**CURRICULUM VITAE**

## PERSONAL INFORMATION

Name: Lucia Wittner
Date and place of birth: 1975., Budapest, Hungary
Nationality: Hungarian
Contact: Research Center for Natural Sciences, Institute of Cognitive Neuroscience and Psychology
Magyar tudósok krt. 2. 1117 Budapest, Hungary
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## EDUCATION

| | |
|---|---|
| Ph.D.: | Neurosciences, 2004., Semmelweis University, Budapest, Hungary<br>Thesis title: Hippocampal interneurons in human temporal lobe epilepsy: differentiated changes of perisomatic and dendritic inhibition<br>Supervisors: T. F. Freund and Zs. Maglóczky<br>Department of Functional Neuroanatomy, Institute of Experimental Medicine, Hungarian Academy of Sciences |
| Master's degree: | Biology (specialized in cell-, developmental and neurobiology) and French translator specialized in biology, 1999., Biology teacher, 2000., Eötvös Loránd University, Faculty of Sciences, Budapest, Hungary |
| Secondary school: | Kölcsey Ferenc Gimnázium, 1994. French-Hungarian two educational language class, Budapest, Hungary |

## LANGUAGE EXAMS

English, intermediate level, specialization in natural sciences, 1999.
French, advanced level, 1991, 1993; specialization in natural sciences, 1998.
D. A. L. F. (Diplôme Approfondi de Langue Française), 1993, 1997
German, intermediate level, 1994.

## RESEARCH EXPERIENCE

2012-present Senior research fellow in the Institute of Cognitive Neuroscience and Psychology, Research Center for Natural Sciences, Hungarian Academy of Sciences, Budapest, Hungary

2010-2011 Senior research fellow in the Institute for Psychology, Hungarian Academy of Sciences, Department of Psychophysiology, Budapest, Hungary

2006-2010 Research fellow in the Institute for Psychology, Hungarian Academy of Sciences, Department of Psychophysiology, Budapest, Hungary

2004-2006 Postdoctoral position in the laboratory of R. Miles, Institut National de la Santé et de la Recherche Médicale (INSERM) U739, Université Paris VI., Centre Hospitalier Universitaire Pitié-Salpêtrière, Paris, France

2002-2004 Ph.D. student in Neurosciences, Semmelweis University, Budapest, Hungary, Department of Functional Neuroanatomy, Institute of Experimental Medicine, Hungarian Academy of Science

2001- 2002 Research associate in the laboratory of Gy. Buzsáki, in the Center for Molecular and Behavioral Neuroscience, Rutgers the State University of New Jersey, USA

1999-2001 Ph.D. student in Neurosciences, Semmelweis University, Budapest, Hungary, Department of Functional Neuroanatomy, Institute of Experimental Medicine, Hungarian Academy of Science

1996-1999 Student research assistant, Department of Functional Neuroanatomy, Institute of Experimental Medicine, Hungarian Academy of Science

**AWARDS / FELLOWSHIPS**

2009-2010 Balaton Project Fellowship, French-Hungarian Government, F16/2008
2008-2011 Bolyai Fellowship of the Hungarian Government, Budapest, Hungary
2008 FENS 2008, Geneva, Switzerland, IBRO Travel grant
2007-2008 Balaton Project Fellowship, French-Hungarian Government, F38/2006
2006 FENS 2006, Vienna, Austria, FENS Travel grant
2005 NATO Short Term Research Fellowship, Budapest, Hungary 4024/NATO/03
2004-2006 INSERM Poste vert, Postdoctoral Fellowship of the French Government, Paris, France
2004 FENS 2004, Lisbon, Portugal, FENS Travel grant
2002 FENS 2002, Paris, France, FENS Travel grant
2002 FENS Winter School Kitzbühel, Austria, Semmelweis University Ph.D. School travel grant, Budapest, Hungary
2002 Best Bursary Award, 5th European Congress of Epileptology, Madrid, Spain
2000 FENS 2000, Brighton, United Kingdom, Pro renovanda cultura hungariae travel grant, Budapest, Hungary
1999-2000 Scholarship of the Hungarian Government (Köztársasági Ösztöndíj), Budapest, Hungary
1999 The Graduating Thesis won the prize of Sigma Aldrich Ltd. on the National Scientific Congress for Undergraduate Students (OTDK), Debrecen, Hungary

**PARTICIPATION IN RESEARCH GRANTS**

2016-2020 OTKA K119443, Hungarian Government, Hungary, Principal Investigator: Lucia Wittner
2016-2019 OTKA PD121123, Hungarian Government, Hungary, Principal Investigator: Kinga Tóth
2013-2017 NeuroSeeker EU FP7 Integrated Project, EU, Principal Investigator: Patrick Ruther
2012-2015 NKTH-ANR Multisca, French-Hungarian Governments, Hungary, Principal Investigator: Balázs Rózsa
2010-2013 NKTH-ANR Neurogen, French-Hungarian Governments, Hungary, Principal Investigator: László Acsády
2010-2013 OTKA K81357, Hungarian Government, Hungary, Principal Investigator: István Ulbert
2009-2013 OTKA PD77864 Hungarian Government, Hungary, Principal Investigator: Lucia Wittner
2006-2009 NeuroProbes EU FP6 Integrated Project, EU, Principal Investigator: Herc P. Neves
2006-2008 ETT135/2006, Ministry of Health, Hungary, Principal Investigator: István Ulbert
2005-2008 OTKA T049122, Hungarian Government, Hungary, Principal Investigator: István Ulbert
2005-2008 RET05/2004 Hungarian Government, Hungary, Principal Investigator: Tamás Freund
2005-2007 ANR INSERM U739, French Government, Principal Investigator: Richard Miles
2000-2003 OTKA T032251, Hungarian Government, Hungary, Principal Investigator: Tamás Freund

**NEUROSCIENCE SCHOOLS ATTENDED**

September 2003: IBRO/FENS Summer school, Dubrovnik/Zagreb, Croatia, Development and Plasticity of the Human Cerebral Cortex
December 2002: FENS/Hertie Winter school, Kitzbühel, Austria, Dynamic aspects of brain functions: Methodologies, concepts, models
August 2002: IBRO Summer school, Prague, Czech Republic, Contemporary Approaches to the Study of CNS Functions

**CONFERENCE ORGANIZATION**

NeuroProbes EU FP6 project, 6$^{th}$ General Meeting, Budapest, Hungary, 2008.

**PUBLICATIONS**

Hagler DJ Jr, Ulbert I, **Wittner L**, Erőss L, Madsen JR, Devinsky O, Doyle W, Fabó D, Cash SS, Halgren E. (2018) Heterogeneous Origins of Human Sleep Spindles in Different Cortical Layers. J Neurosci. 2018 Mar 21;38(12):3013-3025. doi: 10.1523/JNEUROSCI.2241-17.2018. Epub 2018 Feb 15. (IF in 2017:5.97)

Tóth K, Hofer KT, Kandrács A, Entz L, Bagó A, Erőss L, Jordán Z, Nagy G, Sólyom A, Fabó D, Ulbert I, **Wittner L.** Hyperexcitability of the network contributes to synchronization processes in the human epileptic neocortex. (2018) J Physiol (London) 2018 Jan 15;596(2):317-342. doi: 10.1113/JP275413. Epub 2017 Dec 28. (IF in 2017: 4.54), Q1

Cserpán D, Meszéna D, **Wittner L**, Tóth K, Ulbert I, Somogyvári Z, Wojcik DK. Revealing the distribution of transmembrane currents along the dendritic tree of a neuron from extracellular recordings (2017) eLife 6: Paper e29384. DOI: 10.7554/eLife.29384.001 IF in 2016: 7.725, Q1

**Wittner L** and Maglóczky Z (2017) Synaptic Reorganization of the Perisomatic Inhibitory Network in Hippocampi of Temporal Lobe Epileptic Patients. BioMed Res Int Volume 2017, Article ID 7154295, 13 pages https://doi.org/10.1155/2017/7154295 (IF in 2015: 2.134) Q2

Fiáth R, Beregszászi P, Horváth D, **Wittner L**, Aarts AA, Ruther P, Neves HP, Bokor H, Acsády L, Ulbert I. (2016) Large-scale recording of thalamocortical circuits: in vivo electrophysiology with the two-dimensional electronic depth control silicon probe. J Neurophysiol. 2016 Nov 1;116(5):2312-2330. doi: 10.1152/jn.00318.2016. Epub 2016 Aug 17. (IF: 2.396) Q1

Fiáth R, Kerekes BP, **Wittner L**, Tóth K, Beregszászi P, Horváth D, Ulbert I. (2016) Laminar analysis of the slow wave activity in the somatosensory cortex of anesthetized rats. Eur J Neurosci. 2016 Aug;44(3):1935-51. doi: 10.1111/ejn.13274. Epub 2016 Jun 9. (IF: 2.941) Q1

Karlócai MR, **Wittner L**, Tóth K, Maglóczky Zs, Katarova Z, Rásonyi Gy, Erőss L, Czirják S, Halász P, Szabó G, Payne JA, Kaila K, Freund TF. (2015) Enhanced expression of potassium-chloride cotransporter KCC2 in human temporal lobe epilepsy. Brain Struct Funct. 2016 Sep;221(7):3601-15. doi: 10.1007/s00429-015-1122-8. Epub 2015 Oct 1. (IF: 4.698) Q1

Hofer KT, Kandrács Á, Ulbert I, Pál I, Szabó C, Héja L, **Wittner L**. (2015) The hippocampal CA3 region can generate two distinct types of sharp wave-ripple complexes, in vitro. Hippocampus. 2015 Feb;25(2):169-86. (IF: 4.162) Q1

Kerekes BP, Tóth K, Kaszás A, Chiovini B, Szadai Z, Szalay G, Pálfi D, Bagó A, Spitzer K, Rózsa B, Ulbert I, **Wittner L** (2014) Combined two-photon imaging, electrophysiological, and anatomical investigation of the human neocortex in vitro. Neurophotonics 1(1) 011013 (Jul-Sep 2014). (IF: 0)

Dombovári B, Fiáth R, Kerekes BP, Tóth E, **Wittner L**, Horváth D, Seidl K, Herwik S, Torfs T, Paul O, Ruther P, Neves H, Ulbert I (2014) In vivo validation of the electronic depth control probes. Biomed Tech (Berl). 2014 Aug;59(4):283-9. (2014) (IF:2.425)

Miles R, Blaesse P, Huberfeld G, **Wittner L**, Kaila K (2012) Chloride homeostasis and GABA signaling in temporal lobe epilepsy. In Jasper's Basic Mechanisms of the Epilepsies, 4th edition Oxford University Press 2012. Eds: Jeffrey L Noebels, Massimo Avoli, Michael A Rogawski, Richard W Olsen, and Antonio V Delgado-Escueta.

Hangya B, Tihanyi BT, Entz L, Fabó D, Erőss L, **Wittner L**, Jakus R, Varga V, Freund TF, Ulbert I (2011) Complex Propagation Patterns Characterize Human Cortical Activity during Slow-Wave Sleep. J Neurosci. 2011 Jun 15;31(24):8770-9. (IF: 7.115)

Motti D, Le Duigou C, Eugène E, Chemaly N, **Wittner L,** Lazarevic D, Krmac H, Marstrand T, Valen E, Sanges R, Stupka E, Sandelin A, Cherubini E, Gustincich S, Miles R. (2010) Gene expression

analysis of the emergence of epileptiform activity after focal injection of kainic acid into mouse hippocampus. Eur J Neurosci. 2010 Oct;32(8):1364-79. (IF: 3.658)

Cash SS, Halgren E, Dehghani N, Rossetti AO, Thesen T, Wang CM, Devinsky O, Kuzniecky R, Doyle W, Madsen JR, Eross L, Halasz P, Karmos G, Csercsa R, **Wittner L**, Ulbert I. Response to Comment on "The Human K-Complex Represents an Isolated Cortical Down-State". Science 330:(6000) p. 35-b, (2010).

Csercsa R, Dombovári B, Fabó D, **Wittner L**, Erőss L, Entz L, Sólyom A, Rásonyi G, Szűcs A, Kelemen A, Jakus R, Juhos V, Grand L, Magony A, Halász P, Freund TF, Maglóczky Z, Cash SS, Papp L, Karmos G, Halgren E, Ulbert I. (2010) Laminar analysis of slow wave activity in humans. Brain. 2010 Sep;133(9):2814-29. (IF: 9.232)

Grand L, **Wittner L**, Herwik S, Göthelid E, Ruther P, Oscarsson S, Neves H, Dombovári B, Csercsa R, Karmos G, Ulbert I. (2010) Short and long term biocompatibility of NeuroProbes silicon probes. J Neurosci Methods. 2010 Jun 15;189(2):216-29. (IF: 2.295)

Cash SS, Halgren E, Dehghani N, Rossetti AO, Thesen T, Wang C, Devinsky O, Kuzniecky R, Doyle W, Madsen JR, Bromfield E, Erőss L, Halász P, Karmos G, Csercsa R, **Wittner L**, Ulbert I. (2009) The human K-complex represents an isolated cortical down-state. Science. 2009 May 22;324(5930):1084-7. (IF: 29.747)

**Wittner L**, Huberfeld G, Clémenceau S, Erőss L, Dezamis E, Entz L, Ulbert I, Baulac M, Freund TF, Maglóczky Z, Miles R. (2009) The epileptic human hippocampal cornu ammonis 2 region generates spontaneous interictal-like activity in vitro. Brain. 2009 Nov;132(Pt 11):3032-46. (IF: 9.49)

Aarts AA, Neves HP, Ulbert I, **Wittner L**, Grand L, Fontes MA, Herwik S, Kisban S, Paul O, Ruther P, Puers RP, Van Hoof C. (2008) A 3D slim-base probe array for in vivo recorded neuron activity. Conf Proc IEEE Eng Med Biol Soc. 2008;2008:5798-801. (IF:1.466)

Huberfeld G, Clemenceau S, Cohen I, Pallud J, **Wittner L**, Navarro V, Baulac M, Miles R. (2008) Epileptiform activities generated in vitro by human temporal lobe tissue. Neurochirurgie 54 (3), pp. 148-158 (IF: 0.355)

D. Fabó, Zs. Maglóczky, **L. Wittner,** Á. Pék, L. Erőss, S. Czirják, J. Vajda, A. Sólyom, G. Rásonyi, A. Szűcs, A. Kelemen, V. Juhos, L. Grand, B. Dombovári, P. Halász, T. F. Freund, E. Halgren, Gy. Karmos, I. Ulbert (2008) Properties of in vivo interictal spike generation in the human subiculum. Brain 2008 131:485-499 (IF: 9.603)

**L. Wittner** and R. Miles (2007) Factors defining a pacemaker region for synchrony in the hippocampus. Journal of Physiology (London) 584(Pt 3):867-83. (IF: 4.58)

G. Huberfeld*, **L. Wittner***, S. Clémenceau, M. Baulac, K. Kaila, R. Miles and C. Rivera (2007) Perturbed chloride homeostasis and GABAergic signalling in human temporal lobe epilepsy. Journal of Neuroscience 27(37):9866-73. (IF: 7.49) * equally contributing authors

**L. Wittner**, D. A. Henze, L. Záborszky and Gy. Buzsáki (2007) Three-dimensional reconstruction of the axon arbor of a CA3 pyramidal cell recorded and filled in vivo. Brain Structure & Function 212:75–83

K. Tóth, **L. Wittner**, Z. Urbán, W. K. Doyle, Gy. Buzsáki, R. Shigemoto, T. F. Freund and Zs. Maglóczky (2007) Morphology and synaptic input of substance P receptor-immunoreactive interneurons in control and epileptic human hippocampus. Neuroscience 144 (2): 495-508. (IF: 3.352)

**L. Wittner**, D. A. Henze, L. Záborszky and Gy. Buzsáki (2006) Hippocampal CA3 pyramidal cells selectively innervate aspiny interneurons. European Journal of Neuroscience 24(5):1286-1298. (IF: 3.709)

**L. Wittner** (2006) Interneurons of the hippocampus in temporal lobe epilepsy (in French) Epilepsie pratique 2006 10, 11 p1-5.

**L. Wittner** (2006) Temporal seizures. Epileptic activity and hypotheses of physiopathology (in French) Neurologies, 2006 Octobre Vol. 9, n° 90. p557-559.C.

Le Duigou, **L. Wittner**, L. Danglot, and R. Miles (2005) Effects of focal injection of kainic acid into the mouse hippocampus in vitro and ex vivo. Journal of Physiology (London) 569 (3): 833-847 (IF: 4.272)

**L. Wittner**, L. Erőss, S. Czirják, P. Halász, T. F. Freund and Zs. Maglóczky (2005) Surviving CA1 pyramidal cells receive intact perisomatic inhibitory input in the human epileptic hippocampus. Brain 128:138-152 (IF: 7.535)

**L. Wittner**, L. Erőss, Z. Szabó, Sz. Tóth, S. Czirják, P. Halász, T.F. Freund and Zs. Maglóczky (2002) Synaptic reorganization of calbindin-positive neurons in the human hippocampal CA1 region in temporal lobe epilepsy. Neuroscience 115 (3):961-978. (IF: 3.457)

D. A. Henze, **L. Wittner** and Gy. Buzsáki (2002) Single granule cells can reliably discharge targets in the hippocampal CA3 network in vivo. Nature Neuroscience 5(8):790-5. (IF: 14.857)

Y. Fischer, **L. Wittner**, T. F. Freund, and B. H. Gähwiler (2002) Simultaneous activation of gamma and theta network oscillations in hippocampal slice cultures. Journal of Physiology 539 (3):857-868. (IF: 4.65)

**L. Wittner**, Zs. Maglóczky, Zs. Borhegyi, P. Halász, Sz. Tóth, L. Erőss, Z. Szabó and T.F. Freund (2001) Preservation of perisomatic inhibitory input of granule cells in the epileptic human dentate gyrus. Neuroscience 108 (4):587-600. (IF: 3.219)

Maglóczky Zs., **Wittner L.**, Borhegyi Zs., Halász P., Vajda J., Czirják S., Freund T. F. (2000) Changes in the distribution and connectivity of interneurons in the epileptic human dentate gyrus. Neuroscience 96 (1):7-25. (IF: 3.563)

**INVITED LECTURES**

L. Wittner (2018) Célirányos gondolkodásmód a tudományos kutatásban. Magyar Tudomány Ünnepe, Budapest, Hungary, MTA TTK, 18/11/2018

L. Wittner (2018) Investigation of epileptic activity in the human cortex, in vitro. First French-Hungarian forum of scientific research, Budapest, Hungary, French Institute, 28/09/2018

L. Wittner (2018) Ma philosophie scientifique. Ma philosophie scientific meeting for Richard Miles, Paris, France, ICM, 14-15/06/2018

L. Wittner, K. Tóth, Á. Kandrács, Cs. Szabó, A. Bagó, L. Erőss, L. Entz, T.F. Freund and I. Ulbert (2012) Synchronous population activity in the human epileptic and non-epileptic neocortex in vitro. Seminars of the Institut du Fer a Moulin, 22/11/2012, Paris, France

L. Wittner (2011) Interictal activity in the human hippocampal formation. 13$^{th}$ Conference of the Hungarian Neuroscience Society, 21/01/2011, Budapest, Hungary

L. Wittner (2010) Spontaneous interictal activity in human neocortical and hippocampal tissue, in vitro. Annual Meeting of the Hungarian Epilepsy League, 17/06/2010, Kecskemét, Hungary

L. Wittner, Zs. Borhegyi, L. Erőss, S. Czirják, P. Halász, T. F. Freund and Zs. Maglóczky (2006) Synaptic reorganization of perisomatic and dendritic inhibition in human temporal lobe epilepsy revealed by electron microscopy. 2nd Croatian Congress on Microscopy with International Participation, Topusko, Croatia

L. Wittner (2004) Preservation and ultrastructure of postoperative epileptic and post mortem control tissue. Scientific Day of Club EpilepsieS, 15/10/2004, Paris, France

L. Wittner, Zs. Borhegyi, P. Halász, S. Czirják, L. Eross, T. F. Freund and Zs. Maglóczky (2002) Preservation of perisomatic inhibitory input of CA1 pyramidal cells and dentate granule cells in the hippocampus of patients with temporal lobe epilepsy. 5th European Congress on Epileptology, Madrid, Spain, Epilepsia 43, Suppl. 8. 014.