

# CHRISTIAN L. EBBESEN, PhD

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## CURRENT POSITION

- 2021-Now **Deep Learning Specialist, Data Science, Lundbeck A/S**, Valby, Denmark  
Using artificial intelligence to discover and develop new ways to support and restore brain health.
- 2022-Now **Part-time Lecturer, Dept. of Neuroscience**, University of Copenhagen, Copenhagen, Denmark

## POSTDOCTORAL EXPERIENCE

- 2017-2021 **Neuroscience Institute, New York University**, New York, USA  
Oxytocin and hormonal control of neural circuits for social behavior
- 2017-2017 **Institute of Biology, Humboldt Universität zu Berlin**, Berlin, Germany  
Cortical network processing of rat social facial touch

## EDUCATION

- 2013-2017 **Ph.D. in Neurobiology** (Dr.rer.nat., *summa cum laude*)  
Bernstein Center for Computational Neuroscience / Berlin School of Mind and Brain  
Humboldt Universität zu Berlin, Berlin, Germany  
Cortical circuits underlying social and spatial exploration in rats
- 2008-2013 **M.Sc. in Physics, B.Sc. in Biophysics** (average grade: 11.4/12, M.Sc. and B.Sc. thesis: 12)  
Niels Bohr Institute, University of Copenhagen, Copenhagen, Denmark

## ACADEMIC FUNDING

- 2021-2021 **NARSAD Young Investigator Grant** (70.000 USD), Brain & Behavior Research Foundation  
Named "Families For Borderline Personality Disorder Investigator." – Stopped early b/c move to industry.
- 2017 -2021 **Novo Nordisk Foundation Postdoctoral Fellowship** (3.153.645 DKK, 4 years full postdoctoral funding)
- 2017 **Lundbeck Foundation Talent Prize** (100.000 DKK research prize for scientists under 30 yrs)
- 2017-2027 **Humboldt Postdoctoral Scholarship** (6 months full postdoctoral funding)

## AWARDS AND HONORS (accepted)

- 2020 **Trainee Professional Development Award**, Society for Neuroscience
- 2015 **Travel grant**, CSN II (Biomimetics and Neurotechnology)
- 2014 **Best Poster Award**, FENS Brain Prize Conference: Controlling Neurons, Circuits and Behavior
- 2010 **Travel grant**, Danish Acoustics Society
- 2008 **Honorable mention**, International Physics Olympiad, Isfahan University of Technology, Iran

## INVITED TALKS (accepted)

- 2020 **BARRELS XXXIII**, SfN satellite conference (online due to COVID-19)
- 2020 **Neuromatch Conference** (online due to COVID-19)
- 2019 **BARRELS XXXII**, SfN satellite conference, Feinberg School of Medicine, Northwestern University, USA
- 2019 **New Frontiers in the Study of Animal Behaviour**, Association for the Study of Animal Behaviour, University of Konstanz, Germany
- 2018 **SfN Mini-Symposium** (chair and speaker), Society for Neuroscience Annual Meeting, San Diego, USA
- 2016 **BARRELS XXIX**, SfN satellite conference, Brain and Creativity Institute, University of Southern California, USA
- 2016 **Barrel Cortex Function**, "Multidisciplinary, international meeting on sensory (sub)cortical circuits", VU University, Amsterdam, The Netherlands
- 2016 **Young Brain Researchers Conference**, Gonda Multidisciplinary Brain Research Center, Bar-Ilan Univ., Israel
- 2015 **Dept. of Neuroscience and Pharmacology Journal Club** University of Copenhagen Cph, Denmark
- 2014 **Neural Circuits Controlling Sexual Behavior** (selected "poster blitz" talk), HHMI Janelia, USA
- 2014 **Barrel Cortex Function** "Developmental, cellular and circuit mechanisms of cortical sensory information processing", Max-Planck-Institute for Experimental Medicine in Göttingen, Germany
- 2013 **BARRELS XXVI** SfN satellite conference, University of California, San Diego San Diego, USA  
*Cancelled due to COVID-19:*
- 2020 **NYU Brain Day**, Machine learning tools for analysis of social behavior, (popular science event for general audience, *cancelled*)
- 2020 **Dept. Of Neuroscience, Univ. of Copenhagen, Denmark**, April 2020 (*cancelled*)

## CONFERENCES

**Society for Neuroscience** (2020, 2019, 2018, 2017, 2016, 2014, 2013), **FENS Brain Conference: Dynamics of the brain: temporal aspects of computation** (2019), **FENS Brain conference: Controlling Neurons, Circuits and Behaviour** (2014), **BARRELS** (2020, 2019, 2018, 2016, 2014, 2013), **NIH BRAIN initiative meeting** (2020, 2019), **Society for Social Neuroscience** (2017), **FENS Forum** (2018, 2016), **COSYNE** (2021). **Barrel Cortex Function** (2016, 2014), **Nordic Neuroscience** (2019, 2017), **Sense to Synapse** (2018), **Young Brain Researchers Conference** (2016), **Cosyne workshops** (2019), **Bernstein Computational Neuroscience Conference** (2016), **Janelia Conference: Neural Circuits Controlling Sexual Behavior** (2014), **Association for the Study of Animal Behaviour Meeting** (2019)

## TEACHING EXPERIENCE

2021-Now	<b>External lecturer</b> , course: <b>Computational Neuroscience</b> (M.Sc. in Neuroscience), Dept. of Neuroscience, University of Copenhagen, Copenhagen, Denmark
2012-2017	<b>Teaching asst.</b> , course: <b>Acquisition and Analysis of Neural Data</b> (M.Sc. in Computational Neuroscience), Bernstein Center for Computational Neuroscience, Berlin
2012-2017	<b>Teaching asst.</b> , course: <b>Animal physiology</b> (B.Sc. in Biology), Humboldt Universität zu Berlin
2009-2013	<b>Teaching asst./Coach</b> , <b>International Physics Olympiad</b> in Mexico, Thailand, Estonia & Denmark

## OTHER EXPERIENCE AND SERVICE

2019-2021	<b>NYU SPiNES Selection Committee</b> (Seminars by Postdocs in Neuroscience: Extramural Series)
2019-2021	<b>NYU Neuroscience Postdoc Mentorship Committee</b> (mentoring and development)
2018	<b>Chair, organizer and speaker</b> , Minisymposium, <i>SfN</i> Neuroscience Annual Meeting 2018, San Diego
2012	<b>FELASA B certification</b> , Federation of European Laboratory Animal Science Associations

**Reviewing:** Science Advances, Cell Reports, Journal of Neuroscience Methods, Progress in Neurobiology, Journal of Motor Behavior

**Memberships:** Society for Neuroscience (2013-), New York Academy of Sciences (2017-), Danish Society for Neuroscience (2019-), Association for the Study of Animal Behaviour (2019-)

# PUBLICATIONS

## BIBLIOMETRIC SUMMARY

Published peer-reviewed publications: 13

First- & co-first authored: 11, Corresponding author: 5

H-index: 12, i10-index: 13 Citations: 599 (Google Scholar, Sept. 2022)

### Journal articles

- 2022 **Ebbesen CL** & Froemke RC (2022) Automatic mapping of multiplexed social receptive fields by deep learning and GPU-accelerated 3D videography. **Nature Communications** 13:593. doi: 10.1038/s41467-022-28153-7 (bioRxiv 2020.05.21.109629. doi: 10.1101/2020.05.21.109629).
- 2021 **Ebbesen CL** & Froemke RC (2021) Body language signals for rodent social communication. **Current Opinion in Neurobiology** 68:91-106. doi: 10.1016/j.conb.2021.01.008.
- 2019 **Ebbesen CL**, Bobrov E, Rao RP & Brecht M (2019) Highly structured, partner-sex- and subject-sex-dependent cortical responses during social facial touch. **Nature Communications** 10(1):4634. doi: 10.1038/s41467-019-12511-z. PMID: 31604919 (bioRxiv 545434. doi: 10.1101/545434).
- 2018 **Ebbesen CL**, Insanally MN, Kopec CD, Murakami M, Saiki A & Erlich JC (2018) More Than Just a “Motor”: Recent Surprises From the Frontal Cortex. **Journal of Neuroscience** 38(44):9402-13. doi: 10.1523/JNEUROSCI.1671-18.2018. PMID: 30381432
- ↑ Invited review, based on a “mini-symposium” that I organized and chaired at SfN 2018 in San Diego.
- 2017 **Ebbesen CL** & Brecht M (2017) Motor cortex – to act or not to act? **Nature Reviews Neuroscience**. 18(11):694-705. doi: 10.1038/nrn.2017.119. PMID: 29042690
- 2017 **Ebbesen CL**, Doron G, Lenschow C & Brecht M (2017) Vibrissa motor cortex activity suppresses contralateral whisking behavior. **Nature Neuroscience**. 20(1):82-89. doi: 10.1038/nn.4437. PMID: 27798633
- ↑ Previewed by: Kim J & Hires A (2017) Brake and gas pedals in motor cortex. **Nature Neuroscience**. 20(1):4-6. doi: 10.1038/nn.4461. PMID: 28025981
- 2016 **Ebbesen CL**, Reifstein ET, Tang Q, Burgalossi A, Ray S, Schreiber S, Kempter R & Brecht M (2016) Cell Type-Specific Differences in Spike Timing and Spike Shape in the Rat Parasubiculum and Superficial Medial Entorhinal Cortex. **Cell Reports**. 16(4):1005-1015. doi: 10.1016/j.celrep.2016.06.057. PMID: 27425616
- 2016 Tang[\*] Q, Burgalossi[\*] A, **Ebbesen[\*] CL**, Sanguinetti-Scheck[\*] JI, Schmidt H, Tukker JJ, Naumann R, Ray S, Preston-Ferrer P, Schmitz D & Brecht M (2016) Functional Architecture of the Rat Parasubiculum. **Journal of Neuroscience**. 36(7):2289-301. doi: 10.1523/JNEUROSCI.3749-15.2016. PMID: 26888938 [\*] Co-first author
- ↑ “Featured Article”, previewed by: Esch, T (2016) This Week in The Journal: Anatomy and Physiology of Parasubiculum. **Journal of Neuroscience**. 36(7):i.
- 2016 Reifstein ET, **Ebbesen CL**, Tang Q, Brecht M, Schreiber S & Kempter R (2016) Cell-Type Specific Phase Precession in Layer II of the Medial Entorhinal Cortex. **Journal of Neuroscience**. 36(7):2283-8. doi: 10.1523/JNEUROSCI.2986-15.2016. PMID: 26888937
- 2015 Tang Q, **Ebbesen CL**, Sanguinetti-Scheck JI, Preston-Ferrer P, Gundlfinger A, Winterer J, Beed P, Ray S, Naumann R, Schmitz D, Brecht M & Burgalossi A (2015) Anatomical Organization and Spatiotemporal Firing Patterns of Layer 3 Neurons in the Rat Medial Entorhinal Cortex. **Journal of Neuroscience**. 35(36):12346-54. doi: 10.1523/JNEUROSCI.0696-15.2015. PMID: 26354904
- 2014 Tang[\*] Q, Burgalossi[\*] A, **Ebbesen[\*] CL**, Ray S, Naumann R, Schmidt H, Spicher D & Brecht M (2014) Pyramidal and stellate cell specificity of grid and border representations in layer 2 of medial entorhinal cortex. **Neuron**. 84(6):1191-7. doi: 10.1016/j.neuron.2014.11.009. PMID: 25482025 [\*] Co-first author
- ↑ Previewed by: Savelli F & Knierim JJ (2014) Strides toward a Structure-Function Understanding of Cortical Representations of Allocentric Space. **Neuron**. 84(6):1108-1109. doi: 10.1016/j.neuron.2014.12.013. PMID: 25521370

- 2012 **Ebbesen CL** & Bruus H. (2012) Analysis of laser-induced heating in optical neuronal guidance. **Journal of Neuroscience Methods**. 209(1):168-77. doi: 10.1016/j.jneumeth.2012.02.006. PMID: 22387314
- 2012 Adams[\*] JD, **Ebbesen[\*] CL**, Barnkob R, Yang AHJ, Soh HT & Bruus H (2012) High-throughput, temperature-controlled microchannel acoustophoresis device made with rapid prototyping. **Journal of Micromechanics and Microengineering**. 22(7): 075017 [\*] **Co-first author**

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*Peer-reviewed conference proceedings*

- 2019 Schwartzberg L, Papadoyannis E, Talbot J, **Ebbesen CL**, Littman DR, Froemke RC (2019) Sickness Behavior and Gut-Brain Signaling Via Vagus Nerve in Infected Mice. **Brain Stimulation: Basic, Translational, and Clinical Research in Neuromodulation**. 12(2)e4:10 doi: 10.1016/j.brs.2018.12.017
- 2010 **Ebbesen CL**, Adams JD, Barnkob R, Soh HT & Bruus H (2010) Temperature-controlled high-throughput (1 L/h) acoustophoretic particle separation in microchannels. **Proc 14th MicroTAS**, 3-7

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*Doctoral thesis*

- 2018 **Ebbesen CL** (2018) Cortical circuits underlying social and spatial exploration in rats. **Humboldt-Universität zu Berlin, Lebenswissenschaftliche Fakultät**. doi: 10.18452/19231

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*Popular science and commentary*

- 2020 **Ebbesen CL** (2020) Flawed estimates of cognitive ability in Clark et al. Psychological Science, 2020. **PsyArXiv** 2020.06.17. doi:10.31234/osf.io/tzr8c.  
 ↑ [A submitted comment on a paper that used flawed IQ data to make claims of “cognitive disadvantage” of non-white populations. My critique – and other critiques – forced the editors/authors to retract the flawed paper.](#)
- 2019 **Ebbesen CL** (2019) Det er lige så biologisk korrekt at sige 'hen' som at sige 'rødhåret'. [The use of gender neutral pronouns does not conflict with biological science.] **Dagbladet Information** [Danish national newspaper], 21. October 2019, pp. 16-17  
 ↑ [Associated interview on national public radio: Hjerneforsker kritiserer Berlingskes chefredaktør for at "vrøvle", når hun siger, at der kun findes to køn. \[Interview about the neuroscience of sex and gender.\] Radio24syv \[National Danish public-service radio station\], kulturprogrammet AK24syv, 15. October 2019, 18:40–19:00.](#)