JENS HJERLING-LEFFLER, PHD
Molecular Neurobiology, Department of Biochemistry and Biophysics, Karolinska Institutet, Scheelesv 2, 17177 Stockholm, Sweden.
Jens.hjerling-leffler@ki.se, Tel: +46 707 786 201

*1. Higher education*
1994-1999, Program for Mathematics and Natural sciences (Biology)
Lunds Universitet, Lund, Sweden

*2. Doctoral degree*
Graduation: 2006-03-10, Subject: Biochemistry.
Medical Faculty, MBB, Karolinska Institutet, Stockholm, Sweden.
Supervisor: Prof. Patrik Ernfors

*3. Postdoctoral positions*
2006-2007, Martin Koltzenburg lab, Institute of Child Health, UCL, London, UK
2007-2011, Gordon Fishel lab, NYU School of Medicine, New York, NY, USA

*4. Current position*
2015-present: Senior Researcher, MBB, Karolinska Institutet, 100% research.

*5. Previous positions (periods of appointments)*
2011-2015 Assistant Professor, MBB, Karolinska Institutet, Stockholm, Sweden

*6.Interruptions in research*
N/A

*7. Supervision*
Postdoctoral supervision:

| | |
|---|---|
| 2012-present | Ana Munoz Manchado (Spain) |
| 2012-2014 | Claire Foldi (Australia) (now Univ. Melbourne, Australia) |
| 2015-present | Tanja Bhuiyan (Germany) |
| 2016-present | Nathan Skene (UK) |
| 2016-present | Jose Martinez Lopez (Spain) |

Supervision of PhD-students as main supervisor:

| | |
|---|---|
| 2014-present | Hermany Munguba (completed halftime 2015-09-24). |
| 2014-present | Carolina Bengtsson Gonzales |
| 2015-present | Kasra Nikouei |

Co-supervision of PhD-student

| | |
|---|---|
| 2011-2015 | Shaimaa Abdelhady (defended 2015, Andäng lab, FyFa, KI) |
| 2013-present | Hannah Hochgerner (Linnarsson group, MBB, KI). |

*8. Awards and honors*
-Member, Young Academy of Sweden (Sveriges unga akademi) 2015
-ENI-NET young investigator fellow 2014
-Marie Curie Career Integration Grant 2012-2016
-VR (Swedish Research Council) Assistant Professorship grant 2011-2015

-SSMF (Swedish society for medical research) fellow 2009-2011

-EMBO long-term fellow 2008-2009

-Hjärnfonden (Swedish brain foundation) Post doctoral fellow 2007

-IASP Collab. Res. Grant 2004. Named beneficiary, between UCL and Karolinska.

-Royal Society Internat. Joint Project 2004/R2-EU Europe (ESEP). Named beneficiary between UCL and Karolinska.

*9. Commissions of trust*

| | |
|---|---|
| 2015 – present | Board member StratNeuro, Karolinska Institutet |
| 2014 – present | Deputy Director of Postgraduate studies, MBB, KI |
| 2012 – present | Member of PhD-programme admission board, MBB, KI |
| 2012 – present | Member of the Junior Faculty Board, KI |
| 2015 – 2016 | JF representative on Board of Research Education, KI |
| 2014 – 2016 | Vice-Chair, Junior Faculty (JF) Karolinska Institutet |
| 2014 – 2015 | Chair, National Junior Faculty Sweden |

*10. Evaluation of other's work*

*Ad Hoc Reviewer* for:

Science, Nature Neuroscience ("top referee 2015"), EMBO Journal, Genome Research, Trends in Neuroscience, Cell Reports, Cerebral Cortex, Journal of Neuroscience, Frontiers in Cellular Neuroscience and BMC Neuroscience

*Reviewer* for the KI Graduate funding programme *(KID),* 2011-2015.

*External expert reviewer* Research Foundation Flanders (FWO), Belgium, 2015

*External expert reviewer* Agence National de la Recherché, France, 2015

*Faculty opponent for thesis defence* of Papachristou, Panagiotis, 2014-11-11, Dept of Women's and Children's Health, Karolinska Institutet

*Chairman of PhD-thesis committee* for Sara Leijon, 2016-02-12. CLINTEC, Karolinska Institutet

*11. Invitations to international scientific congresses as speaker or chair*

"IBAGS: international basal ganglia society", Cancun, Mexico, 2017

"Keystone Symposia: Synapses and Circuits", Santa Fe, NM, US, 2017

"The 7th International Neural Microcircuit Conference", Okazaki, Japan 2016

"FENS: Federation of European NeuroScience", Copenhagen, DK, 2016

"Gordon Research Conferences: Basal Ganglia", Ventura, CA, US, 2016

"NUS, UCL, KI Neuroscience Workshop 2016", Singapore, 2016

"Society for Neuroscience", Chicago, US, 2015.

"ENI-NET Annual Meeting", Freiburg, Germany, 2014

"EMBO Fellows' Meeting", EMBL Heidelberg, Heidelberg, Germany 2013

"EMBO Fellow's Meeting", EMBL Heidelberg, Heidelberg, Germany 2011

"Axon guidance, synapse form.and regen.", Cold Spring Harbor, NY, US, 2008

Speaker

*12. Publication List*

Number of articles: 26, Total Citations: 2396, H-index: 17
(Google Scholar 2016-08-18)

Peer-reviewed original articles:

Marques S, Zeisel A, Codeluppi S, van Bruggen D, Mendanha Falcão A, Xiao L, Li H, Häring M, Hochgerner H, Romanov RA, Gyllborg D, Muñoz-Manchado AB, La Manno G, Lönnerberg P, Floriddia EM, Rezayee F, Ernfors P, Arenas E, **Hjerling-Leffler J**, Harkany T, Richardson WD, Linnarsson S, Castelo-Branco G. Oligodendrocyte heterogeneity in the mouse juvenile and adult central nervous system. *Science*. 2016 Jun 10;352(6291):1326-9.

Nikouei K, Muñoz-Manchado AB, **Hjerling-Leffler J.** (2016) BCL11B/CTIP2 is highly expressed in GABAergic interneurons of the mouse somatosensory cortex. *J Chem Neuroanat*. 2016 Jan;71:1-5.

Zeisel A[$], Muñoz-Manchado AB[$], Codeluppi S, Lönnerberg P, La Manno G, Juréus A, Marques S, Munguba H, He L, Betsholtz C, Rolny C, Castelo-Branco G, **Hjerling-Leffler J*,** Linnarsson S*. (2015) Cell types in the mouse cortex and hippocampus revealed by single-cell RNA-seq. *Science*. 2015 Mar 6;347(6226):1138-42. PMID: 25700174. [$]shared first authors, *shared corresponding authors.

Muñoz-Manchado AB, Foldi C, Szydlowski S, Sjulson L, Farries M, Wilson C, Silberberg G, **Hjerling-Leffler J.** (2016) Novel Striatal GABAergic Interneuron Populations Labeled in the 5HT3aEGFP Mouse. *Cereb Cortex*. 2016 Jan;26(1):96-105 PMID: 25146369,

Usoskin D, Furlan A, Islam S, Abdo H, Lönnerberg P, Lou D, **Hjerling-Leffler J**, Haeggström J, Kharchenko O, Kharchenko PV, Linnarsson S, Ernfors P. (2015). Unbiased classification of sensory neuron types by large-scale single-cell RNA sequencing. *Nature Neurosci.* 2015 Jan;18(1):145-53. PMID: 25420068

Jaglin XH, **Hjerling-Leffler J,** Fishell G, Batista-Brito R. (2012) The origin of neocortical nitric oxide synthase-expressing inhibitory neurons. *Front Neural Circuits.* 6:44. PMID: 22787442

Ribeiro D, Laguna Goya R, Ravindran G, Vuono R, Parish CL, Foldi C, Piroth T, Yang S, Parmar M, Nikkhah G, **Hjerling-Leffler J**, Lindvall O, Barker RA, Arenas E. (2012) Efficient expansion and dopaminergic differentiation of human fetal ventral midbrain neural stem cells by midbrain morphogens. *Neurobiol Dis.* 2012 Aug 24;49C:118-127. PMID: 22940632,

Lee S*, **Hjerling-Leffler J*,** Zagha E, Fishell G, Rudy B. (2010) The largest group of superficial neocortical GABAergic interneurons expresses ionotropic serotonin receptors. *J Neurosci.* 30(50):16796-808. PMID: 21159951 *shared first authors,

Miyoshi G*, **Hjerling-Leffler J*,** Karayannis T, Sousa VH, Butt SJ, Battiste J, Johnson JE, Machold RP, Fishell G. (2010) Genetic fate mapping reveals that the caudal ganglionic eminence produces a large and diverse population of superficial cortical interneurons. *J Neurosci.* 30(5):1582-94. PMID: 20130169 *shared first authors.

Usoskin D, Zilberter M, Linnarsson S, **Hjerling-Leffler J**, Uhlén P, Harkany T, Ernfors P. (2010) En masse in vitro functional profiling of the axonal mechanosensitivity of sensory neurons. *Proc Natl Acad Sci U S A.* 107(37):16336-41. PMID: 20736349

Batista-Brito R, Rossignol E, **Hjerling-Leffler J**, Denaxa M, Wegner M, Lefebvre V, Pachnis V, Fishell G. (2009) The cell-intrinsic requirement of Sox6 for cortical interneuron development *Neuron.* 63(4):466-81. PMID: 19709629

Sousa V, Miyoshi G, **Hjerling-Leffler J**, Karayannis T, Fishell G. (2009) The specification of Nkx6-2 derived neocortical interneuron lineages. *Cereb Cortex.* 19(suppl_1):i1-i10. PMID: 19363146

Aldskogius H, Berens C, Kanaikina N, Liakhovitskaia A, Medvinsky A, Sandelin M, Schreiner S, Wegner M, **Hjerling-Leffler J**, Kozlova EN. (2009) Regulation of Boundary Cap Neural Crest Stem Cell Differentiation after Transplantation. *Stem Cells.* 27(7):1592-603. PMID: 19544468

Zhu SW, Codita A, Bogdanovic N, **Hjerling-Leffler J**, Ernfors P, Winblad B, Dickins DW, Mohammed AH. (2009) Influence of environmental manipulation on exploratory behaviour in male BDNF knockout mice. *Behav Brain Res.* 197(2):339-46. PMID: 18951926

Butt SJ, Sousa VH, Fuccillo MV, **Hjerling-Leffler J,** Miyoshi G, Kimura S, Fishell G. (2008) The requirement of Nkx2-1 in the temporal specification of cortical interneuron subtypes. *Neuron.* 59(5):722-32. PMID: 18786356,

Andäng M[$], **Hjerling-Leffler J[$],** Moliner A, Lundgren TK, Castelo-Branco G, Nanou E, Pozas E, Bryja V, Halliez S, Nishimaru H, Wilbertz J, Arenas E, Koltzenburg M, Charnay P, Manira AE, Ibañez CF, Ernfors P. (2008) Histone H2AX-dependent GABA(A) receptor regulation of stem cell proliferation. *Nature.* 451(7177):460-4. PMID:18185516, [$]main contributors.

**Hjerling-Leffler, J**., Al-Qatari, M., Ernfors, P., Koltzenburg, M. (2006) Emergence of functional sensory subtypes as identified by TRP-channel expression. *J Neurosci.* 27(10):2435-43. PMID: 17344381

Aquino, J., **Hjerling-Leffler, J**., Koltzenburg, M., Edlund, T., Villar, M.J., Ernfors, P. (2006). In vitro and in vivo differentiation of boundary cap neural crest stem cells into mature Schwann cells. *Experimental Neurology.* 198(2): 438-49. PMID: 16442526

**Hjerling-Leffler, J**., Marmigère, F., Heglind, M., Cederberg, A., Koltzenburg, M., Enerbäck, S., Ernfors, P. (2005) The boundary cap, a source of neural crest stem cells generating multiple sensory neuron subtypes. *Development* 132: 2623-2632. PMID: 15872002, 6.3

Kobayashi, M., **Hjerling-Leffler, J**., Ernfors, P. (2005) Increased progenitor proliferation and apoptotic cell death in the sensory lineage of mice overexpressing N-myc. *Cell Tissue Res.* Aug 13: 1-10. PMID: 16133151

Agerman, K., **Hjerling-Leffler, J**., Blanchard, M.-P., Scarfone, E., Canlon, B., Nosrat, C., and Ernfors, P. (2003) BDNF gene replacement strategy reveals multiple mechanisms for establishing neurotrophin specificity during sensory nervous system development. *Development* 130: 1479-1491. PMID: 12620975

Review articles, book chapters, books (including invited and peer-reviewed)

Poulin, J.F., Tasic, B., **Hjerling-Leffler J.,** Trimarchi J.M., Awatramani R. (2016) Disentangling neural cell diversity using single-cell transcriptomics. *Nature Neuroscience.* In press.

Keimpema E, Straiker A, Mackie K, Harkany T, **Hjerling-Leffler J.** (2012) Sticking out of the crowd: the molecular identity and development of cholecystokinin-containing basket cells. *J Physiol*. 590 (Pt 4):703-14. PMID: 22219340

Rudy B, Fishell G, Lee S, **Hjerling-Leffler J**. (2011) Three groups of interneurons account for nearly 100% of neocortical GABAergic neurons. *Dev Neurobiol.* 71(1):45-61. PMID: 21154909

Hjerling-Leffler, J. (2006) PhD-thesis. Sensory neurons: Stem cells and development. Stockholm. Reproprint AB. ISBN: 91-7140-667-0

Mohammed AH, Zhu SW, Darmopil S, **Hjerling-Leffler J**, Ernfors P, Winblad B, Diamond MC, Eriksson PS, Bogdanovic N. (2002) Environmental enrichment and the brain. *Prog Brain Res.;*138:109-33. PMID: 12432766