

CV – ANITA LÜTHI

1. CURRICULUM VITAE - ANITA LÜTHI

A Personal Information

Name: Anita Lüthi, PhD

Date and place of birth: November 28, 1968; Bern, Swiss

Nationality

Marital status: married to Dr. U.A. Wiedemann
Physicist; Theory Group, CERN
1 son, born August 31, 2002

Language skills: Fluent, Taught in: German, English, French, Italian



B Scientific Experience

April 2014- ASSOCIATE PROFESSOR, with tenure, University of Lausanne
2009-2014 ASSISTANT PROFESSOR, tenure-track, University of Lausanne
2008-2009 ASSISTANT PROFESSOR, CLOETTA FOUNDATION, University of Lausanne
2000-2007 ASSISTANT PROFESSOR non-tenure track at the Biozentrum, University of Basel
1996-2000 POSTDOCTORAL STUDIES at Yale University
1992-1995 PhD THESIS at the Brain Research Institute, University/ETH Zürich

C Awards, Honors and Fellowships in the past five years

2015 As a PhD Student Mentor: Young Investigator Award of the Swiss Physiological Society
2014 Marie Heim Vögtlin Fellowship to postdoctoral collaborator Dr. Zita Rovó
2012 Sponsor's Award of the Swiss Society for Sleep Research, Sleep Medicine and Chronobiology for
the article by Astori et al., published in PNAS in 2011
2011 Ambizione Award to postdoctoral collaborator Dr. Simone Astori
2010 As a PhD Student Mentor: Faculty Prize, Asher-Hess Prize of the Swiss Physiological Society
2009 As a PhD Student Mentor: Prix Biaggi de Blasys, Asher-Hess Prize of the Swiss Physiological Society

D Related professional activities in the past five years

Professional Societies: 2015- Board Member of the Swiss Society for Neuroscience SSN; 2015- Board Member of the Swiss Society for Sleep Research, Sleep Medicine and Chronobiology SSSSC; 2013-2015 President of the Swiss Physiological Society SPS; Membership American Society for Neuroscience, SSN, SSSSC

Editorial Board Service: 2006-2013: Associate Editor of The Journal of Neuroscience, Guest Editor of a series of review articles on Sleep Function in European Journal of Neuroscience

Manuscript reviewing activity: Brain, British Journal of Pharmacology, Cerebral Cortex, Current Biology; European Journal of Neuroscience, Frontiers in Computational Neuroscience, Journal of Neurophysiology, The Journal of Neuroscience, Journal of Physiology Lond., Nature Communications, Nature Neuroscience, Nature Reviews Neuroscience, Nature Scientific Reports, Neuron, Neuroscience, Pflügers Archiv, PLOS One, Progress in Neurobiology, Sleep

Grant reviewing activity: Belgian Interuniversity Attraction Pole Programme, Boehringer Ingelheim Fonds; Deutsches Bundesministerium für Bildung und Forschung, Italian Telethon Foundation, Leenaards Foundation Arc Lémanique, Swiss National Science Foundation, Wellcome Trust, Human Frontiers Science Program

Committee Memberships: External member of APM committee of the SNSF; AERES (CNRS) committee for the Evaluation of the Lyon Neuroscience Center; External Expert in the Berufungskommission for the Succession of Prof. Schwab, UNIZH; Reviewer for a Faculty Position in Neurology, UNIBE; External Expert for two Promotions (HDR) at the CNRS, France; and at University of Surrey, UK

Conference Organization: Member of the Organizing Committee of a Satellite Symposium at FENS2008; Organization of the UNIL-DNF Inaugural Symposium in Spring 2014; Giessbach Meeting 2015; LS2 Meeting 2016; SSN Meeting 2016

E Current Group and Supervision of PhD Students in the past five years

Postdoctoral collaborators: Drs. Simone Astori (2009-2015), Laura Fernandez (2012-); Stéphanie Maret (2010-2011); Valérie Hinard (2010-2012, Member of Prof. Tafti's lab, CIG, UNIL, collaborative work); Zita Rovó (2015-2016)

PhD Students: Ralf Wimmer (2008-2012), Martina Perin (2009-2014), Zita Rovó (Sciex Exchange student with Prof. L. Acsády, Budapest, Spring 2011-2012), Chiara Pellegrini (2012-); Sandro Lecci (2013-); Gil Vantomme (2015-)

Master Students: Gil Vantomme (2014); Sandro Lecci (2012); Lysiann Kalmbach (2011), Cédric Dumont (2010); Jing Fan (2010); Giancarlo Spano (2010)

F Funding of research in the past three years

1. Swiss National Science Foundation, Individual Research Grant, No. 31003A_146244

Title: The sleep spindle: from molecular pacemakers to arousal control

Duration: April 2013-March 2016

Sum: 688'960 CHF

2. Marie Heim Vögtlin Postdoctoral Fellowship to Dr. Zita Rovó, PMPDP3_158352/1

Title: Subcortical modulation of attentional mechanisms

Duration: February 2015-February 2016

Sum: 86'180 CHF

3. SciEX, Scientific Exchange Program with New European Member Countries

Host mentor: Anita Lüthi

Home mentor: Laszlo Acsády, Institute of Experimental Medicine, Hungarian Academy of Sciences, Budapest

Duration: October 2011-May 2012

Sum: ca. 42'000 CHF

4. Ambizione Grant to Dr. Simone Astori

Duration: January 2012-December 2014

Sum: 372'100 CHF

5. Jean-Falk Vairant pre-doctoral fellowship to Zita Rovó

Duration: June-July 2012

Sum: 7'000 CHF

6. Travel Grants from the Swiss Physiological Society, Swiss Society for Neuroscience and the Lemanic Neuroscience Program

G International and National Invitations for Seminars and Symposia Presentations in the past five years

2015: Symposium at the Society for Neuroscience Meeting, Chicago; Symposium at WorldSleep, Istanbul; UCL London; University of Tübingen; Symposium on Thalamocortical Mechanisms, Janelia Research Campus, USA; University of Zürich; NCCR Transcure, Bern; Swiss Chronobiology Meeting, Fribourg

2014: University of Cardiff, UK; University of Liège, Belgium; University of Innsbruck, Austria; Inauguration of the ZEN, Bern; SSSSC Meeting, Lucerne; DNF Symposium, Lausanne

2013: Ludwig-Maximilians-Universität, München; IDIBAPS, Barcelona; Society for Neuroscience Satellite Symposium: Barrels XXVI, La Jolla, USA; FENS-IBRO Hertie Winter School, Obergurgl, Austria

2012: Tel Aviv University, Tel Aviv; Institute of Experimental Medicine, Budapest; CNRS-INSERM and University of Montpellier; Centre de Recherche en Neurosciences, University of Lyon

2011: Honorary Symposium for Prof. Irene Tobler, University of Zürich; Meeting of the Neurosciences Françaises, Marseille, France; "Interuniversity attraction poles" meeting of the Belgian Neurosciences, Ghent; University of Liège

H Teaching

School of Biology, UNIL: 16 h/ y on Basics of Excitatory Transmission; Motor Systems, Sleep for BSc2, Bsc3 and MSc; Transdisciplinary Techniques (2h)

School of Medicine, UNIL: 1st year: 16 h/y Basics of Electrical Excitability and Synaptic Transmission; 2nd year: 11 h/ y on Visual System, Oculomotor System; Optional Course (2h)

I Administrative Duties

- Responsible of the Local Animal House (2000 cages), which involves its financial, personnel and sanitary control, and the relay between users and veterinary authorities
- Responsible of the new 6-room Behavioral Facility at the DNF (together with Prof. J.P. Hornung), which we set-up in 2014-2015

2. PUBLICATION LIST (2010-2015)

1) Original, peer-reviewed articles

* most important

More extensive publication list: see http://www-ibcm.unil.ch/luthi_publications_1_en.html and http://www-ibcm.unil.ch/luthi_publications_2_en.html

- 1) Longordo F, Fan J, Steimer T, Kopp C, **Lüthi A** (2011) Do mice habituate to “gentle handling”? A comparison of resting behaviour, corticosterone levels and synaptic function in handled and disturbed C57Bl/6J mice. *Sleep* 34: 679-81
- *2) Astori S, Wimmer RD, Prosser HM, Corti C, Corsi M, Liaudet N, Volterra A, Franken P, Adelman JP, **Lüthi A** (2011) The Ca_v3.3 calcium channel is the major sleep spindle pacemaker in thalamus. *Proc Natl Acad Sci USA* 108: 13823-8
- 3) Cazzin C, Piccoli L, Massagrande M, Garbati N, Michielin F, Knaus HG, Ring CJ, Morrison AD, Merlo-Pich E, Rovó Z, Astori S, **Lüthi A**, Corti C, Corsi M (2011) rKv1.2 overexpression in the central medial thalamic area decreases caffeine-induced arousal. *Genes Brain Behav* 10: 817-27
- *4) Wimmer RD, Astori S, Bond C, Rovó Z, Chatton JY, Adelman JP, Franken P, **Lüthi A** (2012) Sustaining sleep spindles through enhanced SK2 channel activity consolidates sleep and elevates arousal threshold. *J Neurosci*, 32:13917-28
- 5) Astori S, **Lüthi A** (2013) Synaptic plasticity at intrathalamic connections via NR2B-NMDARs and Ca_v3.3 T-type Ca²⁺ channels. *J Neurosci* 33:624-30
- *6) Rovó Z, Mátyás F, Barthó P, Slézia A, Lecci S, Pellegrini C, Astori S, Hangya B, **Lüthi A***, Acsády L* (2014) Phasic, non-synaptic GABA-A receptor-mediated inhibition entrains thalamocortical oscillations. *J Neurosci* 34:7137-7147 *shared senior authorship
- 7) Perin M, Longordo F, Massonnet C, Welker E, **Lüthi A** (2014) Diurnal inhibition of NMDA-EPSCs at rat hippocampal mossy fibre synapses through orexin-2 receptors. *J Physiol* 592:4277-4295
- *8) Pellegrini C, Lecci S, **Lüthi A**, Astori S (2015) Suppression of sleep spindle rhythmogenesis in mice with deletion of Ca_v3.2 and Ca_v3.3 T-type Ca²⁺ channels. *Sleep*, resubmitted on Sep 28 after minor revisions
- *9) Lecci S, Fernandez LMJ, Wimmer RD, Chatton JYC, **Lüthi A** (2015) Infra-slow neural and cardiac fluctuations predict behavioral arousability during NREM sleep. Manuscript ready for submission, to be finalized with human data from the Born lab, Tübingen

2) Review articles and Comments

- 1) **Lüthi A** (2013) The adenosine story goes ionic: Ca_v2.1-type Ca²⁺ channels identified as effectors of adenosine's somnogenic actions. *Sleep* 36: 13-4
- 2) **Lüthi A** (2013) Sleep spindles: where they come from, what they do. *The Neuroscientist* 20: 243-256
- *3) Astori S, Wimmer R, **Lüthi A** (2013) Manipulating sleep spindles - expanding views on sleep, memory, and disease. *Trends Neurosci* 36: 738-748

3) Articles for a non-specialist audience

- 2011 CHUV Magazine, “Le mystère du sommeil”
 2015 Le Temps, “Le sommeil révèle peu à peu ses secrets”
 2015 Uniscopé, “Une vie dans les bras de Morphée”

4) Other important publications

Society for Neuroscience 2015 posters

C. PELLEGRINI, L. M. J. FERNANDEZ, A. LÜTHI, S. ASTORI Modulation of molecular substrates of thalamic rhythmogenesis through synaptic NMDA receptors.

S. LECCI, L. M. J. FERNANDEZ, R. D. WIMMER, J.-Y. CHATTON, A. LÜTHI Infra-slow neural and cardiac fluctuations predict behavioral arousability during mouse NREM sleep.

L. M. J. FERNANDEZ, A. LÜTHI Distinct neural and cardiac parameters define the intermediate sleep state in mouse.

FENS 2014 Posters

S. ASTORI, A. LÜTHI Time-of-day-dependent changes in NMDAR subunits at intrathalamic synapses.
L. M. J. FERNANDEZ, A. LÜTHI Diversity of Sleep Spindle Rhythms in Local Areas of the Mouse Brain.

S. LECCI; WIMMER R.D., CHATTON J.-Y., A. LÜTHI Acoustic stimulation as a tool for assessing sleep quality in mice.

C. PELLEGRINI, A. LÜTHI, S. ASTORI Modulation of molecular substrates of thalamic sleep rhythms through synaptic NMDA receptors.

Society for Neuroscience 2013 posters

S. ASTORI, A. LÜTHI Time-of-day dependent changes in NMDAR subunits and effects on synaptic plasticity at intra-thalamic connections.

L. M. J. FERNANDEZ, A. LÜTHI Exploring NREM sleep rhythms in the cortex of head-restrained mice.

C. PELLEGRINI, A. LÜTHI, S. ASTORI Recruitment of CaV3.2 channels through GluN2C-containing NMDA receptors in the nucleus Reticularis thalami.