



BIST Advanced Optical Microscopy Retreat #2

17-18 Sept. 2018 – Montserrat Hotel & Training Center

Monday, September 17, 2018

10:00 - 11:00 Arrival. Welcome coffee at 10:30h, accommodation & logistics

11:00 - 11:10 **Welcome & Introduction**

Margarita Navia (BIST)

11:10 - 11:30 **Summary of the Advanced Optical Microscopy group @ BIST**

Current state. Maria Garcia-Parajo (ICFO)

11:30 - 12:45 **Bioimaging Analysis today.** *State-of-the-art, challenge, opportunities:*

Julien Colombelli, IRB - NEUBIAS and Training/Collaboration opportunities for BIST (10-15')

Sébastien Tosi, IRB - Toward integration of Deep Learning/Machine Learning in Life Science (25')

Short / Flash talks on Analysis Workflows:

Monica Marro, ICFO Title to be confirmed (5-10')

Nikos Giakoumakis, IRB "EasyFRAP: Web application for FRAP analysis" (5-10')

Discussion (15')

12:45 - 14:00 Lunch & get together

14:00 - 16:20 **Nanoscopy-driven projects & related image analysis**

4 talks of (25' including Q/A) + Short talks (10' max incl. Q/A)



Laurent Ladepêche, ICFO "SR imaging of protein organization in healthy and diseased synapses" (25')

Lorenzo Albertazzi, IBEC. "Advances in SMLM and their image analysis challenges" (25')

Carlo Manzo, Univ. Vic, "Measuring protein copy number from super-resolved images" (25')

Jérôme Solon, CRG "Machine learning based analysis of super-resolution microscopy data" (25')

Short/Flash talk: **Raquel Garcia, CRG** "Initial experience with the Leica Lightning improvement method." (10')

Short/Flash talk: **Nicolas Mateos, ICFO** "Reconstructing and quantitating cartography maps from high-density single particle tracking data" (10')

Discussion (20')

16:20 - 16:50 Coffee break

16:50 - 18:30 **Big Data in Biology and Physics: management, handling, storage, analysis etc.**

4 talks of (25' including Q/A) + Short talks (10' max incl. Q/A)

Jorge Carretero PIC. "Data analysis and management at PIC" (25')

Machiel Kolstein IFAE "Medical Imaging at IFAE. Machiel Kostein" (25')

Sébastien Tosi, IRB "Rationalizing Big Data Analysis" (25')

Discussion (20')

18:45 - 20:20 **Parallel sessions (optional for non-BIST members)**

Session 1 - *BIST matters & further actions*

Session 2 - *Exchange of know how & practical challenges, Researchers and Staff: selected topics to be discussed, desirable output: to schedule one sustained activity of interest across BIST centers for 2018-2019 to promote interactions*

20:20 - Dinner & informal discussion, social



Tuesday, September 18, 2018

09:15 - 11:00 - **Mesoscopy-driven Projects, Other Applications (with or without IA)**

4 talks of 15-20 min each, including questions).

Jim Swoger, EMBL-BCN "OPTiSPIM and Applications at EMBL-Barcelona" (25')

Emilio Gualda, ICFO "Applications of Light Sheet Microscopy at ICFO, from fishes to 3D cell cultures" (25')

Julien Colombelli, IRB "Double Oblique Plane Extended Depth Microscopy towards 3D HCS" (25')

Discussion (30')

11:00 - 11:30 Coffee break

11:30 - 12:00 **Summary of parallel sessions of the day 1 + discussion**

12:00 - 13:45 **New trends & new challenges in Advanced Optical Microscopy**

May include new modalities in the market/development, new acquisitions @ facilities, new probes and/or improved sample preparation, correlative approaches, applications etc.

Stefan Wieser, ICFO "SIMPLE: Structured Illumination Microscopy - Point Localization Estimator" (25')

Timo Zimmermann, CRG "Get to know your fluorophore in less than a millisecond: A confocal-based approach for ensemble molecule spectroscopy" (25')

Jakub Chojniacki, IrsiCaixa "Analysis of HIV-1 assembly and morphology by sSTED-FCS" (25')

Discussion (30')

13:45 - 14:00 Closing remarks

14.00 - Lunch

