

1st AIM-Net Biennial Conference

Final program

SUNDAY 7/6

13:00 Bus from Barcelona Airport T2

15:30 Expected arrival

17:00-18:00 Registration

18:00-18:30 **FELIX CAMPELO**
Universitat Pompeu Fabra

Spatiotemporal dynamics of secretory cargo export from the endoplasmic reticulum

18:30-19:00 **ERIC KRAMER**
Universitat Pompeu Fabra

ExoFILT: Transfer learning for robust and accelerated analysis of exocytosis single-particle tracking data

19:00-21:00 Social Activity

MONDAY 8/6

10:00-10:30 **PEDRO GÓMEZ-GÁLVEZ**
University of Seville/Institute of Biomedicine of Seville (IBiS)
Generative AI and tissue modeling for the analysis of bioimages

10:30-11:00 **ANTONIO MARTÍNEZ SÁNCHEZ**
Universidad de Murcia
Synthetic data for training AI models in cryo electron tomography

11:00-11:10 **JESÚS ÁNGEL ANDRÉS SAN ROMÁN**
University of Seville
Generative AI and tissue modeling for the analysis of bioimages

11:10-11:20 **ANDRÉS MOLINA RIBAGORDA**
Instituto de Biofisika (CSIC-EHU)
Meta-learning for automated analysis of high-resolution cryo-electron tomography images

11:20-11:30 **PRAKHAR DUTTA**
University of Gothenburg
ASAP (AFM Simulation and Analysis Pipeline)

11:30-12:30 **Break and Extended Poster Session**

12:30-13:00 **JI-YAN WU**
Temasek Life Sciences Laboratory & SMART DiSTAP
Deep Feature Representations of Leaf Images Enable Plant Nutrient Deficiency Classification

13:00-16:00 Break

16:00-16:30 JOSE REQUEJO-ISIDRO
CNB - CSIC (Centro Nacional de Biotecnología)
A Stochastic Framework for Oriented Molecular Diffusion

16:30-17:00 JULIA FERNANDEZ RODRIGUEZ
Center for Cellular Imaging, University of Gothenburg
Automation Services and Technologies for Research Infrastructures Excellence

17:00-17:10 CARLOTTA VIANA
Centre de Regulació Genòmica
Tracing the hidden signature: Deep Learning-based detection of leukemia through chromatin architecture in confocal and super-resolution imaging

17:10-17:20 GUILLEM GUIGÓ i COROMINAS
Universitat de Vic – Universitat Central de Catalunya
Organelle classification from ROCS data based on particle motility and morphology

17:20-18:30 Break and Extended Poster Session

18:30-19:00 ALEX LECH
University of Gothenburg
Deeplay: Enhancing PyTorch with Customizable and Reusable Neural Networks

19:00-19:30

LUCÍA MANSO ORTEGA
Karolinska Institutet

Sex-dependent CSF proteomic signatures across disease stages and clinical progression in Alzheimer's and Parkinson's disease

TUESDAY 9/6

10:00-10:30

GUILLERMO REY PANIAGUA
Universidad Carlos III de Madrid

High-fidelity bioimage restoration via adversarial learning

10:30-11:00

MARCELO BERTALMIÓ
CSIC (Instituto de Óptica)

Better vision modeling, and better artificial neural networks, by considering dendritic processing

11:00-11:10

MARIO IGLESIAS MORERA
Universitat de Vic – Universitat Central de Catalunya

Unsupervised synapse detection via architectural priors

11:10-11:20

JIACHENG HUANG
University of Gothenburg

Dancing DNA in Nanochannels

11:20-11:30

FRANCISCO AGUILAR MARTÍNEZ
Universidad de Murcia

Towards Deep Learning Detection of Tubulin Dimers in Cryo-Electron Tomography

11:30-12:30 Break and Extended Poster Session

12:30-16:00 Break – Nautical Activity

16:00-16:30 AARON DOMENZAIN
University of Gothenburg

Particle Tracking in Quantitative Microscopy: A Modular Tutorial from Classical to Deep Learning Methods

16:30-17:00 ATHANASIOS LITSIOS
Universitat Pompeu Fabra

Deep Learning Approaches Towards Decoding the Eukaryotic Cell Cycle

17:00-17:10 MIRJA GRANFORS
University of Gothenburg

A graph-walking agent for single-molecule localization microscopy data analysis

17:10-17:20 MIKHAIL ROTKEVICH
Centre de Regulació Genòmica

Integrated Analysis Pipelines for Microscopy Across Spatial Scales

17:20-17:30 EVELYN RAINA DANDAURA
IBMB-CSIC

Synonymous Mutations Impact Protein Localization and Self-assembly

17:30-18:30 Break and Extended Poster Session

18:30-19:00 **JOHAN NAKUCI**
Karolinska Institutet

Sex-dependent CSF proteomic signatures across disease stages and clinical progression in Alzheimer's and Parkinson's disease

19:00-19:30 **MARIA GUIX NOGUERA**
Universitat de Barcelona

AI-driven design of animated living robots

WEDNESDAY 10/6

10:00-10:30 **VICTORIA NEGUEMBOR**
IBMB-CSIC

Untangling chromatin folding

10:30-11:00 **MIKE HEILEMANN**
Goethe University Frankfurt

Optical structural biology with 'smart' super resolution microscopy

11:00-11:10 **KONSTANTINA NIKOLOUDI**
Centre de Regulació Genòmica

Combining Confocal Microscopy and Interpretable Artificial Intelligence to Explore Pre-Leukemic Nuclear Phenotypes

11:10-11:20 **YASMINE YASMINE**
Universitat de Barcelona

Greener Aqueous Synthesis of MIL-53 (Fe) Using Pluronic F68 Soft Templates Guided by Life Cycle Assessment

11:20-12:30 Break and Extended Poster Session

12:30-13:00 ANOOP PATIL
Singapore MIT Alliance for Research & Technology, DiSTAP
DIVA: A Latent Space Framework for Unbiased Analysis of Plant Stress from Raman Spectra

13:00-16:00 Break

16:00-16:30 ARRATE MUÑOZ-BARRUTIA
Universidad Carlos III de Madrid
AI for routine microscopy

16:30-17:00 SAMIA MOHINTA
University of Cambridge
Seeing Is Not Believing: Do Multimodal LLMs Understand Bioimages?

17:00-17:30 POSTER PRIZE
Sponsored by: **JPhys Photonics**

17:30-18:00 Break

18:00-19:00 Annual Meeting AIM-Net

19:00-20:00 Break

20:00 Gala Dinner



THURSDAY 11/6

11:00

Bus to Barcelona Airport T2