Uri Ramírez Pasos

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EDUCATION

- Dr. rer. nat., Dept. of Neurology, University of Würzburg, Germany 2013–2018
- Qualification Program, Dept. of Neurology, University of Würzburg, Germany 2012–2013
- BSc. Mathematics, University of Florida, USA 2008–2012

RESEARCH EXPERIENCE

Dept. Of Neurology, University Hospital Würzburg, Germany 2019–present
Research Fellow
Project: "Cortical and subcortical synchrony in the DYT1 rat model" - Funded by the Interdisciplinary Center for Clinical Research (IZKF). Supervisor: Dr. Chi Wang Ip

- Highlighted a decrease in motor cortical and GPi beta oscillations in DYT1 rats compared to wild type, indicating a frequent-specific and large-scale disruption of neural synchronisation in dystonic individuals.

Dept. Of Neurology, University Hospital Würzburg, Germany 2013–2018
Graduate Researcher
Project: "Subthalamic Nucleus Neural Synchronization and Connectivity during Limbic Processing of Emotional Pictures: Evidence from Invasive Recordings in Patients with Parkinson's Disease" - Funded by the German Research Foundation (DFG). Supervisor: Professor Jens Volkmann

- Designed, wrote research protocol for, and executed study on emotional processing dynamics as indexed by local synchrony in the subthalamic nucleus (STN) and cortico-subcortical functional connectivity using simultaneous high-density EEG and STN-LFP recordings and dopaminergic manipulation in people with Parkinson's Disease.
- Analysed simultaneous STN-LFP and EMG signals recorded during simple motor tasks to investigate the effect of dopamine of long-range coupling during movement.

Dept. Of Neurology, University Hospital Würzburg, Germany 2012–2013
Graduate Researcher
Project: "Movement-Related Activity of Human Subthalamic Neurons during a Reach-to-Grasp Task" - Funded by DFG. Supervisor: Professor Jens Volkmann

- Performed spectral analysis of spike trains extracted from patients with Parkinson's disease indicating how different aspects of reach-to-grasp movement are accompanied by specific patterns of synchrony in the STN.

Center for the Study of Attention and Emotion, University of Florida, FL, USA 2011
Undergraduate assistant

Project: Introduction to EEG methods. Supervisor: Professor Andreas Keil
- Learned and performed preprocessing methods for EEG data.
- Learned to code in MATLAB focusing on attentional models of visual processing.

FUNDING

- Secured PhD Studentship ~ €80 000/4 years

PUBLICATIONS

- **Ramirez Pasos, U. E.**, Steigerwald, F., Isaias, I. U., Matthies, C., & Volkmann, J. Subthalamic Nucleus Neural Synchronization and Connectivity during Limbic Processing of Emotional Pictures: Evidence from Invasive Recordings in Patients with Parkinson's Disease, in preparation.
- **Ramirez Pasos, U. E**., Steigerwald, F., Reich, M. M., Matthies, C., Volkmann, J., & Resse, R. (2019). Levodopa modulates functional connectivity in the upper beta band between subthalamic nucleus and muscle activity in tonic and phasic motor activity patterns in Parkinson's disease. *Frontiers in Human Neuroscience*, under review.
- Bolzoni, F., Esposti, R., Marchese, S. M., Pozzi, N. G., **Ramirez-Pasos, U. E.**, Isaias, I. U., & Cavallari, P. (2018). Disrupt of Intra-Limb APA Pattern in Parkinsonian Patients Performing Index-Finger Flexion. *Frontiers in Physiology*, 9, 1745. https://doi.org/10.3389/fphys.2018.01745
- Pötter-Nerger, M., Reese, R., Steigerwald, F., Heiden, J. A., Herzog, J., Moll, C. K. E., … **Ramirez-Pasos, U. E.**, …, Volkmann, J. (2017). Movement-Related Activity of Human Subthalamic Neurons during a Reach-to-Grasp Task. *Frontiers in Human Neuroscience*, 11. https://doi.org/10.3389/fnhum.2017.00436

SUPERVISION EXPERIENCE

- Supervisor to entry-level PhD student: Introduction to signal processing, University of Würzburg, 2019–Present
- Supervisor to Research Technicians (EEG): University of Würzburg, 2016

COMMUNITY ENGAGEMENT

• Volunteer for Autism Speaks, University of Florida chapter, 2010-2011

PRESENTATIONS

Poster

- *European Student Conference, Berlin, Germany.* Dopamine Effects on Subthalamic Nucleus Activity in Parkinsonian Patients during an Emotional Picture Task. Ramirez Pasos, U. E., Steigerwald, F., Reich, M. M., Matthies, C., Isaias, I., Volkmann, J. 2017
- *International Congress of Parkinson's Disease and Movement Disorders, Berlin, Germany*. Dopamine and Task-dependent Evolution of Oscillatiory Activity in the Subthalamic Nucleus (STN) and Coupling between the STN Local Field Potential and Muscle Activity in Parkinson's Disease. Ramirez Pasos, U. E., Resse, R., Steigerwald, F., Reich, M. M., Matthies, C., Isaias, I., Volkmann, J. 2016

- *Neuroscience 2014 Annual Meeting, Society for Neuroscience, Washington D.C., USA*. Analysis of Single Unit and Neuronal Activity in the Human Subthalamic Nucleus during Reach-to-Grasp Movements. Ramirez Pasos, U. E., Pötter-Nerger, M., Reese, R., Steigerwald, F., Volkmann, J. 2014

RELEVANT SKILLS

- MATLAB, R, Python, SQL, Java, C++
- EEG setup and analysis (Fieldtrip and SPM)
- Fluent: Spanish, English, and German. Intermediate: French.

PROFESSIONAL AFFILIATIONS

• Society for Neuroscience 2013-2015
- International Parkinson and Movement Disorders Society 2015-2016

OTHER EMPLOYMENT

• Tutor in high school mathematics, Mexico, 2017

REFEREES

Dr. Jens Volkmann, Supervisor, Dept. of Neurology, University Hospital in Würzburg, Germany, volkmann_j@ukw.de, +49 931 20123751

Dr. Muthuraman Muthuraman, Supervisor, Dept. of Neurology, University Hospital in Mainz, Germany, mmuthura@uni-mainz.de, +49 (0) 6131 17 8074