

**IMIBIC CALL FOR EXPRESSIONS OF INTEREST:  
POST-DOCTORAL RESEARCHERS: Knowledge Discovery in Biomedicine**

**Reference: PostdocMSCA2017GE02**

**Description of IMIBIC**

The biomedical research institute, IMIBIC, located in Cordoba, southern Spain, is a partnership between the University of Cordoba and the Reina Sofia University Hospital. IMIBIC offers a multidisciplinary environment focused on results-oriented research and based on precision medicine and excellence in science. IMIBIC is accredited with the Excellence distinction from the Carlos III Spanish National Institute of Health.

The Institute is structured in research groups that cooperate in the implementation of its various scientific programmes. Our major goal is to promote biomedical innovation as a powerful engine for economic and social development. To this end, the Institute offers an active environment in which to conduct high-level scientific research. Regular seminars and research events offer the opportunity to meet with national and international speakers covering a diverse range of topics in biomedicine.

The IMIBIC building is located within the University Health Sciences Campus, nearby the Reina Sofia University Hospital. It hosts a wide variety of core facilities for researchers, including the Biomedical Research Support Units that host brand new equipment and laboratories to support the technical needs of the IMIBIC community, as well as a Clinical Research Unit to support clinical trial research.

In 2015, IMIBIC managed to continue increasing its scientific output, with 359 papers and the total impact factor was 1303.75 points. Furthermore, 21 property registries were fostered at the heart of the Institute, and a total of 5 EU and international projects (private and public: FP7, H2020, IMI) were active in 2015.

**Aim of the call**

The Maimonides Biomedical Research Institute of Cordoba (IMIBIC) is seeking to develop proposals with **experienced researchers** for submission under the **Horizon 2020 Marie Skłodowska-Curie Actions**.

<http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/msca-if-2017.html>

IMPORTANT: Applicants should check their CV against the eligibility and mobility conditions of Marie Skłodowska-Curie Actions.

**Brief description of the Research Group**

**[Knowledge Discovery and Intelligence Systems \(GE-02\)](#)**

The Knowledge Discovery and Intelligent Systems (KDIS) research group, established in 2009, focuses its research on Data Science (Data Analysis, Machine Learning, Data Mining, Big Data, etc.) and its applications to diverse problems in different areas, with special interest in biomedicine.

## **Project description:**

### **More flexible representations for Knowledge Discovery in Biomedicine**

The project “*More flexible representations for knowledge discovery in biomedicine*” has as objective the development of novel approaches for knowledge extraction in those biomedical contexts that demand some additional flexibility in data representation:

- Multi-instance and relational learning models that enable a more flexible representation of the input space.
- Learning models with multiple outputs, especially multi-label learning, that allow representing the output space with more flexibility.
- Multi-source and multi-view learning models, which make possible to combine several data sets describing the same problem using models individually chosen for each of these data sources.

We will develop new predictive and descriptive models, as well as mechanisms to adapt these new models to problems with special characteristics, such as those with many variables or very large data sets, such as the circumstance dictates. Some of these problems fit into the so-called Big Data term, and therefore our proposals will be adapted to this new landscape, supplying scalable implementations that are able to provide innovative, appropriate solutions in these contexts.

## **Profile**

### **Skills/Qualifications:**

There are two possible profiles for this position:

Profile 1: PhD in Bioinformatics with a strong interest in Data Science

Profile 2: PhD in Computer Science with a strong interest in Bioinformatics and /or Biomedicine

### **Specific Requirements:**

Profile 1: If the candidate is a PhD in Bioinformatics (or similar)

- Foundations of Data Mining
- Foundations of Big Data: Hadoop and Spark programming
- Python and R programming

Profile 2: If the candidate is a PhD in Computing or Mathematics:

- Foundations of Bioinformatics and Systems Biology
- Foundations of Biomedicine
- Specialized Computer Tools

### **Required Research Experience:**

Any preliminary experience in the application of data analysis (statistics, machine learning, data mining) to bioinformatics and/or biomedicine will be welcome.

### **Required Languages:**

-Excellent level of spoken and written English.

### **Eligibility criteria:**

The candidate must fulfil the eligibility and mobility conditions of Marie Skłodowska-Curie Actions.

### **Selection Process:**

The process consists of an analysis, evaluation and ranking of all CVs received. Following the evaluation, the highest ranked applicants will be called for a personal interview in order to evaluate more precisely the skills of the candidate.

**Additional comments:**

**How to Apply:** Applicants should send their CV to the following address: [personal@imibic.org](mailto:personal@imibic.org) stating clearly in the subject of the email the reference “**PostdocMSCA2017GE02**”. Deadline for sending your CV: 10<sup>th</sup> April, 2017.

**Warning:** Application emails that do not include reference will not be considered.

For more information about the Marie Skłodowska-Curie actions, see:

<http://ec.europa.eu/research/mariecurieactions/>