Wesley Clawson

PhD Candidate - Institut de Neurosciences des Systèmes

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Education

Bachelor of Science in Electrical Engineering, Honors
Bachelor of Science in Physics, Honors
University of Arkansas, 2014

Masters of Science in Electrical Engineering
University of Arkansas, 2016

Research

PhD - Epilepsy in Working Memory
Advisor: Dr. Christophe Bernard
INS, Physionet Team, 2018 - current

Funded through a Marie-Curie international training network project, M-GATE. The aim of the project is to explore working memory in the context of temporal lobe epilepsy. We use multi-region electrophysiology to examine cortical dynamics during behavioral trials in rats. Emphasis is given to local population level dynamics, neural coding and computation.

Masters Thesis – Cortical Dynamics
Advisors: Dr. Woodrow Shew & Dr. JingYang
University of Arkansas, 2014-2016

A continuation of my undergraduate research which included experimentation and analysis in collaboration with Dr. Ralf Wessel at Washington University. We are interested in neural avalanches during different brain states in response to visual stimuli. The focus of the results focus on the functional tradeoffs that occur during these various brain states.

Honors Thesis University of Arkansas
Advisor: Dr. Woodrow Shew
University of Arkansas, 2012 - 2014

Worked summers of ’12 and ‘13 at Washington University at St. Louis experimentally testing the brain response in the visual cortex of the turtle using silicone micro-electrode arrays. We are interested in a statistical phenomenon, neural avalanches, and the mechanism behind their function.

Howard Hughes Medical Institute – Protein Dynamics
University of Arkansas 2010 – 2012

Spring ’10 – Spring ’12 of the school year and the summer of ’10- ‘11 working on a protein dynamics study. In particular, we are interested in determining the stability and diffusion of wild-type and mutants of staphylococcal nuclease in solution and in measuring the size of native, intermediate, and denatured states of these proteins.

Publications	Clawson, W., Vicente, A. F., Ferraris, M., Bernard, C., Battaglia, D., & Quilichini, P. P. (2019). Computing hubs in the hippocampus and cortex. Sci Adv, 5(6), eaax4843. doi:10.1126/sciadv.aax4843 Clawson, W. P., Wright, N. C., Wessel, R., & Shew, W. L. (2017). Adaptation towards scale-free dynamics improves cortical stimulus discrimination at the cost of reduced detection. PLoS Computational Biology, 13(5), 1–21. https://doi.org/10.1371/journal.pcbi.1005574 Shew, W. L., Clawson, W. P., Pobst, J., Karimipanah, Y., Wright, N. C., & Wessel, R. (2015). Adaptation to sensory input tunes visual cortex to criticality. Nature Physics, 11(8), 659–663. https://doi.org/10.1038/nphys3370
Reviewer	Journal of Neuroscience: Methods, 2018 Frontiers in Systems Neuroscience, 2019
Invited Talks & Presentations	2019 Universitat Pompeu Fabra, Gustavo Deco Lab, Barcelona 2019 Donders Institute, Memory Dynamics Lab, Netherlands 2019 University of Arkansas, UA Integrative Systems Neuroscience 2018 Cognitive Computing Conference, Poster 2018 Society for Neuroscience Conference, Poster 2018 Gordon Research Conference, Poster 2018 Gordon Research School, Poster 2018 XXIII National Conference on Statistical Physics and Complex Systems, Parma 2018 NetSci Conference Paris, Poster 2016 Society for Neuroscience Conference, Poster 2013 Society for Neuroscience Conference, Poster 2012 University of Arkansas INBRE Conference, Poster
Schools & Workshops	2019 Molecular Genetic Tools for the Study of Neural Circuits 2018 Trieste Encounters on Cognitive Science 2018 Gordon Research School 2018 NetSci Network Neuroscience School
Events Organized	Aix-Marseille PhD Days 2018 - Through the Looking Glass: Beyond our Reality Gordon Research School 2020 Continuing Education Program, Institut de Neurosciences des Systèmes
Non-Profit	**Tibetan Cultural Institute of Arkansas – President** *Arkansas, 2014 - 2016* The Tibetan Cultural Institute of Arkansas is dedicated to helping the Tibetan people preserve their culture within the emerging global village. **TibetanTees – Founding Member** *University of Arkansas, 2014 - 2017* The goal of TibetanTees is to provide a way for Tibetan youth to enhance both their modern education and their traditional education through tutoring as well as to provide employment to their families. TibetanTees was the recipient of a Clinton Global Initiative 2014 award.
Additional Work Experience	Capstone Project 'Client', Centrale Supélec Paris 2018 - 2019 Windstream Communications, Cloud Engineer, 2016 - 2017

	Tutor, University of Arkansas, 2012-2014 Volunteer Coach for FIRST LEGO League Competition, 2013-2014
Honors	Marie Curie M-GATE Fellowship Recipient, 2018 Youth Mentor Award FIRST LEGO League, 2015 Member of Honors College – Departmental Honors, 2014 Clinton Global Initiative University Recipient, 2014 Honors College Study Abroad Grant Recipient, 2013 SURF Grant Recipient, 2013 2nd Place for Oral Presentation INBRE Conference, 2012
References	ristophe Bernard - christophe.bernard@univ-amu.fr Dr. Demian Battaglia - demian.battaglia@gmail.com Dr. Woodrow Shew – woodrowshew@gmail.com