

Brice Bathellier

Group leader – CR1 researcher
Neuroscience Information and Complexity Unit (UNIC)
Centre National de la Recherche Scientifique (CNRS)
Bat32/33, 1 rue de la Terrasse
F-91198 Gif sur Yvette

phone : + 33 1 69 82 34 08

email : brice.bathellier@unic.cnrs-gif.fr

web : https://www.unic.cnrs-gif.fr/people/Brice_Bathellier/

Born July 7th 1980. Nationality: French

1. EDUCATION

2015 Habilitation in Neuroscience (HDR), Université Pierre et Marie Curie (UPMC)
2007 PhD in Neuroscience, Ecole Polytechnique Fédérale de Lausanne (EPFL)
2003 Master of Physics, Ecole Normale Supérieure (ENS Paris)
1998 Baccalauréat S, Mention “Très Bien”

2. ACADEMIC POSITIONS

2013- Group leader, CNRS-UNIC, Gif sur Yvette, France
2009-13 Postdoc, Rumpel lab, Institute of Molecular Pathology (IMP), Vienna, Austria
2007-08 Postdoc, Larkum lab, University of Bern, Switzerland
2003-07 PhD student, Carleton & Gerstner labs, EPFL , Lausanne, Switzerland

3. AWARDS AND FELLOWSHIPS

2012 ATIP/AVENIR program (CNRS/INSERM)
2009 Long-term postdoctoral fellowship, Human Frontier Science Program (HFSP)
2008 Best PhD thesis Prize, French Neuroscience Society
2007 Postdoc fellowship, Hoffmann-Roche Research Foundation

4. RESEARCH GRANTS

2015-18 HFSP Career Development Award (CDA)
2014 Research Grant, Fyssen Foundation
2013-16 Marie Curie Career Integration Grant (CIG)
2013-16 Human Brain Project, Workpackage 3.5.2
2013-16 Sensemaker, ANR “Retour Post-doc”
2012 Moyen Equipement - DIM Région Ile de France

5. INVITED CONFERENCE TALKS

2015 NYU Abu Dhabi Workshop on Computational and Experimental Neuroscience
2015 ENP Days, La Clusaz, France
2014 Bernstein Workshop “Population Codes: From Data Analysis to Mechanisms”

- 2013 CNS Workshop “Recent advances in experimental and computational characterization of neural assemblies”, Paris, France
- 2013 COSYNE Workshop “Furry statisticians – how rodents infer the meaningful properties of unreliable environments”, Snowbird, USA
- 2013 BRAINLINKS-BRAINTOOLS Workshop, Freiburg, Germany

6. PUBLICATIONS

Research articles (*B.B. is corresponding author)

*Bathellier B, Tee SP, Hrovat C, Rumpel S, A multiplicative reinforcement learning model capturing learning dynamics and inter-individual variability in mice. *Proc. Natl. Acad. Sci. USA*, 2013, **110**(49): 19950-5.

Moczulska KE, Tinter-Thiede J, Peter M, Ushakova L, Wernle T, Bathellier B, Rumpel S, Dynamics of dendritic spines in the mouse auditory cortex during memory formation and memory recall. *Proc. Natl. Acad. Sci. USA*, 2013, **110**(45):18315-20.

Peter M, Bathellier B, Fontinha B, Pliota P, Haubensak W, Rumpel S, Transgenic mouse models enabling photolabeling of individual neurons in vivo. *PLoS One*, 2013, **8**(4):e62132

Bathellier B, Ushakova L, and Rumpel S, Spontaneous association of sounds by discrete neuronal activity patterns in the neocortex. *Neuron*, 2012, **76**(2):435-49

*Bathellier B, Steinmann T, Barth FG and Casas J. Air motion sensing hairs of arthropods detect high frequencies at near-maximal mechanical efficiency. *Journal of the Royal Society Interface*, 2012, **9**(71):1131-43.

Bathellier B, Margrie TW, and Larkum ME. Properties of piriform cortex pyramidal cell dendrites: implications for olfactory circuit design. *The Journal of Neuroscience*, 2009, **29**(40):12641-52

*Bathellier B, Carleton A, and Gerstner W. Gamma oscillations in a non-linear regime: a minimal model approach. *Neural Computation*, 2008, **20**(12): 2973-3002

Bathellier B, Buhl DL, Accolla R and Carleton A. Dynamic ensemble odor coding in the mammalian olfactory bulb: rate versus temporal information. *Neuron*, 2008, **57**(4):586-598

Lagier S, Panzanelli P, Russo RE, Nissant A, Bathellier B, Sassoe-Pognetto M, Fritschy J.M., and Lledo PM. GABAergic inhibition at dendrodendritic synapses tunes gamma oscillations in the olfactory bulb. *Proc. Natl. Acad. Sci. USA*, 2007, **104**(17):7259-64

Accolla R, Bathellier B, Petersen C, Carleton A. Differential Spatial Representation of Taste Modalities in the Rat Gustatory Cortex. *The Journal of Neuroscience*, 2007, **27**(6):1396-404

Bathellier B, Van De Ville D, Blu T, Unser M, Carleton A. Wavelet-based multi-resolution statistics for optical imaging signals: application to automated detection of odour activated glomeruli in the mouse olfactory bulb. *Neuroimage*, 2007, **34**(3):1020-35

Bathellier B, Lagier S, Faure P, Lledo PM. Circuit properties generating gamma oscillations in a network model of the olfactory bulb. *Journal of Neurophysiology*, 2006, **95**(4):2678-91

Bathellier B, Barth FG, Albert JT, Humphrey JA. Viscosity-mediated motion coupling between pairs of trichobothria on the leg of the spider *Cupiennius salei*. *Journal of Comparative Physiology A*. 2005, **191**(8):733-46.

Book chapters

Bathellier B, Gschwendt O, and Carleton A. Temporal coding in olfaction. *The Neurobiology of Olfaction*, Ed. Menini A, CRC Press, 2010, p. 329-348

Conference proceedings

Van De Ville D, Bathellier B, Carleton A, Blu T, Unser M, `Wavelet-based statistical analysis for optical imaging in mouse olfactory bulb, IEEE International Symposium on Biomedical Imaging (ISBI'07), (Washington, USA), April 2007.

Bathellier B, Carleton A, Gerstner W, Appréhender simplement les oscillations gamma dans un régime non linéaire, Neurocomp Conference, pp. 116-119 (Pont à Mousson, France), Nov 2006.

Van De Ville D, Bathellier B, Accolla R, Carleton A, Blu T, Unser M, Wavelet-based detection of stimulus responses in time-lapse microscopy, IEEE ICASSP, special session Image formation and analysis for molecular and cellular imaging, pp. V-1161-V-1164, (Toulouse, France), May 2006.