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## Peter W. Donhauser, Ph.D.

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### Degrees

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

### Academic history

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| 2021-pres | Postdoctoral fellow (Poeppel department), 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

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| submitted | <b>Donhauser, P. W.</b> , Klein, D. Modeling individual mental representations underlying similarity judgments.  |
| 2025      | *Moore, C., <b>*Donhauser, P. W.</b> , Klein, D., and Byers-Heinlein, K. (2025). Efficient neural encoding as revealed by bilingualism. <i>Proceedings of the National Academy of Sciences</i> , 122(34):e2513768122 |
| 2024      | Degano, G., <b>Donhauser, P. W.</b> , Gwilliams, L., Merlo, P., and Golestani, N. (2024). Speech prosody enhances the neural processing of syntax. <i>Communications Biology</i> , 7:748                             |

- 2023 Wiesman, A. I., **Donhauser, P. W.**, Degroot, C., Diab, S., Kousaie, S., Fon, E. A., Klein, D., Baillet, S., PREVENT-AD Research Group, and Quebec Parkinson Network (2023). Aberrant neurophysiological signaling associated with speech impairments in parkinson's disease. *npj Parkinson's Disease*, 9(1):61
- 2022 **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

- 2024 Donhauser, P. W., Klein, D. *Modeling individual mental representations from odd-one-out choices in a triplet task*. Highlights in the Language Sciences, Nijmegen, Netherlands.
- 2023 Donhauser, P. W., Sun, Y., Poeppel, D. *Learning to map between discrete structure in speech sounds and motor actions*. Society for the Neurobiology of Language, Marseille, France.
- 2022 Donhauser, P. W., Schaworonkow, N., Poeppel, D. *I can't believe it's not German: Characterizing context-dependent neural activity with pseudo-speech*. Biomag, Birmingham, UK.  
  
Schaworonkow, N., Donhauser, P. W., Poeppel, D. *Electrophysiological variability in MEG evoked responses during auditory word processing*. Biomag, Birmingham, UK.
- 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

- 2025 *Feature codes across contexts, languages and people.* Campus Biotech, Geneva, Switzerland.
- 2024 *Neurophysiology of speech predictions at the sublexical level.* Symposium "Language Predictions across linguistic units", Psychologie und Gehirn, Hamburg, Germany.
- 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 natural speech experiment.* Biomagnetic signal analysis workshop, 21st International 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-Gill 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	<b>Richard &amp; Edith Strauss postdoctoral fellowship</b> McGill Faculty of Medicine competition	CAD 37,000
2017-2018	<b>Graduate Student fellowship from the Healthy Brains for Healthy Lives initiative</b> Canada First Research Excellence Fund (CFREF)	CAD 15,000
2017	<b>QBIN Best Poster award</b> Montreal Artificial Intelligence and Neuroscience meeting	CAD 400
2016-2017	<b>Jean Timmins Costello fellowship</b> Montreal Neurological Institute competition	CAD 10,000
2016	<b>GREAT (Graduate research and training) travel award</b> Integrated Program in Neuroscience	CAD 500
2015-2016	<b>Quebec Bioimaging Network (QBIN) fellowship</b>	CAD 7,000
2015-2016	<b>Gerald Clavet fellowship</b> McGill Faculty of Medicine competition	CAD 12,000
2014-2015	<b>Max E. Binz fellowship</b> McGill Faculty of Medicine competition	CAD 12,000

2013-2014	<b>IPN Graduate Excellence Award</b> Integrated Program in Neuroscience	CAD 20,000
2013	<b>QBIN travel award</b>	CAD 500
2012-2013	<b>DAAD doctoral fellowship</b> Deutscher Akademischer Auslandsdienst	EUR 22,000
2012	<b>IPN Recruitment Award</b>	CAD 10,000
2012	<b>Student/Young Scientist Bursary</b> British Association of Cognitive Neuroscience	GBP 150
2011	<b>DAAD master fellowship</b>	EUR 15,147

## Ad-hoc Reviewer

Cognition and Emotion, Developmental Neuropsychology, Frontiers in Human Neuroscience, Human Brain Mapping, IEEE Transactions on Human-Machine Systems, Journal of Experimental Psychology: General, Motivation and Emotion, NeuroImage, Neurorehabilitation and Neural Repair, PLoS Biology, PLoS Computational Biology, PNAS, Psychological Review, Scientific Reports

## 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	<i>Spectral analysis of neural signals</i> , 1-hour lecture to Ph.D & Post-doctoral researchers. <a href="#">Link to video</a> MEG@McGill Comprehensive Training, McGill, Canada (March & November 2015, November 2016)
Lecture	<i>Statistics and Research methods in behavioural sciences</i> , 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: September 1, 2025