

- ✓ Email: boven.ellen@gmail.com
- ✓ Date of Birth: 8th March 1993
- ✓ Place of Birth: Ghent, Belgium

Professional interest

I am passionate about research at the intersection of experimental and computational neuroscience. In my PhD, I use artificial neural networks alongside experimental neuroscience in rodents to understand cerebrocerebellar network function during learning. I strongly believe that the interplay between modern experimental techniques and basic observations of behaviour embedded in a strong theoretical framework is crucial for advancing neuroscience and AI research

Skills



Rodent behavioral training, chemogenetics, stereotactic surgery, immunohistochemistry, computational modelling, deep learning models, data analysis with models and rodent data, data visualization, two-photon calcium imaging, confocal imaging, electrophysiology



Python, Matlab, R statistics, PyTorch, Pandas, Jupyter notebook, google colab, Matplotlib/Seaborn, LaTeX



Motivated, teamwork, academic writing, reporting and presenting

English, Dutch (both at native level), French and Spanish

Musician, guitarist, BrainInspired podcast

Ellen Boven

Education

PhD in Neuroscience 2018-2022	University of Bristol, UK
M.S. Neuroscience, magna cum laude 2015-2017	Antwerp University, BE
Erasmus Program 2014 – 2015	University of Bordeaux, FR
Bachelor in Biology 2011 – 2014	Ghent University, BE

Research positions

- PhD thesis**, advised by Rui Ponte Costa and Richard Apps | **2018 – 2022**
Cerebro-cerebellar interactions for temporal information processing
- Research assistant**, advised by Michael Häusser | **2017 – 2018**
Decision coding by layer 2/3 neurons in primary somatosensory cortex
- Master dissertation**, advised by Michele Giugliano | **2016-2017**
Intracellular calcium dynamics reflect network-level electrophysiology in a in vitro model of developing microcircuitry
- Undergraduate student**, advised by Marc Cruts | **2016**
Identification of genetic modifiers of onset age in frontotemporal dementia
- Bachelor thesis**, advised by Bart Braeckman | **2014**
The role of protein turnover during ageing in *C. elegans*

Papers

- ✓ **Boven, E.**, Pemberton, J., Chadderton, P. *et al.* Cerebro-cerebellar networks facilitate learning through feedback decoupling. [Nat Commun](https://doi.org/10.1038/s41467-022-35658-8) **14**, 51 (2023). <https://doi.org/10.1038/s41467-022-35658-8>
J. Pemberton*, **E. Boven***, P. Chadderton, R. Apps, R.P. Costa. Cortico-cerebellar networks as decoupling neural interfaces. [NeurIPS \(2021\)](#)
- ✓ L.Y. Prince, **E. Boven**, R. H. Eyono, A. Ghosh, J. Pemberton, F. Scherr, C. Clopath, R. P. Costa, W. Maass, B. A. Richards, C. Savin C, K. A. Wilmes. CCN GAC Workshop: Issues with learning in biological recurrent neural networks (2021). [NBDT](#)
- ✓ Buetfering, C., Zhang, Z., Pitsiani, M., Smallridge, J., **Boven, E.**, McElligott, S. & Hausser, M. Behaviorally relevant decision coding in primary somatosensory cortex neurons. [Nat Neurosci](https://doi.org/10.1038/s41593-022-01151-0) **25**, 1225–1236 (2022). <https://doi.org/10.1038/s41593-022-01151-0>
- ✓ **Boven E** & Giugliano M (2019). Correlating calcium dynamics with network activity in an in vitro model of a cortical microcircuitry. [Front. Neurosci. Conference Abstract: 12th National Congress of the Belgian Society for Neuroscience](#). doi: 10.3389/conf.fnins.2017.94.00071

Research Funding

- 4-year Wellcome Trust Studentship in Neural Dynamics (2018-2022)
- European Commission ERASMUS+ traineeship (2017-2018)

Conferences - organisation teams - talks

- POSTERS - 2022: FENS & COSYNE - 2021: ChampalimaudResearch Symposium, COSYNE – 2020: Neuromatch - 2019: SfN
- TEAMS – 2021: wwNeuRise seminar - 2020: postgraduate equality diversity and inclusivity representative - 2017 : CNS conference volunteer
- TALKS – 2022: Gao lab (ERASMUS MC) - 2021: Wagner lab (NIH)