FNB: Fluorescent **N**anoscopy **B**ioimaging
Rio de Janeiro on August 22nd-23rd, 2024

Thursday, August 22nd Morning ***Session 1 - Super resolution microscopy in Latin America***	
Río de Janeiro, Brazil	This opening session will delve into Fluorescence Superresolution Microscopy in Bioimaging in the Latin American context, aiming to enlighten the community on the state of the art in this field within the region. It is designed to display the foundational work in super-resolution microscopy spanning research, education, and bridging the technological and educational gap among imaging scientists. Discussions will transition from introductory concepts to the advancements and potential of fluorescence nanoscopy in bioimaging within Latin America. Moreover, the session will feature the recent educational endeavors at promoting knowledge exchange, skill development, and fostering collaborations in Latin America, thereby significantly propelling super-resolution microscopy advancement in the region.
9:00 - 9:10	**Welcome and announcements** *Kildare Miranda, Mariano Buffone, Adán Guerrero*
9:10 - 9:25	**Expanding Global Access to Biomaging in LatAm- The Fluorescence Nanoscopy in Bioimaging foundational project** *Mariano Buffone, IBYME, Argentina*
9:25 – 10:05	**Plenary talk 1.** *Alfredo Cáceres, INIMEC-CIMETSA, Argentina*
10:05 – 10:15	Q&A
10:15 – 10:25	**Educational endeavors fostering super resolution microscopy in LatAm**. *TBC*
10:25 – 10:30	Q&A
10:30- 10:40	**Break**
10:40 – 11:20	**Plenary talk 2.** *Jonas Ries. Vienna. (virtual, TBC)*
11:20 – 11:30	Q&A
11:30 – 12:00	**Career paths in super resolution microscopy** *3 speakers 10 min each*
11:30 - 11:40	*Janaina García, MBW, Argentina*
11:40 - 11:50	*Ana Romarowski, IBYME, Argentina*
11:50 - 12:00	*Haydee Hernández, UNAM, México*
12:00 – 12:10	Q&A
12:10 – 13:30	**Lunch break and meeting with the instructors**
Thursday, August 22nd Evening ***Session 2 - Single molecule localization microscopy***	
Río de Janeiro, Brazil	Highlighting the transformational impact of Single Molecule Localization Microscopy (SMLM) on unraveling biological intricacies, this session offers a foray into the molecular realm. It navigates the imaging evolution from observing isolated blinking or wandering fluorescent molecules to exploring tissues and organismal levels. The session elucidates SMLM's potential as a springboard for innovative diagnostic tools, forming a nexus between foundational research and clinical application. Prominent methodologies like STORM, PAINT, and SPT, devised to decode cell biology intricacies, will be accentuated, underlining their pivotal role in advancing molecular imaging. A focal point will be the evolutionary trajectory and prospective horizons of

	SMLM, particularly in spatial transcriptomics and whole brain imaging. Additionally, the session explores the promise of SMLM as a clinical diagnostic tool, foreshadowing a future where molecular details significantly bolster disease diagnosis and comprehension.
13:30 – 13:50	***Selected students talks*** *Two talks, 10 min each one selected from abstracts of the meeting*
13:30 - 13:40	*Student 1. TBD.*
13:40 - 13:50	*Student 2. TBD.*
13:50 - 14:00	Q&A
14:00 - 14:40	**Plenary talk 3.** *Diego Krapf. Colorado State University, USA*
14:40 - 14:50	Q&A
14:50 - 15:05	*Alvaro Crevenna. EMBL, Italy*
15:05 - 15:10	Q&A
15:10 - 15:20	***Industrial talk*** *TBD*
15:20 - 15:40	**Superres Winners Talks - Argentina** *Two talks, 10 min each one selected from the winners of the superres workshops (Argentina)*
15:20 - 15:30	*TBD*
15:30 - 15:40	*TBD*
15:40 – 16:00	***SUPPOSe. Selected students talk*** *Micaela Toscani, IBM-FIUBA, Argentina?*
16:00 - 16:10	Q&A
16:10 - 17:30	**Posters session & sponsors session**

Friday, August 23rd Morning ***Session 3 - Boosting Optical Fluorescence Microscopy with Structured Light***	
Río de Janeiro, Brazil	The session explores contemporary advancements in structured light microscopy, instrumental for significant scientific discoveries. Initially, confocal microscopy was crucial for enhancing contrast through structured illumination. The focus now transitions towards overcoming the diffraction barrier by channeling more information within the imaging system, refining spatial sampling of signals, or segregating information from its source. The session highlights the principles and potentials of various innovative techniques, demonstrating their invaluable utility for biological discovery, notably in elevating resolution in confocal microscopy and leading the charge in super-resolution multidimensional imaging. Methodologies that are redefining benchmarks in super-resolution microscopy will be unfolded. Attendees will gain insights into their application for probing the nano intricacies of life.
9:00 – 9:20	**Empowering Voices:** *Lucía López, CIBION, Argentina. TBD*
9:20 - 9:40	*Alejandro López, INCAN, México*
9:40 - 9:50	Q&A
9:50 - 10:10	**Group photo**
10:10 - 10:30	*Pablo Loza. ICFO, Barcelona*
10:30 - 10:50	*Francisco Barrantes, BIOMED, Argentina*

10:50 - 11:00	**Q&A and discussion**
11:00 - 11:30	**Break**
11:30 - 12:10	**Plenary Talk 4.** *Fernando Stefani, CIBION, Argentina*
12:10 - 12:20	Q&A
12:20 - 12:30	**Industrial talk.** TBD
12:30 - 14:00	**Lunch break and meeting with the instructors**

Friday, August 23rd Evening ***Session 4 - Expanding worldwide access to Super Resolution Microscopy***	
Río de Janeiro Brazil	This session will emphasize widening global access to nanoscale imaging, particularly in resource-limited areas, by utilizing accessible technology like conventional fluorescence microscopes and chemical reagents. It will explore harnessing brightness fluctuations of fluorescent molecules or isotropically expanding samples to generate sharper super-resolved images. The introduction of FAIR imaging protocols and image enhancement tools will be highlighted. These advances aim to unlock high-fidelity multidimensional superresolution microscopy without hefty costs, benefiting the research community. The session will also venture into integrating machine learning with super-resolution microscopy and merging it with electron microscopy for enhanced imaging, opening avenues for deeper understanding of biological systems at the nanoscale.
14:00 - 14:20	**Empowering Voices:** *TBD*
14:20 - 14:40	**Plenary 5.** *Ricardo Henriques, IGC. Portugal. (virtual) Comentario: creo que esta se debe de cambiar por el horario en Europa*
14:40 - 15:00	**Unfolding space and time with single frame super resolution microscopy** *Adán Guerrero, UNAM. México*
15:00 - 15:15	Q&A
15:15 - 15:45	**Superres Winners Talks**
15:15 - 15:25	*Josué Hernández, IPN, México*
15:25 - 15:35	*Susana Galegos, IPN, México*
15:35 - 15:45	*Valeria Piazza, CIO, México*
15:45 - 16:00	Q&A
16:00 - 16:30	**Break**
16:30 - 16:45	*Federico Lecumberry, UdelaR, Uruguay*
16:45 - 16:50	Q&A
16:50 - 17:30	**Plenary 6. TBD**
17:30 - 17:40	Q&A
17:40 – 18:00	**Plenary talk 7.** *Ali Shaib. Goettingen. Germany*
18:00 - 18:10	Q&A
18:10 - 18:30	*Closing ceremony & final remarks*
18: 30 - 20:00	**Closure dinner**

Abbreviations. TBD: To Be Defined; TBC: To Be Confirmed.