

## **MARData**

MARData is the umbrella for the data science related services currently operating in the Hospital del Mar Research Institute, which include the biostatistics and bioinformatics units. Collectively, the interdisciplinary MARData team offers a full list of data science related services to investigators, including experimental design (e.g. clinical, translational and basic science), statistical analyses, NGS data analysis, data visualization, clinical informatics, computational resources, machine learning/AI and data/study management.

Together with researchers, technical platforms and the institute's research support services, MARData units optimize the institute resources for data processing, analyzing, storage and computing for the purpose of allowing its researchers to answer their most ambitious and impactful research questions and support state-of-the-art transversal research projects that necessitate a central hub for data analysis and integration.

### **Bioinformatics Unit - Júlia Perera Bel**

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The Bioinformatics Unit (BU) provides computational support to process omics data (mostly NGS) with a special focus on translational research. Each type of omics data provides a complementary medical perspective of a biological system or an individual. Therefore, it represents a major opportunity to understand the biological basis of complex diseases, sensitivity and resistance mechanisms to treatments, as well as for the development of predictive biomarkers.

The facility currently maintains standardized data processing pipelines for NGS analyses (eg. QC, RNASeq, WES, CHIP-Seq, ATAC-Seq, single cell, differential expression), but also performs advanced analysis tailored to each project (eg. predictive algorithms, biomarker discovery, WGCNA, deconvolution, multi-omics integration). Moreover, we can provide training and consultations in bioinformatics, biostatistics and experimental design.

### **Medical Statistics Unit – Xavier Duran**

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The Medical Statistics Unit (MSU) objective is to offer support on statistical methodology applied to biomedical research. The unit actively collaborates with several hospital services and biomedical research groups, giving advisory to a wide range of researchers: from healthcare professionals to the most fundamental researchers. Our advisory covers all stages of research from the beginning:

- Consulting about protocol design
- Sample size estimation
- Creation of randomization lists
- Design, management and quality control of data bases

- Statistical analysis
- Report writing
- Consulting on presentations and publications