

Curriculum vitae

Surname: Jonas
First name: Peter Michael
ORCID: 0000-0001-5001-4804
Nationality: German
Family: Married, two children

1. Research keywords

Synaptic transmission, synaptic plasticity, transmitter release, presynaptic terminals, hippocampal mossy fiber synapses, coupling between Ca²⁺ channels and release sensors, functional connectomics, GABAergic interneurons, parvalbumin, hippocampus, hippocampal granule cells, dendritic integration, axonal signaling, subcellular patch-clamp recording, nanophysiology, two-photon imaging, modeling, brain slices, *in vivo* recordings, place coding, learning and memory, pattern separation, pattern completion.

2. Career

Professional appointments

Since 2010 Full Professor and founder of a Neuroscience Research Cluster, Institute of Science and Technology Austria (ISTA)
1998 & 2003 Sabbaticals, Vollum Institute, OHSU, Portland, Oregon, USA
1995–2010 Full Professor and Head of Department, Physiological Institute, University of Freiburg, Germany
1994–1995 Associate Professor, Physiological Institute, Technical University of Munich, Germany
1990–1994 Senior postdoc, Department of Cell Physiology, Max Planck Institute for Medical Research, Heidelberg, Germany (Prof. Bert Sakmann)
1988–1989 Postdoctoral fellow, Physiological Institute, University of Giessen, Germany (Prof. Werner Vogel)

Education and training

1992 Habilitation, University of Heidelberg
1987 MD in Physiology, summa cum laude, University of Giessen
1980–1986 Medical School, University of Giessen

3. Distinctions

Selected awards

2022 Magdalena Walz Professor for Life Sciences (first named professorship at ISTA)
2021 Peter Seeburg Integrative Neuroscience Prize of the Society for Neuroscience, USA (100,000 \$)
2019 Elected member of EMBO
2018 Schrödinger Award of the Austrian Academy of Sciences (ÖAW)
2016 Wittgenstein Award of the Austrian Minister of Science, Research and Economy and the Austrian Science Fund (1.5 Mio €)
2015 ERC Advanced Grant “GIANTSYN”
2015 Elected Member Academia Europaea
2011 David Smith Lecture, Oxford

- 2011 Adrian Lecture, Cambridge
- 2010 ERC Advanced Grant "NANOPHYS"
- 2009 Adolf-Fick Award, Physicomedical Society, Würzburg
- 2008–2010 Internal Senior Fellow of the Freiburg Institute for Advanced Studies
- 2008 Elected Member of the Academy of Sciences, Heidelberg
- 2007 Tsungming Tu Award, National Science Council of Taiwan (75,000 \$)
- 2006 Szentagothai Memorial Lecture, University of California, Irvine
- 2006 Gottfried Wilhelm Leibniz Award, German Research Council (1.55 Mio €)
- 2002 Elected Member of the German National Academy of Sciences Leopoldina
- 1998 Max Planck Research Award for international cooperation
- 1997 Medinfar European Prize in Physiology, President of Portugal
- 1994 Heinz Maier Leibnitz Award, German minister for education and science
- 1992 Heisenberg Fellowship, German Research Council
- 1991 Franz Vogt Award, University of Giessen

Offers for chair positions

- 2010 Founder of a Neuroscience Research Cluster, IST Austria (accepted)
- 2006 Chair of Neurobiology, University of California, Irvine (declined)
- 1999 Chair of Physiology and Pharmacology, Biocenter Basel, succession of Prof. J.G. Nicholls (declined)
- 1999 Chair of Physiology, University of Heidelberg, succession of Prof. J.C. Rüegg (declined)

Selected invited lectures (2016–present)

- 2025 Center for Brain Research Vienna, keynote lecture
- 2025 Annual Meeting of the Hungarian Neuroscience Society, keynote lecture
- 2024 SfN Minisymposium "Of mice and humans: Neuronal diversity in the hippocampus across species", Chicago, IL, USA
- 2024 International Winter Neuroscience Conference, Sölden, Austria
- 2024 Core2Core symposium, Göttingen, Germany
- 2023 International Winter Neuroscience Conference, Sölden, Austria
- 2023 Symposium "Brain plasticity Regulation and Modulation", Weizmann Institute, Rehovot, Israel
- 2022 Symposium "Neuronal representation", Freiburg, Germany
- 2022 Neural Circuits Dynamics Course, Venice, Italy
- 2022 EMBO Workshop, "Dendrites 2022", Heraklion, Crete
- 2022 International Winter Neuroscience Conference, Sölden, Austria
- 2021 Symposium "Structural and functional presynaptic plasticity", German Physiological Society, Frankfurt, Germany
- 2021 British Neuroscience Association, keynote lecture
- 2019 Gordon Research Conference "Excitatory Synapses and Brain Function", keynote lecture, Manchester, NH, USA
- 2018 Dutch Neuroscience Meeting "Fast spiking interneurons in network signal processing in health or disease", keynote lecture, Lunteren, Netherlands
- 2018 Caesar Conference "Missing links in neuroscience: Bridging scales in theory and experiment", Bonn, Germany

- 2018 Leopoldina symposium “From synapses to circuits in health and disease“, keynote lecture, Berlin, Germany,
2018 20th International Winter Neuroscience Conference, Symposium “Hippocampal mossy fiber synapses: From structure to function“, Sölden, Austria
2018 Brain Rhythms in Health & Disease Symposium, MIT, Cambridge, MA, USA
2017 Congressi Stefano Franscini “The assembly and function of neuronal circuits“, Ascona, Switzerland
2017 Gordon Research Conference “Inhibition in the CNS“, keynote lecture, Les Diablerets, Switzerland
2017 Blankenese conference “Synaptic plasticity versus stability“, Hamburg, Germany
2017 NWG Symposium “Tuning ion channels, myelin, and synapses for rapid axonal signaling“, Göttingen, Germany
2016 Opening symposium of Einstein Center for Neurosciences, Berlin, Germany
2016 IFM Colloquium 2016: „GABA signaling in the brain“, Paris, France
2016 OIST-JSPS symposium “Nanoscopic Synaptic Functions“, Okinawa, Japan
2016 International Neuroscience Conference: Linking cellular properties to neuronal network dynamics, Marseille, France
2016 “Molecular Mechanisms in the Synapse: Experiments and Modeling“, Janelia Farm, Ashburn, VA, USA
2016 FENS Symposium “Modeling of synaptic transmission: the presynaptic side“, Copenhagen, Denmark

4. Teaching

Courses taught at IST Austria

- Neuroscience track core course, new format, Fall 2024/25
Neuroscience track core course, 6 ECTS, Spring 2023/24
Neuroscience track core course, 6 ECTS, Spring 2022/23
Neuroscience track core course, 6 ECTS, Spring 2021/22
Neuroscience track core course, 6 ECTS, Spring 2020/21
Neuroscience track core course, 6 ECTS, Spring 2019/20
Neuroscience track core course, 6 ECTS, Spring 2018/19
Neuroscience track core course, 6 ECTS, Spring 2017/18
Molecules, Cells, Models breadth course, 3 ECTS, Fall 2016/17
Neuroscience track core course, 6 ECTS, Spring 2015/16
Molecules, Cells, Models breadth course, 3 ECTS, Fall 2015/16

Teaching at University of Freiburg

Main lectures in vegetative physiology (respiration, heart, cardiovascular system, renal physiology) and neurophysiology (nerve, muscle, synapse, motor systems, auditory system, visual system); introductory and advanced seminars in physiology.

5. Selected service at IST Austria

2011–2019, 2021–2024	Member of the Professorial Committee
2011, 2014–2017, 2024	Head of SSU Machine Shop
2011–2014	Head of the SSU Pre-Clinical Facility
2018–present	Chair of the Equipment Investments Committee
2012–2018	Chair of the Staff Scientist Committee
2017/18	Chair of the Ethics Committee
2017–2019, 2020–present	Member of the External Awards Committee
2017–2019	Member of the Lab Building 6 Planning Committee

6. Selected service to the scientific community

Editorships

2016–present	Member of the Editorial Board of Neuron
2013	Top reviewer for The Journal of Neuroscience (with an extraordinary number of thoughtful reviews)
2007–present	Member of the Board of Reviewing Editors of Science (~ 3 papers per week)
2001–2006	Member of the Editorial Board, The Journal of Neuroscience
1996–2003	Member of the Editorial Board, The Journal of Physiology (London)

Invited nominator for Gottfried-Wilhelm-Leibniz prize, Kyoto Prize, Tang Prize, Breakthrough Prize, Heinrich Wieland Prize, and Nobel Prize in Physiology or Medicine.

Coordinator of research teams

2022	Coordinator of Cluster of Excellence application “Excellent Brains”, Deputy Director of Research (Approved; starting date: 01.12.2024)
2011–present	Founder of a Neuroscience Research Cluster, IST Austria
2008–2010	Founder and Coordinator of the Collaborative Research Center “Synaptic Mechanisms of Neuronal Network Function” (SFB 780, 16 projects)
2005–2007	Member of Board of Directors of the Collaborative Research Center “Neuronal Differentiation and Neurotransmission” (SFB 505)
1998–2001	Principal Investigator in a Human Frontiers Science Program Organization Grant, “Inhibitory synaptic signaling in interneuron networks” (with Gary Westbrook, Kunihiro Obata, and Bill Wisden)

Conference organization

2024	Chair, FENS Satellite Symposium “Unravelling synaptic transmission in hippocampal mossy fiber synapses”, Klosterneuburg / Vienna, Austria.
2024	Chair, Symposium “Synaptic mechanisms of higher-order computations in neuronal networks: From experiment to model and back”, International Winter Neuroscience Conference, Sölden, Austria.
2023	Co-chair, Symposium “Information routing and re-routing in hippocampal circuits”, International Winter Neuroscience Conference, Sölden, Austria.
2017	Co-chair, minisymposium “The Dentate Gyrus”, Society for Neuroscience meeting, Washington DC, USA

2017 15th biennial meeting of the Austrian Neuroscience Association, Klosterneuburg, Austria (organizer, together with Sigismund Huck).

2014 Chair, Gordon Research Conference “Synaptic Transmission”, Waterville, NH, USA

2012 Vice-Chair, Gordon Research Conference “Synaptic Transmission”, Waterville, NH, USA

2005 President of the Jacques Monod conference "Synaptic communication in neuronal networks: From molecule to code", Roscoff, France

Selected committees and boards

2019 Member of the ERC Starting grant evaluation panel LS5

2013 Member of the ERC Synergy grant evaluation panel

2004–2007 Member of the grant review panel (Fachkollegium) Neuroscience of the German Research Council

Peer review activities

Reviewer for Nature, Science, Cell, Neuron, Nature Neuroscience, Nature Medicine, Nature Communications, Nature Reviews Neuroscience, Cell Reports, ELife, Plos Biology, Plos Computational Biology, PNAS, The Journal of Neuroscience, and The Journal of Physiology (currently ~ 20 papers per year).

Reviewer for ERC, Humboldt Foundation, Leopoldina, the German Research Council, and EMBO (currently ~ 5 applications per year)

7. Research grants

2024–2029 Cluster of excellence CoE 16 “Neuronal circuits in health and disease”, acronym “GABA neurons” € 840.000

2024–2028 FWF Stand Alone Grant “Synapses, cell types, and microcircuits in the human hippocampus” € 399.000

2022–2026 FWF Stand Alone Grant “GABA release from PV- and CCK-interneuron output synapses” € 596.000

2017–2022 Wittgenstein Award of the FWF € 1.5 Mio

2017–2022 European Advanced Grant “Biophysics and circuit function of a giant cortical glutamatergic synapse” GIANTSYN € 2.67 Mio

2016–2019 FWF Doktoratskolleg “CCHD”

2011–2016 European Advanced Grant “Nanophysiology of fast-spiking, parvalbumin-expressing GABAergic interneurons” NANOPHYS € 2.5 Mio

8. Selected technology transfer, educational and outreach activities

Technology transfer: Software, Patents, Companies

The Jonas group has developed software for electrophysiology, in particular Stimfit (<https://stimfit.org>), a program package for high-level quantitative analysis of synaptic currents and potentials. The Jonas group has two ongoing collaborations with Leica Microsystems. In particular, the group has developed the micro slicer VT 1200, based on the previously developed principles of generation of planar vibrations (Geiger et al., 2002).

Educational and outreach activities

Presentation at “Wissensdurst” 2018

Lab tours for academic visitors, legislators (national and international), and representatives of industry (~5 per year).

Contribution of the Jonas group to the Science Education day at IST Austria.

Preparation of several press releases related to recently published papers, as highlighted at the IST Austria webpage (<https://ist.ac.at/news-media/news>).

9. Student and postdoc alumni:

Student alumni

Henrik Alle (MD/PhD 2002), Privatdozent at the Charité Berlin; Yexica Aponte (PhD 2006), Chief of Neuronal Circuits and Behavior Unit, NIH, NIDA/IRP, Baltimore; Chong Chen (PhD 2023), Assistant Professor at Westlake University; Jörg Geiger (PhD 1996), Full Professor at Charité Berlin; Stefan Hallermann (PhD 2005), Full Professor at University of Leipzig; Duk-Su Koh, Associate Professor at University of Washington, Seattle; Chen-Chang Lien (MD/PhD 2003), Full Professor at National Yang-Ming University, Taipei; Christian Pawlu (MD/PhD 2004), Head of Corporate Development, Fresenius Kabi; Christoph Schmidt-Hieber (MD/PhD 2005), Full Professor at University of Jena.

Postdoc Alumni

Itaru Arai, Assistant Professor at Keio University, Tokyo; Marlene Bartos, Full Professor at University of Freiburg; Yoav Ben Simon, Assistant Investigator, Allen Institute; Josef Bischofberger, Associate Professor at University of Basel; Jian Gan, Group leader University of Edinburgh, Scotland; Manfred Heckmann, Full Professor at University of Würzburg; Hua Hu, Associate Professor, University of Oslo, Norway; Marco Martina, Associate Professor at Northwestern University, Chicago; Yuji Okamoto, Assistant Professor at Akita University, Japan; Shi-Ming Weng, Professor at National Chung Cheng University, Chiayi; Xiaomin Zhang, Assistant Professor University of Zürich, Switzerland.

10. Major collaborations

Scientific collaborations

Marlene Bartos, University of Freiburg, Germany – GABAergic interneurons in network oscillations;

Jozsef Csicsvari, IST Austria, Austria – Synaptic mechanisms of spatial coding;

Johann Danzl, IST Austria, Austria – Superresolution microscopy;

Seth Grant, Edinburgh, UK – Proteomic analysis of central synapses;

Michael Häusser, UCL, United Kingdom – Holographic optogenetics;

Hannah Monyer, Heidelberg, Germany – Single-cell RT-PCR and RNA-seq;

Karl Rössler, Vienna, Austria – Cells, synapses, and circuits in human tissue;

Ryuichi Shigemoto, IST Austria, Austria – Freeze fracture replica immunolabeling;

Angus Silver, UCL, United Kingdom – Biophysics of synaptic vesicle pools;

Thomas Südhof, Stanford, USA – Ca²⁺ sensors and vesicle pools;

Sam Young, University of Iowa / Max Planck Florida, USA – Synaptic Ca²⁺ sensors.

Industrial collaborations

Leica Microsystems, Nussloch, Germany and Vienna, Austria.

Publication record

Number of citations total: 29068 (Google Scholar), Hirsch index total: 81,
Publications total: 99 original papers, 20 reviews, 11 book articles, and 1
Scholarpedia publication, Publications with 100 or more citations: 67,
Publications with 1000 or more citations: 4 (March 2025).

A handwritten signature in blue ink, appearing to read "Peter J.", is centered on the page.

Klosterneuburg, March 10, 2025