Peter W. Donhauser, Ph.D.

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Degrees

2013-2019	**Ph.D.** in Neuroscience, McGill University, Canada Advisor: Sylvain Baillet
2012-2013	**Ph.D. rotations** in Neuroscience, McGill University, Canada Advisors: Alain Dagher, Sylvain Baillet, Alan C. Evans
2011-2012	**M.Sc.** Brain Imaging Methods, University of Glasgow, United Kingdom Advisor: Pascal Belin
2008-2011	**B.Sc.** Psychology, Friedrich-Alexander University Erlangen-Nuremberg, Germany Advisor: Oliver C. Schultheiss

Academic history

2021-pres	Postdoctoral fellow (David Poeppel lab), Ernst Strüngmann Institute, Frankfurt, Germany
2020-2021	Scientific consultant, self-employed
2019-2020	Postdoctoral fellow (Denise Klein lab), McGill University, Canada
2009-2011	Student research assistant (Oliver Schultheiss lab), Friedrich-Alexander University Erlangen-Nuremberg, Germany

Journal Articles

2024	Degano, G., Donhauser, P. W., Gwilliams, L., Merlo, P., and Golestani, N. (2024). Speech prosody enhances the neural processing of syntax. *Communications Biology*, 7:748
2023	Wiesman, A. I., Donhauser, P. W., Degroot, C., Diab, S., Kousaie, S., Fon, E. A., Klein, D., Baillet, S., 6, P.-A. R. G. V. S., and Network, Q. P. (2023). Aberrant neurophysiological signaling associated with speech impairments in parkinson's disease. *npj Parkinson's Disease*, 9(1):61
	Donhauser, P. W. and Klein, D. (2023). Audio-tokens: a toolbox for rating, sorting and comparing audio samples in the browser. *Behavior research methods*, 55(2):508–515
2020	Donhauser, P. W. and Baillet, S. (2020). Two distinct neural timescales for predictive speech processing. *Neuron*, 105(2):385–393

2018 Donhauser, P. W., Florin, E., and Baillet, S. (2018). Imaging of neural oscillations with embedded inferential and group prevalence statistics. *PLOS Computational Biology*, 14(2):1–33

2015 Donhauser, P. W., Rösch, A. G., and Schultheiss, O. C. (2015). The implicit need for power predicts recognition speed for dynamic changes in facial expressions of emotion. *Motivation and Emotion*, 39(5):714–721

2014 Donhauser, P. W., Belin, P., and Grosbras, M.-H. (2014). Biasing the perception of ambiguous vocal affect: a TMS study on frontal asymmetry. *Social Cognitive and Affective Neuroscience*, 9(7):1046–1051

Conference abstracts & Presentations

2022 Donhauser, P. W., Schaworonkow, N., Poeppel, D. *I can't believe it's not German: Characterizing context-dependent neural activity with pseudo-speech.*

Schaworonkow, N., Donhauser, P. W., Poeppel, D. *Electrophysiological variability in MEG evoked responses during auditory word processing.*

2021 Degano, G., Rampinini, A., Donhauser, P. W., Merlo, P., Golestani, N. *Cortical signatures of the interaction between prosody and syntax during naturalistic language processing.* Society for the Neurobiology of Language.

2018 Donhauser, P. W., Baillet, S. *A neural signature of predictive coding during natural speech listening.* International Conference on Biomagnetism, Philadelphia, PA, USA.

2017 Donhauser, P. W., Thomas, M, Morillon, B, Gracco, V, Baillet, S. *Predictive coding during natural speech listening studied using MEG and recurrent neural networks* Montreal Artificial Intelligence and Neuroscience Meeting, Montreal, QC, Canada.

Speech entrainment across time scales: differential effects on low-frequency and beta oscillations. Annual Meeting of the Organization for Human Brain Mapping, Vancouver, BC, Canada, June 2017.

Mapping of distinct oscillatory sources in MEG despite imbalances in source power. Annual Meeting of the Organization for Human Brain Mapping, Vancouver, BC, Canada, June 2017.

2016 *Parametric modelling of oscillatory sources in MEG.* 10th Annual CAN Meeting Canadian Association for Neuroscience, Toronto, ON, Canada, May 2016.

2015 Donhauser, P. W., Florin, E. & Baillet, S. *Spontaneous and stimulus-entrained cross-frequency coupling: spiking-neuron modelling and experimental results from human visual gamma oscillations.* QBIN scientific day, Montreal, QC, Canada.

2014 Donhauser, P. W., Florin, E. & Baillet, S. *Spontaneous and stimulus-entrained cross-frequency coupling: spiking-neuron modelling and experimental results from human visual gamma oscillations.* IPN retreat, Montreal, QC, Canada.

Donhauser, P. W. & Baillet, S. *Local and long-range phase-amplitude coupling in a cortical spiking network model.* BMC Neuroscience 15.Suppl 1 (2014): P222.

2013 Donhauser, P. W., Coull, J., Leyton, M., He, Y., & Dagher, A. *Dopamine Precursor Depletion Alters Flexibility of Dynamic Network Structure in Resting-State fMRI.* 19th Annual Meeting of the Organization for Human Brain Mapping, Seattle, WA, USA, May 2013.

2012 Donhauser, P. W., Belin, P., Grosbras, M.-H. *Biasing the perception of ambiguous vocal affect: a TMS study on frontal asymmetry.* Magstim Neuroscience Conference, Oxford, United Kingdom, May 2012.

Donhauser, P., Rösch, A., & Schultheiss, O. *The implicit need for power predicts fast recognition of subtle facial expressions of emotion.* 24th Annual Convention of the Association for Psychological Science, Chicago, IL, USA, May 2012.

Donhauser, P. W., Grosbras, M.-H., Belin, P. *rTMS-study of Frontal Asymmetry in the Perception of Ambiguous Affective Vocalizations.* British Association of Cognitive Neuroscience Annual Meeting, Newcastle, United Kingdom, April 2012.

Invited talks

2019 *Two distinct neural time scales for predictive speech processing.* Max Planck Institute for Empirical Aesthetics, Frankfurt, Germany.

2018 *Predictive speech processing in the brain.* Huawei Research, Montreal, QC, Canada.

Extraction of functionally defined spatial components: example from a natu- ral speech experiment. Biomagnetic signal analysis workshop, 21st Interna- tional Conference on Biomagnetism, Philadelphia, PA, USA.

2015 *Optimal spatial filtering of MEG signals for studying neural oscillations.* IPN retreat, Montreal, QC, Canada.

Oscillatory Hierarchies: stimulus-induced vs. intrinsic mechanisms. MEGM-cGill Comprehensive Training, Montreal, QC, Canada.

2014 *Dynamics of cross-frequency coupling in the resting & active states.* Resting-state functional MRI workshop, Montreal, QC, Canada.

2013 *Effects of dopamine precursor depletion on dynamic network structure in resting-state fMRI.* IPN retreat, Montreal, QC, Canada

Awards

2019-2020	**Richard & Edith Strauss postdoctoral fellowship** McGill Faculty of Medicine competition	CAD 37,000
2017-2018	**Graduate Student fellowship from the Healthy Brains for Healthy Lives initiative** Canada First Research Excellence Fund (CFREF)	CAD 15,000
2017	**QBIN Best Poster award** Montreal Artificial Intelligence and Neuroscience meeting	CAD 400
2016-2017	**Jean Timmins Costello fellowship** Montreal Neurological Institute competition	CAD 10,000
2016	**GREAT (Graduate research and training) travel award** Integrated Program in Neuroscience	CAD 500
2015-2016	**Quebec Bioimaging Network (QBIN) fellowship**	CAD 7,000
2015-2016	**Gerald Clavet fellowship** McGill Faculty of Medicine competition	CAD 12,000
2014-2015	**Max E. Binz fellowship** McGill Faculty of Medicine competition	CAD 12,000
2013-2014	**IPN Graduate Excellence Award** Integrated Program in Neuroscience	CAD 20,000
2013	**QBIN travel award**	CAD 500
2012-2013	**DAAD doctoral fellowship** Deutscher Akademischer Auslandsdienst	EUR 22,000
2012	**IPN Recruitment Award**	CAD 10,000
2012	**Student/Young Scientist Bursary** British Association of Cognitive Neuroscience	GBP 150
2011	**DAAD master fellowship**	EUR 15,147

Supervision

Li-Yuan Chen	*Correlating heart rate fluctuations with MEG and behaviour* Honours research project (2014-2015)
Christine Cahaney	*Imaging deep striatal structures with MEG* Honours research project (2013-2014)

Ad-hoc Reviewer

PLoS Biology, PLoS Computational Biology, PNAS, Psychological Review, Human Brain Mapping, NeuroImage, Scientific Reports, Frontiers in Human Neuroscience, Motivation and Emotion, Cognition and Emotion, Developmental Neuropsychology

Teaching

Seminar	Cognitive Psychology
	Undergraduate course, Goethe university, Frankfurt, Germany
Lecture	Computational Neuroscience (Oscillations & Connectivity)
	Graduate course, McGill University, prepared and corrected coding assignments
Workshop	Guided Ph.D & Post-doctoral researchers in a 1-week training of MEG paradigm design and analysis
	MEG@McGill Comprehensive Training, McGill, Canada (March & November 2015, November 2016)
Lecture	*Spectral analysis of neural signals*, 1-hour lecture to Ph.D & Post-doctoral researchers. Link to video
	MEG@McGill Comprehensive Training, McGill, Canada (March & November 2015, November 2016)
Lecture	*Statistics and Research methods in behavioural sciences*, 3-hour lecture to undergraduate students
	Psychology Summer School, University of Glasgow, UK (2012)

Programming skills

Python: 7 years of experience

Matlab: 9 years of experience

Javascript: 4 year of experience

Github profile

Languages

German (mother tongue)

English (fluent)

Bulgarian (conversational)

French (written understanding)

Clinical experience

2007-2008	12-month full-time assistant in a rehabilitation and integration centre for people with mental disabilities.
	Regnitzwerkstätten gGmbH, Erlangen, Germany
2011	6-month part-time neuropsychological assistant in a stroke rehabilitation centre
	Klinikum am Europakanal, Erlangen, Germany

Last updated: December 13, 2024