIC/UAM)**. <https://www.iib.uam.es/en/>

Candidate Profile

- Master's degree in **bioinformatics, biomedical engineering, computer science, artificial intelligence**, or a related discipline.
 - Strong programming skills (**Python**) and experience in **AI/ML** or **image analysis**.
 - Interest in **computational biology, cancer research**, and **interdisciplinary teamwork**.
 - Excellent communication in English.
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Eligibility (Marie Curie Mobility Rule)

Applicants must **not have lived or worked in Spain for more than 12 months** during the **3 years** immediately before recruitment.

The program is open to **candidates of any nationality** and particularly encourages **international applications**.

Funding and Benefits

- **4-year full-time PhD contract** under the **EU MSCA Doctoral Network scheme** (competitive salary + benefits).
 - Access to state-of-the-art imaging facilities, computational resources, and network-wide training events.
 - Secondments and collaborations with leading European cancer research centers.
 - Specialized training across Europe
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How to Apply

Submit your application via the SpaXio portal:

 <https://www.spaxio.eu/recruitment-and-projects/application>