

Unit Name

Neuronal Rhythms in Movement Unit

Collaborations

Prof. Katarzyna Bozek, University of Cologne, Germany, Machine learning analysis of animal movement

Prof. Rieko Osu, Waseda University, Japan, Kinematic signatures of wellbeing

Dr. Simo Järvelä, University of Tampere, Finland, Kinematic signatures of interoception

Students Supervised:

- Deviana Lidya David (PhD Student)
- Salvatore Andrea Lacava (PhD Student)
- Lakshmipriya Swaminathan (PhD Student)
- Tara Helmi Turkki (PhD Student)
- Dmitriy Sakharuk (PhD Student)
- Hugo Paul Nusselder (Research Intern)
- Federico Barreca (Research Intern)
- Necmettin Isilak (Research Intern)

Scholarly Contributions and Creative Productions (by Faculty)

Journal Article

1. Uusisaari, Marylka Yoe, and Da Guo. 2025. "In Vivo Imaging of Inferior Olive Neurons Reveals Roles of Coactivation and Cerebellar Feedback in Olivocerebellar Signaling." ELife.
2. Uusisaari, Marylka Yoe, Salvatore Andrea Lacava, and Necmettin Isilak. 2024. "The Role of Mouse Tails in Response to External and Self-Generated Balance Perturbations on the Roll Plane." Journal of Experimental Biology.

Poster Presentation at Conference

1. Uusisaari, Marylka Yoe, and Da Guo. 2024. "Inferior Olive Spike Modulation by Cerebellar Feedback and Synchronicity." SfN (Society for Neuroscience) Meeting 2024, October.
2. Uusisaari, Marylka Yoe, and Deviana David. 2024. "Anatomical Descriptions and In-Vivo Recording of the Superior Colliculus Projections to the Inferior Olivary Neurons." SfN (Society for Neuroscience) Meeting 2024, October.

Scholarly Contributions (by Unit Members)

Name of Unit Member	Type	Title	Outlet
Bogna Ignatowska-Jankowska	Journal Article	A Helping HAND: Therapeutic Potential of MAGL Inhibition Against HIV-1-associated Neuroinflammation	

Name of Unit Member	Type	Title	Outlet
Bogna Ignatowska-Jankowska	Journal Article	Acute Effects of Monoacylglycerol Lipase Inhibitor ABX1431 on Neuronal Hyperexcitability, Nociception, Locomotion, and the Endocannabinoid System in HIV-1 Tat Male Mice	
Kohgaku Eguchi	Journal Article	Phosphoinositides: Nanoscale effects on neuronal membranes	The Neuroscientist
Deviana David	Poster Presentation at Conference	Anatomical and Functional Study of Superior Colliculus to Inferior Olive Pathway in Mice	FENS Forum
Bogna Ignatowska-Jankowska	Poster Presentation at Conference	Effects of CP55,940 on step kinematics during treadmill running in marker based 3D motion capture of mice	International Cannabinoid Research Society Annual Symposium
Bogna Ignatowska-Jankowska	Poster Presentation at Conference	Disruption of treadmill running by harmaline and cannabinoid agonist in marker-based 3D motion capture of mice	FENS Forum
Tara Turkki	Poster Presentation at Conference	Disruption of climbing behavior by harmaline in marker-based 3D motion capture of freely moving mice	FENS Forum
Kohgaku Eguchi	Poster Presentation at Conference	Le Monnier E., Shigemoto R. Alternative splicing of Ca 2.1 EF-hand contributes to the tightness of calcium influx-neurotransmitter release coupling at mouse cerebellar synapses	FENS Forum
Lakshmipriya Swaminathan	Poster Presentation at Conference	Exploring Body Configurations of mice during treadmill locomotion	Researcher Appreciation Month (RAM) at OIST
Tara Turkki	Poster Presentation at Conference	Disruption of climbing behavior by harmaline in marker-based 3D motion capture of freely moving mice	Researcher Appreciation Month (RAM) at OIST
Tara Turkki	Poster Presentation at Conference	Movement to Mind: Can Learning Shape Inferior Olive Neurons?	Blitz talk at Researcher Appreciation Month (RAM) at OIST
Bogna Ignatowska-Jankowska	Poster Presentation at Conference	Deep learning imputation of missing data empowers behavior analysis across species	Society for Neuroscience Meeting 2024
Salvatore Lacava	Poster Presentation at Conference	The spinal vestibular nucleus controls the tail in challenging balancing contexts	OIST Workshop "Principles of Synapse Organization and Neural Network Regulation Gained Through Evolution"
Kohgaku Eguchi	Poster Presentation at Conference	Regulation of the stability of synaptic transmission mediated by CaV2.1 EF-hand alternative splicing and tightness of calcium influx-sensor coupling	OIST-NanoLSI Joint Symposium
Kohgaku Eguchi	Presentation at Conference	Quantitative analysis of phospholipid distribution on neuronal cell membranes using freeze-fracture replica labeling method	67th Symposium of Japanese Society of Microscopy
Tara Turkki	Seminars	Examining Morphological Effects of Motor Learning in the Mouse Inferior Olive	Erasmus University Medical Center

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Tara Turkki	Seminars	Examining Morphological Effects of Motor Learning in the Mouse Inferior Olive	Cambridge University
Tara Turkki	Seminars	Examining Morphological Effects of Motor Learning in the Mouse Inferior Olive	University of Jyväskylä, Centre of Excellence in Music, Mind, Body and Brain (CoEMMBB)
Bogna Ignatowska-Jankowska	Seminars	Distinct kinematic phenotypes revealed by high-precision marker-based 3D motion capture in freely behaving mice	Waseda University, School of Human Sciences
Deviana David	Seminars	Anatomical and Functional Study of Superior Colliculus to Inferior Olive Pathway in Mice	Erasmus MC
Bogna Ignatowska-Jankowska	Seminars	Distinct kinematic phenotypes revealed by high-precision marker-based 3D motion capture in freely behaving mice	Center for Advanced Biomedical Sciences (TWIns), Waseda University

Honors, Awards & Fellowships

May 2023 - Ongoing Special Prize at Exceptional Presentation, 2023, Gordon Research Conference