

# Curriculum vitae, Klas Kullander

## A. Professional preparation

PhD in Medicine: Uppsala University 1997-05-22, Thesis title: *Evolutionary and structure-function studies of neurotrophins*, supervisor Prof. Ted Ebendal

Postdoctoral training: EMBL, Heidelberg 1998-01-15 to 2001-12-30,  
In the laboratory of Prof. Rüdiger Klein

Associate Professor: Neuroscience, 2005, Uppsala University

Professor: Developmental Genetics, 2010, Uppsala University

## B. Appointments

Current position: Professor, Unit head, Group leader, D. of Neuroscience, Unit of Developmental Genetics, Uppsala University,

Previous positions: Group leader, D. medical biochemistry, Gothenburg U. 2003-2004  
Associate Director, Transgene center, AstraZeneca 2002-2003  
Scientist, Astra, Lund, Research Department 1997

## C. Fellowships/awards:

EMBO fellowship (2 years) 1997  
Marie Curie fellowship (2 years) 1998-2000  
Fernström award for young and promising scientists 2006  
Researcher position Swedish Med. Res. Coun. 2003-2009  
Researcher position Royal Swedish Soc. Sci. (5 years) 2008-2013  
Göran Gustafsson Prize 2009 (4,5 MSEK)

## D. Postdoc supervision:

Dr. Åsa Wallén-Mackenzie (2003-2008, now PI), Dr. Anna Vallstedt (2006-2008), Dr. Malin Lagerström (2007-2011, now PI), Dr. Hanna Wootz (2007-2012), Dr. Lina Emilsson (2007-2012, now PI), Dr. Katarina Leao (2008-2012, now PI), Dr. Christiane Peuckert (2008-2014), Dr. Tomas Sandberg (2009-2011), Dr. Johan Zelano (2010-2013), Dr. Anne-Sophie Fröjmark (2011), Dr. Martina Blunder (2011-2015), Dr. Hanna Pettersson (2012-2015), Jörgen Jonsson (2013-2016), Amilcar Reis (2013-2015), Fabio Caixeta (2014-2016), Henrik Boije (2014-2015), Ernesto Restrepo (2014-2016), Jennifer Vieillard (2016-), Vladislav Sekulic (2017-)

## E. PhD students:

Henrik Gezelius (2005-2009), Nadine Rabe (2005-2010), Anders Enjin (2006-2011), Fatima Memic (2008-2012), Katarzyna Rogoz (2008-2012), Martin Larhammar (2010-), Chetan Nagaraja (2010-), Kalicharan Patra (2010-), Nicole Neumann (2010-2012), Sharn Perry (2012-2016), Atieh Tafreshiha (2014-), Samer Siwani (2016-), Angelica Thulin (2018-)

## F. Tutoring experience:

Coordinator and seminar leader in medical ethics, Medical Faculty 1995- 1997  
Lecturer in physiology course and neurobiology course, Medical Faculty 2004-2006  
Organizer for 10p elective course in neuroscience, 2006 and 2007, PhD course in Neuroscience 2009 and for neuroscience seminar series for PhD students 2005-2008

## G. Commission of trust:

Board member of committee for Brain-Mind programme at Uppsala University, 2005-2006,  
Member of research committee, Dept of Neuroscience 2005-2008  
Evaluator - European Young Investigator Award 2007, 2009  
Member of dept board, Dept of Neuroscience 2008-  
Member of evaluating committee, post-doc (international and national) at the Swedish Medical Research Council 2006-2008, 2011-2012  
Member of nominating committee for faculty board 2008  
Founder and organiser of the REXED Seminar Series

## H. Referee assignments:

EMBO J, EMBO R, J. Comp. Neur., FEBS L., JCB, Cancer Res., MCN, Neuron, Neurosci Lett, ANA, TINS, Nature, ANNYA

**I. Expert advisor:** Tenure evaluation of: Warren Tourtelotte, Feinberg School of Medicine of Northwestern University, Chicago, USA; Rochellys Diaz, Karolinska Institute, Stockholm; Francois Lallemand, Karolinska Institute, Stockholm

**K. External evaluations** By Uppsala University Quality and renewal programme  
*In 2011, my unit was evaluated by an external review panel as part of a university wide assessment. My unit recorded the highest possible rating – Top Quality – outstanding at world leading level with great international impact.*

**L. Publications:** Web of science: 93, Sum of the Times Cited: 3970, h-index: 30

***Organisation of International conferences in the field of the applicant***

1. Organizer, Chairman, speaker. Neuronal circuits - From molecules to oscillations 10-13 November 2012, Tibau do Sul, RN, Brazil.
2. Organizer, speaker, CNS international neuroscience symposium, 2011-12 18, Uppsala, Sweden
3. Organizer, chairman, Session on neuronal circuits, EMBO/ELSO meeting, Nice, France, 2008-08-13.
4. Organizer, chairman, speaker, International symposium “A century of axon navigation research” Uppsala Sweden, 2008-12-05.
5. Member of organising committee, Axon Guidance Meeting, Varenna, Italy, 2001.

**Demonstrated ability to propose and conduct ground-breaking research**

Several recent high-impact publications in the area of the proposed research and documented experience of advanced mouse genetics. Several publications of in neuronal circuit analysis, both in terms of using the latest technology and by my publication track record (e.g. **Neuron 2004, TINS 2005, J Neurosci 2006, Neuron 2007, J Neurosci 2009, JCN 2010, Dev Biol 2012**). I have **productively changed research field**; since 2003, when my lab was started, we have approached the function of vesicular glutamate transporters (VGLUTs) for the study of excitatory neurons in-vivo. We reported on the first conditionally targeted VGLUT2 mice (62 cites) and reported that full KO mice die at birth due to malfunction of respiratory circuits dependent on VGLUT2 mediated neurotransmission (**J. Neurosci. 2006**). By now, 2012, I am established in the field of Vglut2 neuronal signaling in highly respected journals (**Mol Pain 2010, Neuron 2010, PNAS 2011, Pain 2012**) and our works has been commented on in **Nature Rev Neurosci**.

**Evidence of creative independent thinking** I have made groundbreaking and “outside the beaten path” discoveries for example in a study combining horse and mouse genetics to identify a transcription factor of a dorsal population of interneurons controlling gait published in **Nature, 2012**. Other examples include our analysis of circuits of the brain, especially in the recent years (**Nature Neuroscience 2004, J Neuroscience 2009, Nature Neuroscience 2009, PNAS 2010, J Neuroscience 2011**). **These discoveries** have relied upon novel markers identified in our lab and have provided tools to interrogate circuitries of the hippocampus. We have established slice preparations and in-vivo methods combined with electrophysiology and optogenetics. The assembly of this powerful approach has been instrumental for recent study in my laboratory, in which we identified an unexpected function of the hippocampal CA1 OLM interneurons (**Nature Neuroscience 2012**). Our first work on the role of cortical Martinotti cells was just published (**PLOS Biology 2017**). We have two manuscripts revealing the role of OLM cells in vivo, currently under revision in **Neuron** and **Nature Neuroscience**.

**Demonstration of sound leadership in the training and advancement of young scientists.** The ongoing career of **Dr. Katarina Leao** (postdoc with me 2008-2013). She is now a **Principal Investigator and member of faculty** at the Brain Institute (Instituto do Cérebro - ICe), Federal University of Rio Grande do Norte (UFRN) in Natal, Brazil. In 2010, I recruited another **dynamic group leader, R Leao**, to the unit, who quickly attracted a substantial 3 MSEK grant and together with me produced a **Nature Neuroscience** paper in 2012. This was possible through the **novel technologies brought to the lab** by him (in-vivo tetrodes, optogenetics combined with brain slice patch clamp). He now has a group of five people here and his own independent line of research. Moreover, he has managed to secure a faculty position in Natal, Brazil now sharing his time between Sweden and Brazil. **Dr. Åsa Wallén-Mackenzie**, previous postdoc in my group 2003-2008, 818 cites, h-index 17. Awarded “Excellent Young Researchers” from Uppsala University. Current position: Professor at EBC, Uppsala and Group Head. Financed by the Swedish Research Council. **Dr. Malin Lagerström**, previous postdoc in my group 2008-2011, 2302 cites, h-index 17. Associate Professor (docent) awarded 2012 and Group Head. Financed by the Swedish Research Council (VR) (4 years) and awarded the prestigious “Söderberg fellow” ([www.torstensoderbergsstiftelse.se](http://www.torstensoderbergsstiftelse.se)).