PERSONAL DATA

Lilla Botzheim

Budapest, 02.08.1991.

botzheim.lilla@wigner.hu

SKILLS

- Complex thinking
- Strong observation and communication skills
- Interdisciplinary approach
- Knowledge of motion analysis systems (Zebris, Vicon)
- Experience in kinematic and bioelectrical signal processing

LANGUAGES

ENGLISH | "C" type complex language exam

2016

GERMAN | "C" type complex language exam

2009

INFORMATICAL KNOWLEDGE

MATLAB | Active usage, softver developement, data processing

MS Office | Active usage (Word, Excel, PowerPoint)

LILLA ZÓLYOMINÉ BOTZHEIM

RESEARCHER

Fields: measurement and modelling of cyclic human movement, investigation of muscle-synergies, developement of functional electrical stimulation trainings

EDUCATION

UNIVERSITY OF PECS, DOCTORAL SCHOOL OF BIOLOGY - AND SPORTBIOLOGY

Phd biology

TITLE OF THE THESIS: THE EFFECT OF CHANGING EXTERNAL CONSTRAINTS ON THE COORDINATION OF ARM CYCLING MOVEMENT

2016 - 2021

PÁZMÁNY PÉTER CATHOLIC UNIVERSITY, FACULTY OF INFORMATION TECHNOLOGY AND BIONICS

Info-bionics engineer Msc

TITLE: ANALYSIS OF THE VARIANCE OF THE ARM CYCLING IN DIFFERENT MOVEMENT PLANES

2014 - 2016

PÁZMÁNY PÉTER CATHOLIC UNIVERSITY, FACULTY OF INFORMATION TECHNOLOGY AND BIONICS

Molecular bionics engineer Bsc

TITLE: SEPARATION OF MICROVESICLES WITH HELP OF MICROFLUIDICS CHANNEL SYSTEM

2010 - 2014

WORK EXPERIENCES

WIGNER RESEARCH CENTRE FOR PHYSICS

Department of Computational Sciences,
Neurorehabilitation and Motor Control Reseach Group

Research fellow - Head of the group

2023 - now

Junior research fellow

2018 - 2022

UNIVERSITY OF PECS

Faculty of Sciences

Honorary associate professor

2023 - now

Junior research fellow

2019 - 2020

GRANTS

- Participation in the GINOP-2.3.2.-15-2016-00022 project "Establishment of an interdisciplinary research, education and development centre at the University of Pécs using 3D printing and visualisation technologies". (In which Wigner FK is also participating).
- Participation in the project GINOP-2.3.2.-15-2016-00032 "Establishment of a research centre for neurorehabilitation and human-machine interface at the University of Pécs".

SELECTED PUBLICATIONS

- Radeleczki, B, M Mravcsik, L Botzheim, and J Laczko. 2023. **"Prediction of Leg Muscle Activities from Arm Muscle Activities in Arm and Leg Cycling."** *ANATOMICAL RECORD. doi:10.1002/ar.25004.*
- Botzheim, L, DM Ernyey, M Mravcsik, L Varaljai, A Klauber, P Cserhati, and J Laczko. 2022.**"Changes in Active Cycling Time and Distance during FES-Assisted Cycling before and after the Pandemic Closure – A Case Study."** *ARTIFICIAL ORGANS 46 (3): E178–E182.*
- Botzheim, L, J Laczko, D Torricelli, M Mravcsik, JL Pons, and Barroso F Oliveira. 2021. **"Effects of Gravity and Kinematic Constraints on Muscle Synergies in Arm Cycling."** *JOURNAL OF NEUROPHYSIOLOGY 125 (4): 1367–1381. doi:10.1152/jn.00415.2020.*
- Mravcsik, M, L Botzheim, N Zentai, D Piovesan, and J Laczko. 2021. **"The Effect of Crank Resistance on Arm Configuration and Muscle Activation Variances in Arm Cycling Movements."** *JOURNAL OF HUMAN KINETICS 76: 175–189. doi:10.2478/hukin-2021-0053.*
- Katona, P; Mravcsik, M; Botzheim, L; Klauber, A; Cserháti, P; Laczkó,J (2021) **Bionikai megoldások gerincvelősérültek mozgás-rehabilitációjában és sportjában – Funkcionális Elektromos Izomingerléssel végzett kerékpározás : Bionic solutions in movement-rehabilitationand sports in the case of people with spinal cord injury** *MAGYAR SPORTTUDOMÁNYI SZEMLE 22 : 1 (89) pp. 3-18. , 16 p.*
- Botzheim, L., M. Mravcsik, I. Zsenak, D. Piovesan, and J. Laczko. 2019. **"Jerk Decomposition during Bimanual Independent Arm Cranking."** *In 2019 IEEE 16th International Conference on Rehabilitation Robotics (ICORR), 264–269. doi:10.1109/ICORR.2019.8779526.*
- Botzheim L, Piovesan D, Laczko J. (2019): **Body position does not affect jerk decomposition in upper limb cycling.** *Program No. 064.11. 2019 Neuroscience Meeting Planner. Chicago, IL: Society for Neuroscience, 2019. Online.* https://www.abstractsonline.com/pp8/#!/7883/presentation/59144
- Botzheim L, Malik Sz, Laczkó J.(2019): **Motor synergies of cyclic upper limb movement;** *Summer School of Neurorehabilitation, Baiona, Spanyolország, SSNR2019-Proceedings, pp. 33-34.,* http://www.ssnr2019.org/wp-content/uploads/2019/10/SSNR2019-Proceedings.pdf
- Botzheim L, Mravcsik M, Malik Sz, Zentai N, Laczko J (2019): **The effect of crank resistance on muscle synergies during arm cranking;** *Progress in Motor Control XII: Movement Improvement Conference (2019), Amsterdam, Hollandia*
- Botzheim L, Mravcsik M, Laczko J. (2019) **Comparing cyclic human arm movement patterns.** *8th Interdisciplinary Doctoral Conference 2019, Book of Abstracts, Pécs, 2019*
- Botzheim L, Laczko J, Mravcsik M, Malik Sz, Szabo S. (2019). **Finding 1-Dimensional substructures in set of kinematic time series in a cyclic motor task**. *29th Annual Meeting of the Society for the Neural Control of Movement, Poster Abstracts 1G-98. p. 67-68. Toyama, Japan, 2019. Online.*