

Unit Name

Molecular Neuroscience Unit

Collaborations

Indrek Koppel, Tallinn University of Technology, Estonia, Transgenic mouse line for cell type-specific analysis of newly synthesized protein (PICSL mouse)

Paola Laurino, OIST, Japan, SUPREM: an engineered non-site-specific m6A RNA methyltransferase with highly improved efficiency

Akimitsu Narita, OIST, Japan, Nanographene-Based Polymeric Nanoparticles as Near-Infrared Emissive Neuronal Tracers

Research Personnel

Laurent Guillaud, Group Leader

Susan Boerner, Research Unit Technician

Sandra De la Fuente Ruiz, Postdoctoral Scholar

Madeleine Le Coz, Postdoctoral Scholar

Amy Xia Yi Yong, OIST Student

Sarah Zakhia, OIST Student

Maria Fransiska Emily, OIST Student

Sara Emad Mohamed Elagamy Abdelaal, OIST Student

Esteban Gabriel Fregoso, OIST Student

Scholarly Contributions and Creative Productions (by Faculty)

Journal Article

1. Paglione, M.; Restivo, L.; Zakhia, S.; Llobet Rosell, A.; Terenzio, M.; Neukomm, L. J. Local Translatome Sustains Synaptic Function in Impaired Wallerian Degeneration. *EMBO reports* 2025.
2. Ochiai, Y.; Clifton, B. E.; Le Coz, M.; Terenzio, M.; Laurino, P. SUPREM: An Engineered Non-Site-Specific m6A RNA Methyltransferase with Highly Improved Efficiency. *Nucleic acids research* 2024.
3. Zhao, H.; Guillaud, L.; Emily, M.; Xu, X.; Moshniaha, L.; Hanayama, H.; Kabe, R.; Terenzio, M.; Narita, A. Nanographene-Based Polymeric Nanoparticles as Near-Infrared Emissive Neuronal Tracers. *ACS Nano* 2024, 18.
4. Zhu, X.; Chen, Q.; Zhao, H.; Yang, Q.; Goudappagouda; Gelléri, M.; Ritz, S.; Ng, D.; Koynov, K.; Parekh, S. H.; Chetty, V. K. K.; Thakur, B. K. K.; Cremer, C.; Landfester, K.; Müllen, K.; Terenzio, M.; Bonn, M.; Narita, A.; Liu, X. Intrinsic Burst-Blinking Nanographenes for Super-Resolution Bioimaging. *Journal of the American Chemical Society* 2024, 146, 5195–5203.

Poster Presentation at Conference

- 1. Terenzio, M.
Development of Biomarker-Based Diagnostic Tools for ALS. FY2024 COI-NEXT Annual Symposium 2025.

Presentation at Conference

- 1. Terenzio, M.
Impairment in Axonal Translation and Cytoplasmic Viscosity during Aging in Sensory Neurons. EMBO Workshop on Axonal Degeneration and Regeneration 2024.
- 2. Terenzio, M.
Impairment in Axonal Translation and Cytoplasmic Viscosity during Aging in Sensory Neurons. BBSRC UKAN Researchers on Ageing: Approaches to Ageing Issues 2024.
- 3. Terenzio, M.
Axoplasm Viscoelasticity and Pathological Protein Aggregation Are Modulated by Intracellular ATP in Mammalian Neurons. FASEB Conference on RNA Localization and Local Translation 2024.
- 4. Terenzio, M.
Regulation of Axonal Translation in Neuronal Survival and Regeneration. OIST-JST joint meeting 2024.

Seminars

- 1. Terenzio, M.
Investigating Axonal Molecular Dynamics in Regeneration and Neurodegenerative Diseases. 2024.
- 2. Terenzio, M.
Regulation of RNP Granule Dynamics and Axonal Translation in Sensory and Motor Neurons. 2024.

Scholarly Contributions (by Unit Members)

Name of Unit Member	Type	Title	Outlet	Publisher	Year Pub
Laurent Guillaud	Book Chapter	Imaging Microtubule Network in Rodent Giant Glutamatergic Presynaptic Terminals		Springer Nature	2024
Esteban Gabriel Fregoso Fernandez	Poster Presentation at Conference	A microfluidic-based model for molecular characterization of axonal injury	NanoLSI		
Maria Emily	Poster Presentation at Conference	Impairment in Axonal Translation Caused by Reduction in ATP Level During Aging in Sensory Neurons	EMBO workshop, "Axonal Degeneration and Regeneration 2024"		
Maria Emily	Poster Presentation at Conference	Impairment in Axonal Translation Caused by Reduction in ATP Level During Aging in Sensory Neurons	GRC Cell Biology of Neuron 2024		

Outreach Activities (For Unit Members Only)

2025-03-12	Esteban Gabriel Fregoso Fernandez, An interdisciplinary approach to axonal injuries in medicine
2024-07-01	Esteban Gabriel Fregoso Fernandez, Mentor at OIST-KEIO international research summer camp. , OIST, KEIO university

Workshops and Seminars (Organized and Hosted by Faculty/Units)

Speaker Name(s)	Title	Location	Co-Organizers	Date
Philip Freund	Role of axonal importin β 1 in presynaptic local translation and spatial memory	Seminar Room Lab5D23, OIST		2025-03-25
Mike Fainzilber	How does a neuron grow?	Seminar Room Lab5D23, OIST		2025-03-19
Federico Pratesi	Single is beautiful: Exploring neurodegeneration through single-cell transcriptomic	Seminar Room Lab5D23, OIST		2024-12-16
Indrek Koppel	Cell type-specific omics in neuron-glia co-cultures	Seminar Room Lab5D23, OIST		2024-10-11
	EMBO workshop, "Axonal Degeneration and Regeneration"	OIST, Okinawa JAPAN	Ashley Kalinski, Claire Le Pichon, Pietro Fratta	2024-10-07
Giampietro Schiavo	Axonal transport disfunctions in neurodegenerative diseases	Seminar Room Lab5D23, OIST		2024-03-21