

PERSONAL DETAILS

- Date of birth: March 5, 1974
- Place of birth: Mannheim, Germany; German / Swiss citizen
- Married to Prof. Dr. med. Susanne Wegener
Children: Stella Marie *12.02.2005; Jil Meret *12.11.2007

CURRENT POSITION

- Professor for Neuroscience, Director (since 2014)
Brain Research Institute, Faculties of Medicine and Science
University of Zurich, Winterthurerstrasse 190, 8057 Zurich, Switzerland
jessberger@hifo.uzh.ch (www.hifo.uzh.ch/research/jessberger.html)

DEGREE/HIGHER EDUCATION

- University of Hamburg, Germany, Completion of medical thesis 2002 (Dr. med.)
- University of Hamburg, Completion of Graduate Studies 2002 (Molecular Biology)
- University of Hamburg, M.D. 2001 (Medicine)
- United States Medical Licensing Examinations (USMLE Step I and Step II) 1997, 2000

PROFESSIONAL CAREER

- Full Professor, University of Zurich, 2019-present
- Associate Professor, University of Zurich, 2012-present
- Assistant Professor, Institute of Cell Biology, Dept. of Biology, ETH Zurich, 2007-2012
- Research Associate, Salk Institute for Biological Studies, La Jolla, USA, 2004-2007
- Resident, Clinic of Neurology, Charité University Hospital, Berlin, 2002-2004
- Research Associate, Max Delbrück Center for Molecular Medicine, Berlin, 2002-2004
- Medical School rotations in New York (USA), Kumi (Uganda), Montpellier (France), Berne (Switzerland), Vienna (Austria), 1995-2001

PROFESSIONAL ACTIVITIES AND SELECTED SCIENTIFIC SERVICES

- ERC Consolidator Grant panel member, 2019, 2021, 2023 Panel evaluator ERC Synergy, 2022
- Member Research Strategy Committee, Medical Faculty UZH, 2020-present
- Academic Editor *Life Science Alliance*, 2017-present
- Editorial Board Member *Physiological Reviews*, 2018-present
- President board of Betty and David Koetser foundation, 2021-present
- Member Auswahlausschuss Alexander von Humboldt Foundation, 2013-2022
- Faculty member *Faculty of 1000* (Neurobiology of Disease & Regeneration), 2015-present
- Member/Head (2018) Gender Equality committee ZNZ, 2015-2020
- Review panel member (chair 2011) Norway Research Council, 2009-2011, 2013, 2015
- *Ad hoc* reviewer for grants submitted to SNSF, ERC, DFG, EMBO, BBSRC, and others.
- *Ad hoc* reviewer for Nature, Science, Cell, Cell Stem Cell, Nature neuroscience, Neuron, PNAS, EMBO J, and others.

PUBLICATION SUMMARY

- 84 peer-reviewed publications
- 10 book chapters as leading or corresponding author
- 18754 citations; H-index 49 (Google scholar)
- "Highly cited Researcher" 2019 (Web of Science, top 1% field and year)

HONOURS AND AWARDS

- Prof. Max Cloëtta foundation award for biomedical research, 2023
- SNSF Advanced Grant, 2022-2027
- Robert Bing Prize of the Swiss Academy of Medical Sciences, 2016
- ERC Consolidator Grant, 2016-2021
- SNSF Consolidator Award, 2015-2020
- EMBO Young Investigator Program Award, 2012
- Georg Friedrich Götze Prize, 2013
- Wilhelm Sachsenmair Lecture 2013, ECPS, Innsbruck, A
- John and Lucille van Geest Lecture 2012, Cambridge University, Cambridge, UK
- Jerzy Olszewski Lecture 2010, Canadian Association of Neuropathologists, Toronto, CA
- Fellow MaxnetAging, network on aging of the Max-Planck society, 2005-present

- Postdoctoral fellowship of the American Epilepsy Foundation, Salk Institute, USA, 2006-2007
- Forschungsstipendium of the DFG, Salk Institute, USA, 2004-2006
- Member Graduate program of the DFG, Hamburg, 1997-2000

ORGANISATION OF SCIENTIFIC MEETINGS

- Co-organizer Monte Verità conference Neurogenesis in health and disease, 2022, Ascona (CH)
- Co-founder Eurogenesis network (www.eurogenesis.com)
Co-organizer Eurogenesis meeting, 2013, 2016, 2019, (planned 2024) Bordeaux (F)
- Co-organizer *Fusion* conferences on Neurogenesis and Neural Disease Modelling, February 2024 Cancun (MX), March 2019 Nassau (BAH), and March 2016 Cancun (MX)
- Co-organizer EMBO YIP Stem cell Sectorial meeting, Nov 2014, Paris (F)

SELECTED INVITED LECTURES (2017-2022)

- EMBO Workshop Gene regulatory mechanisms in neural fate decisions, Sept 2023, Alicante, Spain
“Molecular and functional heterogeneity of neural stem cells across lifespan”
- Lund 20th Anniversary Stem Cell Conference, April 2023, Lund, Sweden
- “Intravital imaging to analyse the future (and the past) of adult neural stem cells”
- International Symposium on Neural Development and Diseases, March 2023, Kyoto, Japan
“Molecular and functional heterogeneity of hippocampal stem cells”
- Neuroscience School of Advanced Studies, July 2022, Crans-Montana, CH
“Molecular and functional properties of hippocampal stem cells”
- EMBO Workshop Neural stem cells, June 2022, Kyllini, Greece
“Functional diversity of neural stem cells”
- International Symposium Development and Plasticity of Neural Systems, March 2022, Kyoto (virtual)
“Control of neural stem cell activity”
- ISSCR Webinar Imaging in Neuroscience (with J Lichtman, X Shen), March 2022, virtual
“Using intravital imaging to characterize the dynamics of hippocampal stem cells”
- Queensland Brain Institute Seminar Series, March 2022, virtual
“Molecular and functional properties of hippocampal stem cells”
- WorldWideNeuro Dev Forum, May 2021, virtual
“Molecular and functional heterogeneity of neural stem cells”
- 15th Annual Wisconsin Stem Cell Symposium, April 2021, virtual
“Molecular and functional control of neural stem cells”
- 15th Clinical Neuroscience Bern meeting (Keynote lecture), Oct 2020, virtual
“Molecular and functional diversity of adult neural stem cells”
- USC Distinguished Speaker Seminar Series, November 2020, virtual
“Molecular and functional heterogeneity of neural stem cells”
- 42th Annual meeting Molecular biology society of Japan, Dec 2019, Fukuoka, Japan
“Stem cells in the adult brain”
- ISSCR conference, June 2019, Los Angeles, USA
“Stem cell divisions in the adult brain”
- Marabou Foundation conference, June 2019, Stockholm, Sweden
“Neural stem cells and aging”
- XVI Portuguese Society for Neuroscience (Keynote lecture), May 2019, Lisbon, Portugal
“Elucidating the molecular and cellular dynamics of neurogenesis”
- DZNE Dresden Opening Symposium (Keynote lecture), May 2019, Dresden, Germany
“Single cell dynamics of adult neural stem cells”
- EMBO conference Neurogenesis, Feb 2019, Bangalore, India
“Cellular principles of life-long neurogenesis”
- EMBO CSCB conference, Nov 2018, Suzhou, China
“Stem cell divisions in the adult brain”
- Lund Stem Cell Center retreat (Keynote lecture), Sept 2018, Bastad, Sweden
“Molecular mechanisms regulating neural stem cell activity”
- Stem Cell Conference Basel, Aug 2018, Basel, CH
“Cellular and molecular mechanisms regulating neural stem cell activity”
- Abcam Adult Neurogenesis Symposium, May 2018, Dresden, Germany
“Imaging the dynamics of neurogenesis in the adult hippocampus”
- Alpine Anatomical Research Conference (Keynote lecture), March 2018, Obergurgl, Austria
“Cellular and molecular mechanisms regulating neural stem cell activity”
- 14th Winter Brain & Heart Symposium (Keynote lecture), March 2018, Sils Maria, CH
“Mechanisms regulating neural stem cell activity”
- Keystone Symposium Stem Cells & Neurogenesis, Jan 2017, Squaw Creek, USA
“Plasticity of neural stem cells in the adult brain”

SELECTED EXTRACURRICULAR LECTURES AND PUBLIC OUTREACH

- 2020 Lecturer, senior citizens Universities of Zurich and Winterthur
- 2018 Participant and planning of “100 Ways of Thinking” exhibition, Kunsthalle, Zurich
- 2017 Brain Fair
- 2013 ISSCR Lecture series (featuring talks of SJ, J. Knoblich, F.H. Gage, A.R. Kriegstein)
- 2013 ETH Science City lecture series at ETH Zurich
- 2012 Honorary lecture MSc celebrations ETH Zurich
- 2012 Committee member *Falling Walls* lab, Zurich
- 2009 Honorary lecture PhD celebrations ETH Zurich
- 2008, 2010, 2014, 2015, 2018 Participation at the “Gentage” and lectures at public highschools
- 2008, 2009, 2010, 2013, 2020 Lectures at the “Seniorenuniversitäten” Zurich, Winterthur, Buchs
- 2007 ETH Science City, Discussion with then Swiss President Pascal Couchepin about stem cells

SELECTED PUBLICATIONS (2013-2022)

(For full list: <https://pubmed.ncbi.nlm.nih.gov/?term=Sebastian+Jessberger+&sort=date>)

- Wu Y, Bottes S, Fisch R, Zehnder C, Cole JD, Pilz GA, Helmchen F, Simons BD, Jessberger S (2023) Chronic in vivo imaging defines age-dependent alterations of neurogenesis in the mouse hippocampus. **Nature Aging** <https://doi.org/10.1038/s43587-023-00370-9>
- Bin Imtiaz MK, Royall LN, Gonzalez-Bohorquez D, Jessberger S (2022) Human neural progenitors establish a diffusion barrier in the endoplasmic reticulum membrane during cell division. **Development** 149.
- Gonzalez-Bohorquez D, Gallego Lopez IM, Jaeger BN, Pfammatter S, Bowers M, Semenkovich CF, Jessberger S (2022) FASN-dependent de novo lipogenesis is required for brain development. **PNAS** 119.
- Cole JD, Sarabia Del Castillo J, Gut G, Gonzalez-Bohorquez D, Pelkmans L, Jessberger S (2022) Characterization of the neurogenic niche in the aging dentate gyrus using iterative immunofluorescence imaging. **eLife** 11
- Denoth-Lippuner A, Jaeger BN, Liang T, Royall LN, Chie SE, Buthey K, Machado D, Korobeynyk VI, Kruse M, Munz CM, Gerbaulet A, Simons BD, Jessberger S (2021) Visualization of individual cell division history in complex tissues using iCOUNT **Cell Stem Cell** 28:1-15
- Bottes S, Jessberger S (2021) Live imaging of remyelination in the adult mouse corpus callosum. **PNAS** 118.
- Bin Imtiaz MK, Jaeger BN, Bottes S, Machado RAC, Vidmar M, Moore DL, Jessberger S (2021) Decline of Lamin B1 expression mediate age-dependent decreases of hippocampal stem cell activity. **Cell Stem Cell** 18:S1934-5909
- Denoth-Lippuner A, Jessberger S (2021) Formation and integration of new neurons in the adult hippocampus. **Nature Reviews Neuroscience** doi: 10.1038/s41583-021-00433-z
- Royall LN, Jessberger S (2021) How stem cells remember their past. **Current Opinion in Cell Biol** doi: 10.1016/j.ceb.2020.12.008.
- Bottes S, Jaeger BN, Pilz GA, Jörg DJ, Cole JD, Kruse M, Harris L, Korobeynyk VI, Mallona I, Guillemot F, Helmchen F, Simons BD, Jessberger S (2021) Long-term self-renewing stem cells in the adult mouse hippocampus identified by intravital imaging. **Nature Neuroscience** 24:225-233
- Bowers M, Liang T, Gonzalez-Bohorquez D, Zocher S, Jaeger BN, Kovacs W, Röhl C, Cramb K, Winterer J, Kruse M, Dimitrieva S, Overall RW, Wegleiter T, Najmabadi H, Semenkovich CF, Kempermann G, Földy C, Jessberger S (2020). FASN-dependent metabolism links neural stem/progenitor cell activity to learning and memory deficits. **Cell Stem Cell** 27:98-109
- Jaeger BN, Yángüez E, Gesuita L, Denoth-Lippuner A, Kruse M, Karayannis T, Jessberger S (2020) Miniaturization of Smart-seq2 for high-throughput single-cell and single-nuclei RNA sequencing. **STAR Protocols** 1, 100081
- Giger S, Kovtonyuk LV, Utz SG, Ramosaj M, Kovacs WJ, Schmid E, Ioannidis V, Greter M, Manz MG, Lutolf MP, Jessberger S*, Knobloch M* (2020) A Single Metabolite which Modulates Lipid Metabolism Alters Hematopoietic Stem/Progenitor Cell Behavior and Promotes Lymphoid Reconstitution. **Stem Cell Reports** 15:1-11 *shared corresponding author
- Wegleiter T, Buthey K, Gonzalez-Bohorquez D, Hruzova M, Bin Imtiaz MK, Abegg A, Mebert I, Molteni A, Kollegger D, Pelczar P, Jessberger S (2019) Palmitoylation of BMPR1a regulates neural stem cell fate. **PNAS** 51:25688-25696.
- Denoth-Lippuner A, Jessberger S (2019) Mechanisms of cellular rejuvenation. **FEBS Lett** 593:3381-3392.
- Wang J, Shen J, Kirschen GW, Gu Y, Jessberger S, Ge S (2019) Lateral dispersion is required for circuit integration of newly generated dentate granule cells. **Nat Commun** 10:3324.
- Pilz GA, Bottes S, Betizeau M, Jörg DJ, Carta S, Simons BD, Helmchen F, Jessberger S (2018) Live imaging of neurogenesis in the adult hippocampus. **Science** 359:658-662
- Jaeger BN, Linker SB, Parylak SL, Barron JJ, Gallina IS, Saavedra CD, Fitzpatrick C, Lim CK, Schafer ST, Lacar B, Jessberger S, Gage FH (2018) A novel environment-evoked transcriptional signature predicts reactivity in single dentate granule neurons. **Nat Commun.** (1):3084

- Kalucka J, Bierhansl L, Conchinha NV, Missiaen R, Elia I, Brüning U, Scheinok S, Treps L, Cantelmo AR, Dubois C, de Zeeuw P, Goveia J, Zecchin A, Taverna F, Morales-Rodriguez F, Brajic A, Conradi LC, Schoors S, Harjes U, Vriens K, Pilz GA, Chen R, Cubbon R, Thienpont B, Cruys B, Wong BW, Ghesquière B, Dewerchin M, De Bock K, Sagaert X, Jessberger S, Jones EAV, Gallez B, Lambrechts D, Mazzone M, Eelen G, Li X, Fendt SM, Carmeliet P. (2018) Quiescent Endothelial Cells Upregulate Fatty Acid β -Oxidation for Vasculoprotection via Redox Homeostasis. **Cell Metabolism** doi: 10.1016/j.cmet.2018.07.016
- Kempermann G, Gage FH, Aigner L, Song H, Curtis MA, Thuret S, Kuhn HG, Jessberger S, Frankland PW, Cameron HA, Gould E, Hen R, Abrous DN, Toni N, Schinder AF, Zhao X, Lucassen PJ, Frisén J (2018) Human Adult Neurogenesis: Evidence and Remaining Questions. **Cell Stem Cell** doi: 10.1016/j.stem.2018.04.004
- Montani L, Pereira JA, Norrmen C, Pohl HB, Tinelli E, Trotsmuller M, Figlia G, Dimas P, von Niederhausern B, Schwager R, Jessberger S, Semnkovich CF, Köfeler HC, Suter U (2018) De novo fatty acid synthesis by Schwann cells is essential for peripheral nervous system myelination. **Journal of Cell Biology** 217:1353-1368.
- Knobloch, M., Pilz, G.A., Ghesquiere, B., Kovacs, W.J., Wegleiter, T., Moore, D.L., Hruzova, M., Zamboni, N., Carmeliet, P., and Jessberger, S. (2017). A Fatty Acid Oxidation-Dependent Metabolic Shift Regulates Adult Neural Stem Cell Activity. **Cell reports** 20, 2144-2155.
- Beckervordersandforth R, Ebert B, Schäffner I, Moss J, Fiebig C, Shin J, Moore DL, Ghosh L, Trincherio MF, Stockburger C, Friedland K, Steib K, von Wittgenstein J, Keiner S, Redecker C, Hölter SM, Xiang W, Wurst W, Jagasia R, Schinder AF, Ming GL, Toni N, Jessberger S, Song H, Lie DC (2017) Role of Mitochondrial Metabolism in the Control of Early Lineage Progression and Aging Phenotypes in Adult Hippocampal Neurogenesis. **Neuron** 93(3):560-573
- Wong BW, Wang X, Zecchin A, Thienpont B, Cornelissen I, Kalucka J, García-Caballero M, Missiaen R, Huang H, Brüning U, Blacher S, Vinckier S, Goveia J, Knobloch M, Zhao H, Dierkes C, Shi C, Hägerling R, Moral-Dardé V, Wyns S, Lippens M, Jessberger S, Fendt SM, Luttun A, Noel A, Kiefer F, Ghesquière B, Moons L, Schoonjans L, Dewerchin M, Eelen G, Lambrechts D, Carmeliet P (2017) The Role of fatty acid β -oxidation in Lymphangiogenesis. **Nature** 542(7639):49-54
- Pilz GA, Carta A, Ayaz A, Staeuble A, Jessberger S*, Helmchen FH* (2016) Functional imaging of dentate granule cells in the adult hippocampus. **J Neuroscience** 13:7407-14 *shared senior author
- Rolando C, Erni A, Grison A, Beattie R, Engler A, Gokhale PJ, Milo M, Wegleiter T, Jessberger S, Taylor V (2016) Multipotency of Adult Hippocampal NSCs In Vivo Is Restricted by Drosha/NFIB. **Cell Stem Cell** 3:653-662
- Knobloch M, Jessberger S (2016) Metabolism and Neurogenesis. **Current Opinion in Neurobiology** 1(42):45-52.
- Moore DL, Jessberger S (2016) Creating Age Asymmetry: Consequences of Inheriting Damaged Goods in Mammalian Cells. **Trends in Cell Biol** (16)30137-4
- Moore DL, Pilz GA, Araúzo-Bravo MJ, Barral Y, Jessberger S (2015) A mechanism for the segregation of age in mammalian neural stem cells. **Science** 18;349
- Braun SMG, Pilz GA, Machado RAC, Moss J, Becher B, Toni N, Jessberger (2015) Programming hippocampal neural stem/progenitor cells into oligodendrocytes enhances remyelination in the adult brain after injury. **Cell Reports** 23:1679-85
- Knobloch M, Von Schoultz C, Zurkirchen L, Braun SMG, Vidmar M, Jessberger S (2014) Spot14-positive neural stem/progenitor cells in the hippocampus respond dynamically to neurogenic regulators. **Stem Cell Reports** 3:1-8
- Brunner J, Neubrandt M, Van-Weert S, Andrasi T, Kleine Borgmann FB, Jessberger S*, Szabadics J* (2014) Adult-born granule cells mature through two functionally distinct states. **eLife** 24, e03104 *shared corresponding author
- Pilz GA, Jessberger S (2014) ChATme up: how neurons control stem cells. **Nature Neuroscience** 7, 897-898
- Braun SMG, Jessberger S (2014) Adult neurogenesis: mechanisms and functional significance. **Development** 141,1983-1986
- Porcheri C, Suter U, Jessberger S (2014) Dissecting integrin-dependent regulation of neural stem cell proliferation in the adult brain. **J Neuroscience** 34(15):5222-32
- Braun SMG, Machado RAC, Jessberger S (2013) Temporal control of retroviral transgene expression in newborn cells in the adult brain. **Stem Cell Reports** 2:114-122
- Kleine Borgmann FB, Bracko O, Jessberger S (2013) Imaging neurite development of adult-born granule cells. **Development** 140:2823-2827
- Knobloch M, Braun SMG, Zurkirchen L, von Schoultz C, Zamboni N, Kovacs WJ, Araúzo-Bravo MJ, Karalay O, Suter U, Machado R, Roccio M, Lutolf MP, Semenkovich CF, Jessberger S (2013) Metabolic control of adult neural stem cell activity by Fasn-dependent lipogenesis. **Nature** 493(7431):226-30
- Vadodaria K, Brakebusch C, Suter U, Jessberger S (2013) Stage-specific functions of the small Rho GTPases Cdc42 and Rac1 for adult hippocampal neurogenesis. **J Neuroscience** 33(3):1179-118