Curriculum vitae Prof. Dr. GAIA TAVOSANIS

1. Short summary

Gaia Tavosanis (date of birth 7th May 1970)

Present position: Full Professor of Developmental Biology (W3)
RWTH, Aachen

Scientific education and academic career:
Studies of Biology in Pisa, Italy (1988- 1994) and Heidelberg, Germany (1991); Diploma (Biology) University of Pisa (1994); Ph.D. in Biology (EMBL, Heidelberg, 1999). Postdoc at University of California, San Francisco (UCSF), USA (2000-2002); Habilitation in Neurobiology (2013); 2003-2011: Head of a Junior Research Group at the MPI of Neurobiology, Martinsried, Germany; 2011- 2022 Research Group Leader at DZNE, Bonn, Germany (W2 2011- 2016; W3 2016-2022); offered a full professorship in Animal Physiology at the University of Marburg (2015)- declined; 2017-2022 Full Professor of Neurogenetics (W3) at the University of Bonn; Speaker of Topic 1 "Brain Function" of the DZNE 2019-2022. Since December 2022 Full Professor of Developmental Biology (W3), RWTH Aachen.

Research Area: Cell Biology of neuronal differentiation and plasticity of the nervous system
Approaches:
- Cell biological approaches to visualize and manipulate neurons *in vivo*
- *Drosophila* genetics
- Confocal and live cell imaging
- *In vivo* imaging and functional *in vivo* imaging
- Learning and memory behavioural paradigms in *Drosophila*

Recent key publications:
Richard M., Doubková K., Nitta Y., Kawai H., Sugie A.*, Tavosanis G.* (2022) A quantitative model of sporadic axonal degeneration in the Drosophila visual system. **Journal of Neuroscience** 42(24):4937-4952. doi: 10.1523/JNEUROSCI.2115-21.2022.
Stürner T., Ferreira Castro A., Philipps M., Cuntz H.* and Tavosanis G.* (2022) The branching code: a model of actin-driven dendrite arborisation. **Cell Reports** 39(4):110746. doi:10.1016/j.celrep.2022.110746.
Prisco L., Deimel S.H., Yeliseyeva H., Fiala A. and Tavosanis G. (2021) The anterior paired lateral neuron normalizes odour-evoked activity in the *Drosophila* mushroom body calyx. **eLife** 10:e74172 doi: 10.7554/eLife.74172
Baltruschat L, Prisco L, Ranft P, Lauritzen JS, Fiala A, Bock DD, Tavosanis G (2021) Circuit reorganization in the Drosophila mushroom body calyx accompanies memory consolidation. **Cell Reports** 34 (11): 108871 https://doi.org/10.1016/j.celrep.2021.108871
Ferreira Castro A, Baltruschat L, Stürner T, Bahrami A, Jedlicka P, Tavosanis G*, Cuntz H* (2020) Achieving functional neuronal dendrite structure through sequential stochastic growth and retraction. **Elife** Nov 26;9:e60920
Marchetti G and Tavosanis G. (2017) Steroid Hormone Ecdysone Signaling Specifies Mushroom Body Neuron Sequential Fate via Chinmo. **Curr Biol.** 27(19):3017-3024.
Sugie A, Hakeda-Suzuki S, Suzuki E, Silies M, Shimozono M, Mohl C, Suzuki T and Tavosanis G (2015) Molecular Remodeling of the Presynaptic Active Zone of Drosophila Photoreceptors via Activity-Dependent Feedback. **Neuron** 86(3):711-25

2. Research statement

My group investigates the cell biological mechanisms underlying the differentiation and plasticity of neuronal dendrites. The correct branching of neuronal dendrites supports network formation during development and appropriate computation in the mature nervous system. Furthermore, dendrites are modified during plastic processes in the adult nervous system, potentially including memory formation, and loose their morphological and functional characteristics in several neurodegenerative processes.

We implement high resolution imaging to investigate how dendrites differentiate *in vivo* and how they can be modified upon changes of sensory stimuli in the adult nervous system. We combine this microscopy approach with cutting-edge *Drosophila* genetics and molecular biology to investigate molecularly the cellular mechanisms of dendrite branching. Using these approaches, we have recently demonstrated that distinct molecular regulation of the cytoskeleton underlies the diversity of dendrite morphologies observed among neuronal types. Indeed, actin regulation and nucleation of microtubules both play a central role in our research, as major players in establishment and plasticity of cellular architecture. We postulate that same or similar molecular players are involved in the initial establishment and in the physiological dynamic remodelling of the adult nervous system. Therefore, we have identified and characterized circuits in the adult nervous system of *Drosophila* that allow us to address plastic changes and have demonstrated that developmental circuit assembly in *Drosophila* depends on modulation of input activity. To investigate the functional outcome of synaptic remodelling and of structural cellular modifications, we have established behavioural paradigms, including learning and memory essays, and have set up functional imaging using genetically encoded calcium indicators and two-photon microscopy. With these tools, we have reported circuit rewiring accompanying memory consolidation in the adult fly brain. Thus, we investigate the structural, molecular, functional and behavioural outcome of the nervous system plastic response to a modified environment.

3. Full Curriculum vitae of Prof. Dr. GAIA TAVOSANIS

Date and place of birth:	7 May 1970, Ivrea, Italy
Sex:	female
Nationality:	Italian
Family status:	married, three children (1999, 2005, 2008)

Current position: Full Professor, Chair of Developmental Biology (W3 level)

RWTH Aachen
Institut für Entwicklungsbiologie
Worringerweg 3
52074 Aachen

gaia.tavosanis@devbiol.rwth-aachen.de

Webpage

Scientific education

1994 Graduation in Biology at the University of Pisa

1999 **PhD** (EMBL) University of Heidelberg, Germany

2013 **Habilitation** in Neurobiology at LMU, Munich (P.D. Uni Bonn since 2015)

Academic Career

1995- 1999 PhD student in the laboratory of Dr. C. Gonzalez, **EMBL**, Heidelberg, Germany

1999 Post-doctoral work in the laboratory of Dr. C. Gonzalez (EMBL- Cell Biology Postdoctoral Fellowship)

2000- 2002 **Post-doc** in the laboratory of Prof. Dr. Yuh-Nung Jan, **UCSF**, San Francisco, CA, USA (DFG Postdoctoral Grant)

2003- 2011 **Junior Group Leader** at the MPI of Neurobiology, Munich, Germany

2011-2016 **Research Group Leader** (W2 level) at the DZNE, Bonn, Germany

2016- 2022 **Research Group Leader** (W3 level) at the DZNE, Bonn

2017- 2022 **Full Professor of Neurogenetics** (W3) at the University of Bonn

2022- present **Full Professor, Chair of Developmental Biology** (W3) at the RWTH Aachen

Selected invited lectures (since 2015)

2023 Invited speaker, Molecular Biology Society of Japan meeting, Kobe, Japan
2023 Invited lecturer, Summer school: Neural circuit development and plasticity, Utrecht, NL
2023 Invited speaker, Mushroom Body meeting, Göttingen, Germany
2023 Invited speaker, Ringberg Meeting, Ringberg, Germany
2023 Institute for Biochemistry and Molecular Cell biology, UKA, Aachen, Germany
2022 Keynote lecture, Annual Retreat CECAD, Cologne, Germany
2022 Final Symposium of the CRC 889 (DFG), Göttingen, Germany
2022 Keynote lecture, Retreat RTG2416 Graduate school, RWTH Aachen, Germany
2022 Invited speaker, CureND Workshop at FENS, Paris, France
2022 Plenary Lecture, NeuroDoWo 2022, Cologne, Germany
2022 Keynote lecture at the StratNeuro Retreat of the Karolinska Institutet, Runö, Sweden
2022 Invited lecture, Institute of Development and Neurobiology, University Mainz, Germany
2022 Speaker at the Cologne *Drosophila* Neurobiology Master course
2021 Meeting of the Study Group "Molecular Neurobiology", German Society for Biochemistry and Molecular Biology, Kaiserslautern
2021 Mushroom Body meeting (virtual) https://mushroom-body-meeting.org/
2021 Department of Neuroscience, Brown University, Providence, RI, USA
2020 Selected EMBO Molecular and developmental biology of *Drosophila*, Kolymbari, Greece

2020 MRC Laboratory of Molecular Biology (LMB), Cambridge, UK
2020 School of Biosciences, University of Birmingham, UK
2019 Wellcome Trust Meeting on Neuronal Maturation, London, UK
2019 Session Chair at the CSH Neurobiology of Drosophila conference, CSH
2019 Invited "Meet the expert" speaker, Society for Neruoscience, Chicago
2019 Selected Symposium, Society for Neuroscience, Chair and Speaker, Chicago
2018 Invited speaker Flying Senses, Goettingen, Germany
2018 Invited Speaker Neurofly, Krakow
2018 Institute for Physiology and Pathophysiology, Philipps-University Marburg, Germany
2018 Department of Fundamental Neurosciences, University of Lausanne, Switzerland
2018 Ringberg Meeting: Big Questions in Biomedical Sciences, Ringberg Castle, Germany
2017 CRCA – CNRS, Université Paul Sabatier, Toulouse
2017 Invited speaker Cell Biology of the Neuron, EMBO, Crete
2017 Invited speaker Goettingen Neuroscience Meeting
2017 Invited speaker Bonn Brain3 Meeting, Bonn
2017 Selected speaker Mushroom Body Conference, Janelia Research Campus, VA, USA
2017 Department of Developmental Neurobiology, King's College, London
2016 Cellular and Molecular Neurobiology, Zoological Institute, TU Braunschweig
2016 Invited speaker Neural Coding Workshop, Cologne
2016 Actin Nucleators Meeting (SPP), Regensburg
2016 Janelia Research Campus, HHMI, Ashburn, VA, USA
2016 Riken Brain Science Institute, Tokyo, Japan
2016 Invited speaker Digital representation of neuronal morphologies and tissue workshop, OIST, Okinawa, Japan
2016 Actin School (SPP) PhD student Retreat, Regensburg
2015 University of Mainz, Institut für Zoologie
2015 invited speaker Building the brain: from genes to circuits and cognition, Royal Society, London, UK
2015 Invited speaker Symposium on Neurogenetics, University Leipzig
2015 Actin Dynamics Meeting, Regensburg
2015 Invited speaker 11th Göttingen Meeting of the German Neuroscience society
2015 ZMNH, Hamburg

CW. Chan and G.T., Selected talk, Bonn Brain 3 Meeting, Bonn, 2023
K. Doubkova and G.T., Selected Talk, EMBO Workshop Cell Biology of the nervous system, Crete, 2023
A. Ziegler, Selected talk, EMBO Workshop Cell Biology of the nervous system, Crete, 2023
A. Ziegler and G.T, Selected talk, Neurofly, Saint Malo, 2022
K. Doubkova and G.T., Selected Talk, CureND, London 2022
T. Stuerner and G.T. Selected talk, Neurofly, Krakow, 2018
A. Ziegler and G.T, Selected talk, EMBO workshop on Molecular Neurobiology in Crete, 2018
L. Baltruschat and G.T Selected talk, Neurofly, Crete, 2016
G. T. Selected talk, International Neural Coding Workshop, Cologne, 2016
G. Marchetti and G.T. Selected talk, EMBO Workshop Mechanisms of neuronal remodeling, Germany, 2016
G.T. Selected talk, EMBO Meeting Neural Circuits, Crete, 2015
G. Marchetti and G.T., Selected talk, Eurofly, Heidelberg, 2015

A. Sugie and G.T. Selected talk, Neurofly, Crete, 2014
A. Sugie and G.T. Selected talk, Drosophila Research Conference, Washington, US, 2013
A. Sugie and G.T. Selected talk, DGZ Meeting, Dresden, 2012
J. Negele and G.T. Selected talk, Neurofly Conference, Manchester, 2010

Reviewer activity

Ad hoc reviewer for the following journals:
Current Biology; Current Opinions in Neurobiology; Development; Developmental Biology; Developmental Neurobiology; eLife; EMBO Journal; Frontiers in Neuroscience; Journal of Cell Science; Journal of Cell Biology; Molecular Cellular Neuroscience; Molecular Biology of the Cell; Mechanisms of Development; Neuron; PLoS Biology; Science

Ad hoc reviewer for the following funding agencies:
DFG; ERC; Research Foundation –Flanders (FWO); Wellcome trust; BBSRC

4. List of Publications

1) Nitta Y., Kawai H., Maki R., Osaka J., Hakeda-Suzuki S., Nagai Y., Doubková K., Uehara T., Watanabe K., Kosaki K., Suzuki T., Tavosanis G. and Sugie A. (2023)
Hum Mol Genet. ddac307. doi: 10.1093/hmg/ddac307.

2) Richard M., Doubková K., Nitta Y., Kawai H., Sugie A.*, Tavosanis G.* (2022)
A quantitative model of sporadic axonal degeneration in the Drosophila visual system
Journal of Neuroscience 42(24):4937-4952. doi: 10.1523/JNEUROSCI.2115-21.2022.
(*shared corresponding authorship).

3) Stürner T., Ferreira Castro A., Philipps M., Cuntz H.* and Tavosanis G.* (2022)
The branching code: a model of actin-driven dendrite arborisation.
Cell Reports 39(4):110746. doi: 10.1016/j.celrep.2022.110746.
(*shared senior and corresponding authorship).

4) Prisco L., Deimel S.H., Yeliseyeva H., Fiala A. and Tavosanis G. (2021)
The anterior paired lateral neuron normalizes odour-evoked activity in the *Drosophila* mushroom body calyx.
eLife 10:e74172 doi: 10.7554/eLife.74172

5) Baltruschat L., Ranft P., Lauritzen S., Fiala A., Bock D. and Tavosanis G. (2021)
Circuit rewiring in the *Drosophila* mushroom body calyx accompanies memory consolidation.
Cell Reports 34(11): 108871. https://doi.org/10.1016/j.celrep.2021.108871

6) Ferreira Castro* A, Baltruschat L, Stürner T, Bahrami A, Jedlicka P, Tavosanis* G, Cuntz* H. (2020)
Achieving functional neuronal dendrite structure through sequential stochastic growth and retraction.
eLife Nov 26;9:e60920. doi: 10.7554/eLife.60920.
(*shared corresponding authorship).

7) Marchetti G and Tavosanis G. (2019)
Modulators of Hormonal Response Regulate Temporal Fate Specification in the Drosophila Brain.
PLoS Genet. 15(12):e1008491.

8) Stürner T, Tatarnikova A, Mueller J, Schaffran B, Cuntz H, Zhang Y, Nemethova M, Bogdan S, Small V, Tavosanis G. (2019)
Transient localization of the Arp2/3 complex initiates neuronal dendrite branching *in vivo.*
Development 4:146(7).

9) Ziegler AB, Thiele C, Tenedini F, Richard M, Leyendecker P, Hoermann A, Soba P and Tavosanis G. (2017)
Cell-Autonomous Control of Neuronal Dendrite Expansion via the Fatty Acid Synthesis Regulator SREBP.

Cell Rep. 21(12):3346-3353 doi: 10.1016/j.celrep.2017.11.069.

10) Marchetti G and Tavosanis G. (2017)
Steroid Hormone Ecdysone Signaling Specifies Mushroom Body Neuron Sequential Fate via Chinmo.
Curr Biol. 27(19):3017-3024 doi: 10.1016/j.cub.2017.08.037

11) Richard M, Bauer R, Tavosanis G and Hoch M. (2017)
The gap junction protein Innexin3 is required for eye disc growth in *Drosophila*.
Dev Biol. 425(2):191-207 doi: 10.1016/j.ydbio.2017.04.001.

12) Sugie A*, Möhl C*, Hakeda-Suzuki S, Matsui H, Suzuki T and Tavosanis G (2017)
Analyzing synaptic modulation of *Drosophila* photoreceptors after exposure to prolonged light. (*Co-corresponding authors)
J Vis Exp. (120) doi: 10.3791/55176.

13) Sugie A., Hakeda-Suzuki S., Suzuki E., Silies M., Shimozono M., Mohl C., Suzuki T.* and Tavosanis G.* (*Co-corresponding authors) (2015)
Molecular Remodeling of the Presynaptic Active Zone of Drosophila Photoreceptors via Activity-Dependent Feedback
Neuron 86(3):711-25
Preview : Mathias A. Böhme, Stephan J. Sigrist. Lights On for the Molecular Players of Presynaptic Plasticity. Neuron, Volume 86 (3):603-604 (2015)

14) Berger-Müller S., Sugie A., Takahashi F., Tavosanis G., Hakeda-Suzuki S., Suzuki T. (2013)
Assessing the role of cell-surface molecules in central synaptogenesis in the Drosophila visual system.
PLoS One 8(12):e83732

15) Nagel J., Delandre C., Zhang Y., Förstner F., Moore A.W. and Tavosanis G. (2012)
Fascin controls neuronal class-specific dendrite arbor morphology.
Development 139(16):2999-3009

16) Christiansen F., Zube C., Andlauer T.F., Wichmann C., Fouquet W., Owald D., Mertel S., Leiss F., Tavosanis G., Farca Luna A.J., Fiala A., Sigrist S.J. (2011)
Presynapses in Kenyon Cell Dendrites in the Mushroom Body Calyx of Drosophila.
J Neurosci. 31 (26): 9696-9707

17) Kremer M.C., Christiansen F., Leiss F., Paehler M., Knapek S., Forstner F., Kloppenburg P., Sigrist S.J. and Tavosanis G. (2010)
Structural long-term changes at Mushroom Body input synapses
Current Biology 20 (21):1938-44

18) Leiss F., Groh C., Butcher N.J., Meinertzhagen I. A. and Tavosanis G. (2009)
Synaptic organization of the adult *Drosophila* mushroom body calyx
J Comp. Neurology 517 (6):808-824

Evaluated at the Faculty of 1000

19) Leiss F., Koper E., Hein I., Fouquet W., Lindner J., Sigrist S. and Tavosanis G. (2009)
Comprehensive characterization of dendritic spines in the *Drosophila* central nervous system
Dev. Neurobiology 69 (4):221-234

20) Dimitrova S., Reissaus A. and Tavosanis G. (2008)
Slit and Robo regulate dendrite branching and elongation of space-filling neurons in *Drosophila*
Dev. Biol. 324 (1): 18-30

21) Petritsch C.*, Tavosanis G.*, Turck C.W., Jan L.Y. & Jan Y.N. (2003)
*Equal contribution
The *Drosophila* myosin VI Jaguar controls spindle orientation and basal determinant targeting in mitotic neuroblasts
Dev. Cell 4: 273-281
Highlight: Tuxworth R. and Chia W. Asymmetric cell division: Miranda chauffeured by Jaguar? Mol Cell. 11:288 (2003).

22) Tavosanis G.‡ and Gonzalez C. (2003)
γ-Tubulin function during female germ-cell development and oogenesis in *Drosophila*
PNAS 100: 10263-10268
‡Corresponding author

23) LLamazares S., Tavosanis G. and Gonzalez C. (1999)
Cytological characterization of the mutant phenotypes produced during early embryogenesis by null and hypomorph alleles of the *γTub37C* gene in *Drosophila*.
J. Cell Sc. 112: 659- 667

24) Tavosanis G., LLamazares S., Goulielmos G. and Gonzalez C. (1997)
Essential role for γ-tubulin in the acentriolar female meiotic spindle of *Drosophila*
EMBO J. 16: 1809- 1819

25) Simili M., Pellerano P., Pigullo S., Tavosanis G., Ottaggio L., de Saint-Georges L., Bonatti S. (1997)
6DMAP inhibition of early cell cycle events and induction of mitotic abnormalities.
Mutagenesis 12: 313- 319

26) Simili M., Pellerano P., Tavosanis G., Arena G., Bonatti S., Abbondandolo A. (1995)
The induction of aneuploidy by alkylated purines: effects on early and late cell cycle events.
Mutagenesis 10: 105- 111

Manuscripts submitted or in revision (July 2023)

Yun Zhang*, Hsin-Ho Sung*, Anna B. Ziegler*§, Ying-Chieh Wu*, Ricardo Viais, Carlos Sánchez-Huertas, Fikret-Gürkan Agrican, Ying-Ju Cheng, Kousuke Mouri, Tadashi Uemura, Jens Lüders, Cheng-Ting Chien§ and Gaia Tavosanis

Augmin complex activity fine-tunes dendrite morphology through non-centrosomal microtubule nucleation *in vivo.* Submitted.
(*shared first and § shared corresponding authorship).

Baltruschat L., Tavosanis G. * and Cuntz H. *
A developmental stretch-and-fill process that optimises dendritic space filling.
https://doi.org/10.1101/2020.07.07.191064 . In revision.
(*shared senior and corresponding authorship).

Reviews

Wilson Horch H, Rössler W, Tavosanis G. (2022)
Editorial: Structural Plasticity of Invertebrate Neural Systems.
Front Physiol. 13:874999. doi: 10.3389/fphys.2022.874999

Tavosanis G. (2021)
Dendrite enlightenment
Current Opinion in Neurobiology 69:222-230. doi: 10.1016/j.conb.2021.05.001.
Invited review

Kilo L, Stürner T, Tavosanis G, Ziegler AB. (2021)
Drosophila Dendritic Arborisation Neurons: Fantastic Actin Dynamics and Where to Find Them.
Cells 10(10):2777. doi: 10.3390/cells10102777
Invited review

Ziegler A.B. and Tavosanis G. (2018)
Glycerophospholipids - Emerging players in neuronal dendrite branching and outgrowth.
Dev Biol. pii: S0012-1606(18)30341-5. doi: 10.1016/j.ydbio.2018.12.009.
Invited review

Sugie A. , Marchetti G. and Tavosanis G. (2018)
Structural aspects of plasticity in the nervous system of Drosophila.
Neural Dev. 13:14. doi: 10.1186/s13064-018-0111-z
Invited review

Stürner T. and Tavosanis G. (2016)
Rotating for elongation: Fat2 whips for the race.
J Cell Biol 21: 487-489

Tavosanis G. (2012)
Structural dendritic plasticity
Dev. Neurobiology 72(1):73-86.
Invited review

Gonzalez C., Tavosanis G. and Mollinari C. (1998)
Centrosome and microtubule organization during *Drosophila* development.
J Cell Sc.111: 2697- 2706

Book chapters

Tavosanis G.
The cell biology of dendrite differentiation. (Book chapter)
In „ Dendritic computations through morphology and connectivity“, Remme M., Torben-Nielsen B. and Cuntz H., Editors, Springer. (2013)

Bonatti S., Simili M., Pellerano P., Tavosanis G. and Abbondandolo A.
Cellular targets for the aneugenic action of alkylating agents.
In “Proceedings on Chromosome segregation and aneuploidy” edited by A. Abbondandolo and B.K. Vig. IST, Genova. Pp.: 265- 273 (1996)

5. Past and present research funding

NRW Netzwerke „iBehave“ from the Land North Rhine-Westphalia in 2022. I serve as one of the coordinators and served as a coordinator for DZNE (until I moved to the RWTH in December 2022) for this large grant of 20 million Euro between the University of Bonn, the University of Cologne, the University of Aachen RWTH, and the Research Centers DZNE, MPI for Neurobiology of Behavior and Jülich.
Funding for my lab amounts to 258 000 € (01.08 2022- 31.12.2026).

DFG Forschergruppe “Entschlüsselung eines Gehirn-Schaltkreises: Struktur, Plastizität und Verhaltensfunktion des Pilzkörpers von *Drosophila*” granted in January 2019 for 3 years. Renewed in 2021 for 3 years. Total amount 544 000 €.

DFG Schwerpunktprogramm “Actin nucleators” awarded Feb 2010 for 3 years. Renewed in Jan 2013 for 3 years. Total amount: 330.000 €.

DFG Schwerpunktprogramm “Zellpolarität” granted in July 2003 for four years. Total amount: 260 000 €.

Alexander von Humboldt post-doc stipend to Dr. A. Sugie (2011-2013)

Janelia Visitor Project with Dr. D. Bock (2016): supported a 4-month stay at Janelia of the PhD student P. Ranft from my lab and my visit to Janelia during this period.

6. Current collaborations

Dr. Kevin Briggman, Caesar, Bonn, Germany (FIB-SEM reconstruction of degenerating fly photoreceptors)
Dr. Hermann Cuntz, Ernst Strüngmann Institute (ESI) for Neuroscience in Cooperation with Max Planck Society, Frankfurt (Computational modeling of neuronal dendrite differentiation).
Prof. Dr. André Fiala, Schwann-Schleiden-Forschungszentrum, Abtl. Molekulare Neurobiologie des Verhaltens, Georg-August-Universität Göttingen (Functional imaging of

adult fly mushroom body neuron response to odor stimulation prior and after associative learning).
Prof. Dr. Martin Nawrot, Zoology Department, Cologne University (Modeling of circuit wiring in the *Drosophila* mushroom body)
Prof. Dr. Atsushi Sugie, Department of Neuroscience of Disease (in Brain Research Institute) Center for Transdisciplinary Research, Niigata University (Mechanisms of neurodegenerationin the *Drosophila* eye).

7. Teaching

Fromm the WS 2023/ 2024 I will have a regular teaching load at the RWTH covering Developmental biology in full in the Bachelor and Masters courses.

Although I have had no teaching obligations at the MPI and at the DZNE, I followed a regular and broad teaching curriculum including lecturing and practical courses in Munich (2003- 2011) and in Bonn (2011- 2016), leading to my Habilitation in Munich (2013) and Umhabilitation in Bonn (2015).
In the period April 2017- December 2022 I was a Full Professor at the University of Bonn with a required teaching load of 2 SWS that I usually exceed.

Habilitation in Neurobiology from the Ludwig-Maximilian University in Munich in 2013.
Umhabilitation in Molecular Biomedicine at the Rheinische Friedrich-Wilhelms-Universität Bonn in 2015 (inaugural lecture at the Dies Academicus on December 2nd 2015)

Bonn

Lecturer in the Lecture series Allgemeine Biologie for first year Bachelor students in the Molecular Biomedicine course of studies, University of Bonn, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020/ 2021, 2021/2022.

Together with Prof. F. Bradke, Prof. M. Pankratz and Prof. W. Witke, I have organized the new module “Assembly of neural circuits” offered within the Masters in Neuroscience at the University of Bonn SS 2017, SS 2018, SS 2019, SS 2020, SS 2021, SS2022

From the WS 2020/ 2021 I am also offering Method Courses within the newly funded Masters in Molecular Cell Biology at the Uni Bonn WS 2020/2021; WS 2021/2022

Instructor at the Methods in Molecular Biology seminar series, University of Bonn, 2013

Host lecturer at the yearly retreat of the International Master's Programme in Experimental and Clinical Neuroscience of the University of Regensburg, Regensburg, 2013

Lecturer in the International Graduate School THEME, Theoretical and Experimental Medicine, University of Bonn, 2012

For the BIGS-Neuroscience graduate school in Bonn (http://bigs-neuroscience.de/), including all graduate students in neuroscience in Bonn, I developed the concept and organize the Summer School, May 2017, April 2018, May 2019, June 2020, August 2021, September 2022.

2018- 2022 I was the the Vice-Program Director of the Bonn International Graduate School (BIGS) of Neuroscience.

Munich

Lecturer in the Molecular Neurobiology Seminar series of the LM University- Munich 2006, 2007, 2008, 2009, 2010.

Lecturer in the Molecular Neurobiology Lecture series of the LM University- Munich 2005, 2006, 2007, 2008, 2009, 2010.

Instructor at the Molecular Neurobiology Practical Course at the MPIN/ LM University- Munich. 2003, 2004, 2008, 2009, 2010.

Instructor at the Physiology Practical Course (Bachelor level equivalent) at the LM University- Munich. 2005, 2006, 2007.

Instructor at the Comparative Anatomy of Vertebrates Practical Course (Bachelor level equivalent) at the LM University- Munich 2005, 2006

Heidelberg (EMBL)

Instructor at the EMBO Methods in Cell Biology Courses at the EMBL, Heidelberg 1996, 1997, 1998.

Teaching to EMBL graduate students during the practical part of their Ph.D. courses. EMBL, Heidelberg, Germany 1996, 1997, 1998.

Undergraduate, Diploma, Masters and 12 PhD students have been educated in my lab. Two PhD students graduated with *summa* at the LMU Munich.

2022 Best presentation prize at the BIGS Neuroscience PhD retreat, Karolina Doubkova
2022 Poster prize at the BIGS Neuroscience PhD retreat, Komal Patil
2022 Selection to the OIST Course in Computational Neuroscience, Chi Wai Chan
2021 Poster prize at the BIGS Neuroscience PhD retreat, Karolina Doubkova
2020 Travel award of BIGS Neuroscience to Luigi Prisco to attend the SfN
2019 Publication Prize of the Bonner Forum Biomedizin, Dr. Giovanni Marchetti
2019 Luigi Prisco selected for the Cold Springer Harbor Neurobiology of Drosophila course
2009 Florian Leiss selected for the Cold Springer Harbor Neurobiology of Drosophila course

8. Community engagement

Leadership

- 2022- Steering Board of iBeahve (NRW Network grant)
- 2022 Scientific Advisory board of the RTG-NCA (DFG) Graduate School, University of Cologne
- 2021- 2022 Vice-coordinator of the Masters in Neuroscience, University of Bonn
- 2019- 2022 **Speaker of Topic 1" Brain Function"** for DZNE, Germany (DZNE includes 10 research centres in Germany and research is organized in 5 major topics).
- 2019- 2022 **Speaker of Fundamental Research** at the DZNE Bonn
- 2019- 2022 Vice- Speaker of BIGS Neuroscience, University of Bonn
- 2019- 2022 Steering Committee BIGS Neuroscience, University of Bonn
- 2019- 2021 **PI representative** at the DZNE Bonn site
- 2019 Scientific Advisory Board of the Virtual Fly Brain, Cambridge, UK
- 2018- 2022 Teaching Committee BIGS Neuroscience, University of Bonn

- 2018 External Member of the recruiting committee for a research group leader at the Département des neurosciences fondamentales of the University of Lausanne, Switzerland

Meetings organization

- Bonn Brain 3- International conference, Bonn August 7-9 2023. I am organizing this meeting together with Prof. Gabor Petzold, Prof. Carmen Ruiz de Almodovar and Dr. Marcel Oberlander.
- EMBO Workshop ”Cell Biology of the Nervous System: Resillience and Vulnerability”, Fodele Beach, Crete 8-11 May 2023
  I organized this meeting with Prof. Claudia Bagni and Prof. Nektarios Tavernarakis. EMBO granted funding for the meeting.
- Together with Prof. M. Nawrot (University of Cologne), I organized the international virtual meeting: “The Mushroom Body meeting” May 31st-June 2nd 2021. https://mushroom-body-meeting.org/
- 2021- 2022 I created and organized a “MiniSymposia” series together with Prof. Monique Breteler, bringing together all DZNE sites (10 Institutes in Germany) on rotating topics. The MiniSymposia take place three times per year.
- 2015- 2023 I organized a lively meeting of the groups that in Bonn utilize *Drosophila* as a model system with the aim of generating an interconnected and informed network. These groups are currently: Prof. M. Hoch/ Dr. R. Bauer (LIMES), Prof. M. Pankratz (LIMES), Prof. D. Schumcker (LIMES), Prof. I. Grunwald-Kadow (Uni Bonn), Dr. J. Seelig (Caesar), Dr. Bettina Schnell (Caesar) and my group. 2019- 2020 we extended this meeting to groups in the Zoology Department of the University of Cologne, including Prof. H. Scholz, Prof. A. Bueschges, Prof. K. Ito.
- 2014- 2017 I organized a recurrent meeting for the Actin Community in the Bonn-Cologne area, with the aim of bringing together PIs and students interested in the regulation of the cytoskeleton. This included the groups of Prof. F. Bradke (DZNE and Uni Bonn), Prof. D. Fürst (Uni Bonn), Prof. M. Geyer (UKB), Prof. O. Gruss (Uni Bonn), Prof. W. Kolanus (Uni Bonn), Prof. D. Wachten (Caesar, UKB), Prof. W. Witke (Uni Bonn) and my group in Bonn and the groups of Prof. C. Niessen and of Prof. A. Noegel at the Uni Cologne.

Gender and equality, mentorship

- 2022 February 21st, Invited panel member at the "Workshop female career" at the Research Center Juelich
- 2021 Invited panel member at the virtual discussion "The Glass Ceiling in Science: Breaking down Barriers Together" at the DZNE. (https://www.dzne.de/aktuelles/veranstaltungskalender/the-glass-ceiling-in-science/)
- 2019 Invited "Meet the expert" speaker at the Society for Neuroscience meeting, Chicago, USA
- I act since several years as mentor for women scientists within the frame of the Minerva-FemNet network of the Max Planck Society and for the University of Bonn.
- I act as a primary mentor for two Junior group leaders at the DZNE.

Sabbatical

January – March 2020 I spent a sabbatical period at the University of Cambridge, UK, hosted by Dr. Chair O'Kane in the Department of Genetics (https://www.gen.cam.ac.uk/research-groups/research-groups/okane) and as a visiting fellow of Churchill College.

During this time, I also took a course at the EMBL EBI-Hinxton on "Exploring Human Genetic Variation" in preparation of a grant proposal.