Prof. Dr. Volker Busskamp

Personal Data

Title	Prof. Dr.
First name	Volker
Name	Busskamp
Current position	Professor (W2)
Current institution(s)/site(s), country	University Hospital Bonn, Department of Ophthalmology, Venusberg-Campus 1, 53127 Bonn
Identifiers/ORCID	orcid.org/0000-0001-7517-8944

Qualifications and Career

Stages	Periods and Details
Degree programme	Postgraduate Diploma in Biology, 2006 – 2007, NCCR "Frontiers in Genetics" International Doctoral School, University of Geneva, Switzerland Diploma in Biotechnology, 2001 – 2006, Technical University of Braunschweig, Germany
Doctorate	2007 – 2010 Mentor: Prof. Botond Roska, PhD in Neuroscience, University of Basel, Switzerland
Stages of academic/professional career	Since 2019 Professor (W2), Degenerative Retinal Diseases, Department of Ophthalmology, University Hospital Bonn, Germany (tenure March 2021) 2014 – 2021 Research group leader, Center for Regenerative Therapies, TU Dresden, Germany 2011 – 2014 Postdoctoral fellow (G. Church), Harvard Medical School & Harvard Wyss Institute for Biologically Inspired Engineering, Boston, USA 2010 – 2011 Postdoctoral fellow (B. Roska), FMI, Basel, Switzerland

Activities in the Research System

Committee involvement & activities in the field of academic self-governance:

Since 2022	Crossreader and panel member, EIC Pathfinder calls
Since 2021	Steering committee member, Cell Programming Facility, Bonn Technology Campus
Since 2020	Faculty member, Cluster of Excellence "ImmunoSensation^2", University of Bonn
Since 2020	Faculty member, Bonn International Graduate School "Neuroscience", UKB, University of Bonn
Since 2019	Steering committee member, Bonn Organoid Club, University of Bonn
Since 2019	Member of BONFOR commission, University of Bonn

2019	Junior faculty representative, TU Dresden, "Excellence University" application
Since 2017	Guest Associate Editor for Frontiers in Systems Neuroscience
Since 2015	Expert for EU-funded research, EIC Pathfinder and Marie Curie actions

Academic Distinctions: "Life and Health"- Research Prize 2022 by the University of Bonn (€50k) (2022); "Freigeist"- Fellowship – Extension, Volkswagen Foundation (€460k) (2021 – 2024); European Research Council (ERC), Proof-of-Concept Grant (€150k) (2021 – 2022); Patent Award by the German Ophthalmology Society (2021); Paul Ehrlich and Ludwig Darmstaedter Junior Award (€60k) (2017); European Research Council (ERC), Starting Grant (€1.5M) (2015 – 2021); "Freigeist"-Fellowship, Volkswagen Foundation (€1M) (2014 – 2020); Young Investigator Award, European Society for Gene and Cell Therapy (2014); Faculty Prize – University of Basel, Switzerland (2012); RP – Research Prize from Pro Retina Germany (2011); Ed Fischer Prize for the best PhD thesis at the FMI (2011); Elisabeth Gateff-PhD Award from the German Genetics Society (2011); Junior Life Sciences Award, Lausanne, Switzerland (2011).

Scientific Results

Citations: 5381, h-index: 28, i10-index: 40 (Google Scholar, 21.03.2024)

Category A (* corresponding author)

1. A.H.M. Ng, P. Khoshakhlagh, J.E.R. Arias, G. Pasquini, K. Wang, A. Swiersy, S.L. Shipman, E. Appleton, K. Kiaee, R.E. Kohman, A. Vernet, M. Dysart, K. Leeper, W. Saylor, J. Huang, A. Graveline, J. Taipale, D.E. Hill, M. Vidal, J.M. Melero-Martin, **V. Busskamp***, G.M. Church "A comprehensive library of human transcription factors for cell fate engineering" *Nat. Biotech.* **2021**, 39, 510–519. DOI: 10.1038/s41587-020-0742-6.

2. L.K. Kutsche, D.M. Gysi, J. Fallmann, K. Lenk, R. Petri, A. Swiersy, S.D. Klapper, K. Pircs, S. Khattak, P.F. Stadler, J. Jakobsson, K. Nowick, **V. Busskamp*** "Combined Experimental and System-Level Analyses Reveal the Complex Regulatory Network of miR-124 during Human Neurogenesis" *Cell Syst.* **2018**, 7, 438–452. DOI: 10.1016/j.cels.2018.08.011.

3. S.D. Klapper, E.J. Sauter, A. Swiersy, M.A.E. Hyman, C. Bamann, E. Bamberg, **V. Busskamp*** "On-demand optogenetic activation of human stem-cell-derived neurons" *Sci. Rep.* **2017**, 7, 14450. DOI: 10.1038/s41598-017-14827-6.

4. S.D. Klapper, A. Swiersy, E. Bamberg, **V. Busskamp*** "Biophysical Properties of Optogenetic Tools and Their Application for Vision Restoration Approaches" *Front. Syst. Neurosci.* **2016**, 10, 74. DOI: 10.3389/fnsys.2016.00074.

5. M. Voelkner, M. Zschaetzsch, M. Rostovskaya, R.W. Overall, **V. Busskamp**, K. Anastassiadis, M.O. Karl* "Retinal Organoids from Pluripotent Stem Cells Efficiently Recapitulate Retinogenesis" *Stem Cell Reports* **2016**, 6, 525–538. DOI: 10.1016/j.stemcr.2016.03.001.

6. **V. Busskamp**, N.E. Lewis, P. Guye, A.H.M. Ng, S.L. Shipman, S.M. Byrne, N.E. Sanjana, J. Murn, Y. Li, S. Li, M. Stadler, R. Weiss, G.M. Church* "Rapid neurogenesis through transcriptional activation in human stem cells" *Mol. Syst. Biol.* **2014**, 10, 760. DOI: 10.15252/msb.20145508.

7. **V. Busskamp**, J. Krol, D. Nelidova, J. Daum, T. Szikra, B. Tsuda, J. Jüttner, K. Farrow, B.G. Scherf, C.P.P. Alvarez, C. Genoud, V. Sothilingam, N. Tanimoto, M. Stadler, M. Seeliger, M. Stoffel, W. Filipowicz*, B. Roska* “miRNAs 182 and 183 are necessary to maintain adult cone photoreceptor outer segments and visual function” *Neuron* **2014**, 83, 586–600. DOI: 10.1016/j.neuron.2014.06.020.
8. A.S. Chuong, M.L. Miri, **V. Busskamp**, G.A.C. Matthews, L.C. Acker, A.T. Sørensen, A. Young, N.C. Klapoetke, M.A. Henninger, S.B. Kodandaramaiah, M. Ogawa, S.B. Ramanlal, R.C. Bandler, B.D. Allen, C.R. Forest, B.Y. Chow, X. Han, Y. Lin, K.M. Tye, B. Roska, J.A. Cardin, E.S. Boyden* “Noninvasive optical inhibition with a red-shifted microbial rhodopsin” *Nat. Neurosci.* **2014**, 17, 1123–1129. DOI: 10.1038/nn.3752.
9. **V. Busskamp**, J. Duebel, D. Balya, M. Fradot, T.J. Viney, S. Siegert, A.C. Groner, E. Cabuy, V. Forster, M. Seeliger, M. Biel, P. Humphries, M. Paques, S. Mohand-Said, D. Trono, K. Deisseroth, J.A. Sahel, S. Picaud, B. Roska* “Genetic reactivation of cone photoreceptors restores visual responses in retinitis pigmentosa” *Science* **2010**, 329, 413–417. DOI: 10.1126/science.1190897.
10. J. Krol, **V. Busskamp**, I. Markiewicz, M.B. Stadler, S. Ribi, J. Richter, J. Duebel, S. Bicker, H.J. Fehling, D. Schuebeler, T.G. Oertner, G. Schratt, M. Bibel, B. Roska*, W. Filipowicz* “Characterizing light-regulated retinal microRNAs reveals rapid turnover as a common property of neuronal microRNAs” *Cell* **2010**, 141, 618–631. DOI: 10.1016/j.cell.2010.03.039.

Category B

Patents

1. **V. Busskamp**, M. Zuzic, A. Kempe, Induced photoreceptor cells and methods for their production (2019), PCT/EP2020/055401.
2. A.H.M. Ng, G.M. Church, **V. Busskamp**, Transcription factors controlling differentiation of stem cells (2016), PCT/US2017/051122, WO2018049382A1.
3. D. Balya, **V. Busskamp**, P. Lagali, B. Roska, Novel therapeutical tools and methods for treating blindness (2008), granted 2014.