Project Meeting

Project Name: Deep Learning-aided label-free Correlative Light Electron Microscopy.
Meeting Purpose: Kick-off meeting.
Place: Laboratorio de Procesado de Imagen. Hybrid (face-to-face & virtual) meeting.
Date: 27/10/2023. **Start:** 10:00. **End:** 11:30.

Attendees:

Name	Institution
Biagio Mandracchia **(PI1)**	Universidad de Valladolid **(UVa)**
Rosa María Menchón Lara **(PI2)**	Universidad de Valladolid **(UVa)**
Marcos Martín Fernández **(MMF)**	Universidad de Valladolid **(UVa)**
Juan Pablo Casaseca de la Higuera **(PCH)**	Universidad de Valladolid **(UVa)**
Miguel Ángel Martín Fernández **(MAM)**	Universidad de Valladolid **(UVa)**
Patricia Amado Caballero **(PAC)**	Universidad de Valladolid **(UVa)**
Clara Martin de las Heras **(CMH)**	Universidad Francisco de Vitoria **(UFV)**
Juliana Manosalva Pérez **(JMP)**	Instituto de Salud Carlos III **(ISCIII)**

Agenda:

deepCLEM initial meeting to formally initiate the project and ensure all team members are aligned regarding its scope, objectives, and planned activities. The meeting was led by the Principal Investigators **(PI1, PI2)**, who provided an overview of the project and presented the main goals and work plan.

Project Objectives:

O1. The development of efficient NNs capable of identifying different cell structures from images obtained using different label-free microscopy techniques.
O2. Developing a high-throughput workflow for image correlation of cells observed using label-free microscopy and EM and recording all image volumes with nanometer precision.
O3. Validation of the generalizability of deepCLEM for the identification of structures of interest in different cell lines and the imaging at cryogenic temperatures.
O4. Use this platform to study structure-function relationships in infectious pathogens.

Work Plan Overview:

A detailed work plan was presented by **PI1** and **PI2**, outlining the different work packages (WP) and deliverables of the project. The progress will be monitored through regular team meetings and reports.

WP0: Project management and coordination.
WP1: Acquisition and management of Image Datasets.
WP2: Detection of unlabeled subcellular structures via deep learning.
WP3: Validation & optimization of the deepCLEM workflow.
WP4: deepCLEM for the diagnostics of infectious pathogens.
WP5: Proof of concept of deepCLEM at cryogenic temperatures.

Conclusion:

The kick-off meeting successfully established a common understanding of the project's vision and structure. The Principal Investigators emphasized the importance of collaboration and timely communication throughout the project's lifecycle.