

# Curriculum vitae: Erik Smedler

**Title:** Associate professor, MD-PhD

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**Affiliation:** Department of Neuroscience and Physiology (GU), Wallenberg Centre for Molecular and Translational Medicine (GU), Department of Clinical Chemistry (SU).

Independent researcher and group leader of the Molecular psychiatry group at the University of Gothenburg. The group consists of three postdoctoral researchers (Bingqing He, Parvaneh Nikpour and Vika Telle), three doctoral students (Melis Celik, Niklas Bengtsson and Ana Iris Correa Muler) and two associate researchers (Lovisa Lettius and Saliha Musovic).

## Employment

- Combination position as resident physician in psychiatry at Sahlgrenska University Hospital at 50% and researcher at the University of Gothenburg, Department of Neuroscience and Physiology, at 50% since 2020, funded by ALF/Swedish Research Council.
- Research intern physician at Sahlgrenska University Hospital, 2017-2019.
- Postdoctoral researcher at the University of Gothenburg under Professor Mikael Landén, 2017-2019.
- Ph.D. student at Karolinska Institutet under Professor Per Uhlén, 2011-2017.

## Education

- Leadership course for research leaders REAL8, University of Gothenburg, 2022-2023.
- Docent in Psychiatry at the University of Gothenburg since 2022.
- Step 1 Cognitive Behavioral Therapy (CBT) Psychotherapy Training, Psykologpartners, 2020-2022
- Medical Degree (MD), Karolinska Institutet, 2009-2017.
- Ph.D. in Medical Science, Karolinska Institutet, 2011-2017, ( $Ca^{2+}$  Signaling and Network Activity: Mathematical Analysis and Molecular Mechanisms, supervised by Professor Per Uhlén).
- Master of Science in Engineering Physics (MSc), Royal Institute of Technology, 2005-2009, GPA 4.7 out of 5.

## Teaching

- Experience in teaching at various levels at both the University of Gothenburg and Karolinska Institutet, including seminars, laboratory sessions, and lectures. Responsible for one course in *Mood disorders* for resident psychiatrist (2023-, Sahlgrenska University Hospital) and in *Cellular models of the human CNS* for PhD students (2024-, University of Gothenburg).
- Supervisor for thesis projects of medical students (Ali Hattab, Sohaib Hattab, Salma Mohamed, Johanna Gratjova, Aleksii Markkanen, and Johanna Kleppe at the

University of Gothenburg, 2019-2022), thesis projects of pharmacy students (Melina Dukell, Shiva Hadi, and Mårten Johansson at the University of Gothenburg, 2020-2021), and a master's student (Isabella Mårtensson, Chalmers, 2024, Lucy Maibach, Free University of Amsterdam, 2024 and Armita Bayesteh, KTH, 2012), as well as project supervisor for medical students (Emolah Bonbon, University of Gothenburg, 2021). Also, co-supervisor for three doctoral students (Anniella Isgren, defended in 2022, Andreas Göteson, and Sophie Steijer, University of Gothenburg).

- Training in higher education pedagogy at the University of Gothenburg totaling 15 credits equivalent to associate professor competence.
- Member of the grading committee for PhD (Rong Ma 2024, Johan Nyrenius 2023, and Abishek Arora 2023) and half-time (Erika Lucente 2024, Almira Osmanovic Thunström 2023, and Ramana Piussis 2022).
- Examiner for medical students' theses: Lukas Wikström 2023, Taleb Al Mnajed 2023, and Husain Esehaqzahi 2022.

## Grants

I am the main applicant for several national and regional grants: **the Swedish Research Council, Wallenberg centre for molecular and translational medicine, ALF, PALS** collaboration project, Kurt och Ingrid Dahréns stiftelse, Åke Wibergs stiftelse, Jeanssons stiftelse, Svenska Läkaresällskapet, Göteborgs Läkaresällskap, Kurt och Ingrid Dahréns stiftelse, Åhlén-stiftelsen, Sahlgrenska Universitetssjukhusets fonder, Olle Engkvists stiftelse, Magnus Bergvalls stiftelse, Stiftelsen Psykiatriska Forskningsfonden, Kurt och Ingrid Dahréns stiftelse, Stiftelsen Lars Hiertas minne, Fredrik och Ingrid Thuring's stiftelse, Stiftelsen Sigurd och Elsa Goljes minne, Wilhelm & Martina Lundgrens Vetenskapsfond, Längmanska Kulturfonden, Psykiatrifonden and Stiftelsen Söderström-Königska.

## Other

- External reviewer ad hoc for journals including European Neuropsychopharmacology, BMC Psychiatry, Integrative Biology, Progress in Neuropsychopharmacology & Biological Psychiatry, Neuropsychiatric Disease and Treatment, Journal of Personalized Medicine, International Journal of Molecular Science, Journal of Clinical Medicine, Psychiatric Genetics, and Journal of Psychiatric Research, as well as national funding agencies Agence Nationale de la Recherche and Biotechnology, Biological Sciences Research Council and the Science Fund of the Republic of Serbia, Stiftelsen Professor Bror Gadelius Minnesfond, and the local GU grant Bollans stipendium.
- Board member of Future Faculty at Sahlgrenska Academy, University of Gothenburg, since 2019.
- Founder of a national network for the use of IPS cells as a model for psychiatric disorders, SHIPS (2023-).
- Member of ECNP iPSCs Platform for Neuropsychiatry Network (2024-).
- Member of PGC Working Group Functional Genomics (2024-).

## Publications

Total of 24 publications and 860 citations, h-index 14 (Google Scholar 240430).

Equal contribution \*

1. *Single-Cell Transcriptomics Reveals the Molecular Logic Underlying Ca<sup>2+</sup> Signaling Diversity in Human and Mouse Brain*  
Ibrahim Al Rayyes, Lauri Louhivuori, Ivar Dehnisch Ellstrom, **Erik Smedler** and Per Uhlén  
*bioRxiv* 2024 <https://doi.org/10.1101/2024.04.26.591400>
2. *Key subphenotypes of bipolar disorder are differentially associated with polygenic liabilities for bipolar disorder, schizophrenia, and major depressive disorder*  
Jie Song, Lina Jonsson, Yi Lu, Sarah E Bergen, Robert Karlsson, **Erik Smedler**, Katherine Gordon-Smith, Ian Jones, Lisa Jones, Nick Craddock, Patrick F Sullivan, Paul Lichtenstein, Arianna Di Florio, Mikael Landén  
*Mol Psychiatry*. 2024 Feb 14
3. *Not all bipolar disorder outcomes are created equal: occupational dysfunction and hospital admissions associate with different polygenic profiles*  
Lina Johansson, Elin Hörbeck, Amedeo Primerano, Jie Song, Robert Karlsson, **Erik Smedler**, Katherine Gordon-Smith, Lisa Jones, Nicholas Craddock, Ian Jones, Patrick F. Sullivan, Erik Pålsson, Arianna Di Florio, Timea Sparding, Mikael Landén  
*Am J Psychiatry*. 2023 Accepted
4. *Association of premorbid intelligence with level of functioning and illness severity in bipolar disorder*  
**Erik Smedler**, Lina Johansson, Elin Hörbeck, Timea Sparding and Mikael Landén  
*J Affect Disord*. 2023 Jan 4;324:449-454.
5. *Effect of CYP2C19 polymorphisms on antidepressant prescription patterns and treatment emergent mania in bipolar disorder.*  
Erik Joas, Lina Jonsson, Alexander Viktorin, **Erik Smedler**, Erik Pålsson, Guy M. Goodwin and Mikael Landén  
*Pharmacogenomics J*. 2022 Nov 4.
6. *Metabolomics analysis of cerebrospinal fluid suggests citric acid cycle aberrations in bipolar disorder*  
**Erik Smedler\***, Alireza M. Salehi\*, Auris Pelanis, Erik Pålsson, Ana Andreatza and Mikael Landén  
*Neuroscience Applied* 1, 100108
7. *Cerebrospinal fluid proteomic study of two bipolar disorder cohorts*  
Anniella Isgren, Andreas Göteson, Jessica Holmén-Larsson, Aurimantas Pelanis, Carl Sellgren, Erik Joas, Timea Sparding, Henrik Zetterberg, **Erik Smedler**, Joel Jakobsson and Mikael Landén  
*Mol Psychiatry*. 2022 Nov;27(11):4568-4574.

8. *Disrupted Cacna1c Gene Expression Perturbs Spontaneous Ca<sup>2+</sup> Activity Causing Abnormal Brain Development and Increased Anxiety*  
**Erik Smedler**, Lauri Louhivuori, Roman A. Romanov, Débora Masini, Ivar Dehnisch Ellström, Chunliang Wang, Martino Caramia, Zoe West, Songbai Zhang, Paola Rebellato, Seth Malmersjö, Irene Brusini, Shigeaki Kanatani, Gilberto Fisone, Tibor Harkany and Per Uhlén  
*Proc Natl Acad Sci U S A.* 2022 Feb 15;119(7):e2108768119
9. *Cerebrospinal fluid proteomics targeted for central nervous system processes in bipolar disorder*  
Andreas Göteson, Anniella Isgren, **Erik Smedler**, Auris Pelanis, Timea Sparding, Jessica Holmén-Larsson, Joel Jakobsson, Erik Pålsson and Mikael Landén  
*Mol Psychiatry.* 2021 Dec;26(12):7446-7453.
10. *Cerebrospinal fluid and serum protein markers in autism: a co-twin study*  
**Erik Smedler**, Johanna Kleppe, Janina Neufeld, Karl Lundin, Sven Bölte and Mikael Landén  
*J Neurochem.* 2021 Mar 6. doi: 10.1111/jnc.15338.
11. *Reporting trigger factors for (hypo)manic episodes in bipolar disorder: association with personality and prognosis*  
**Erik Smedler**, Timea Sparding, Ali Hattab, Carl M Sellgren and Mikael Landén  
*Acta Psychiatr Scand.* 2020 Jun;141(6):534-540.
12. *CACNA1C polymorphism and brain cortical structure in bipolar disorder*  
**Erik Smedler**, Christoph Abé, Erik Pålsson, Martin Ingvar and Mikael Landén  
*J Psychiatry Neurosci.* 2019 Dec 12;45(1):190029.
13. *Genes, biomarkers, and clinical features associated with the course of bipolar disorder*  
**Erik Smedler**, Sarah Bergen, Jie Song and Mikael Landén  
*Eur Neuropsychopharmacol.* 2019 Oct;29(10):1152-1160.
14. *Association of CACNA1C polymorphisms with BDNF levels in bipolar disorder*  
**Erik Smedler**, Erik Pålsson, Kenji Hashimoto and Mikael Landén  
*Br J Psychiatry.* 2019 Jul 18:1-3.
15. *Mapping genes for calcium signaling and their associated human genetic disorders*  
Matthias Hörtenhuber, Enrique M. Toledo, **Erik Smedler**, Ernest Arenas, Seth Malmersjö, Lauri Louhivuori and Per Uhlén  
*Bioinformatics.* 2017 Aug 15;33(16):2547-2554.
16. *CO<sub>2</sub>-evoked release of PGE<sub>2</sub> modulates sighs and inspiration as demonstrated in brainstem organotypic culture*  
David Forsberg, Zachi Horn\*, Evangelia Tserga\*, **Erik Smedler**, Gilad Silberberg, Yuri Shvarev, Kaila K, Per Uhlén and Eric Herlenius  
*Elife.* 2016 Jul 5;5. pii: e14170.

17. *The 1p36 Tumor Suppressor KIF 1B Is Required for Calcineurin Activation, Controlling Mitochondrial Fission and Apoptosis*  
Shujie Li, Stuart M. Fell, Olga Surova, **Erik Smedler**, Karin Wallis, Zhi Xiong Chen, Ulf Hellman, John Inge Johnsen, Tommy Martinsson, Rajappa S. Kenchappa, Per Uhlén, Per Kogner and Susanne Schlisio  
*Dev Cell*. 2016 Jan 25;36(2):164-78.
18. *Calcium Signaling in Neocortical Development*  
Per Uhlén, Nicolas Fritz, **Erik Smedler**, Seth Malmersjö and Shigeaki Kanatani  
*Dev Neurobiol*. 2015 Apr;75(4):360-8.
19. *Network Analysis of Time-Lapse Microscopy Recordings*  
**Erik Smedler\***, Seth Malmersjö\* and Per Uhlén  
*Front Neural Circuits*. 2014 Sep 17;8:111.
20. *Antimicrobial peptide LL-37 regulates the production of eicosanoids by human macrophages via temporally and mechanistically separate pathways*  
Min Wan, Oliver Söhnlein, Xiao Tang, Anne M. van der Does, **Erik Smedler**, Per Uhlén, Lennart Lindbom, Birgitta Agerberth, Jesper Z. Haeggström  
*FASEB J*. 2014 Aug;28(8):3456-67.
21. *Frequency decoding of calcium oscillations*  
**Erik Smedler** and Per Uhlén  
*Biochim Biophys Acta*. 2014 Mar;1840(3):964-9.
22. *Small-World Networks of Spontaneous Ca<sup>2+</sup> Activity*  
Seth Malmersjö\*, Paola Rebellato\*, **Erik Smedler\*** and Per Uhlén  
*Commun Integr Biol*. 2013 Jul 1;6(4):e24788.
23. *Neural Progenitors Organize in Small-World Networks to Promote Cell Proliferation*  
Seth Malmersjö\*, Paola Rebellato\*, **Erik Smedler\***, Henrike Planert, Shigeaki Kanatani, Isabel Liste, Evanthia Nanou, Hampus Sunner, Shaimaa Abdelhady, Songbai Zhang, Michael Andäng, Abdeljabbar El Manira, Gilad Silberberg, Ernest Arenas and Per Uhlén  
*Proc Natl Acad Sci U S A*. 2013 Apr 16;110(16):E1524-32.
24. *Small Molecule Screening Platform for Assessment of Cardiovascular Toxicity on Adult Zebrafish Heart*  
Satish Srinivas Kitambi\*, **Erik S Nilsson\***, Gilbert Nyah Tekeoh, Cristian Ibarra, Patrik Ernfors and Per Uhlén  
*BMC Physiol*. 2012 Mar 26;12:3.