

Research Focus:

My research focuses on odor detection and odor processing in the fruit fly *Drosophila melanogaster*. I employ electrophysiological and molecular biological techniques, self-produced transgenic flies, as well as behavioral experiments in the laboratory and in the field. My current research aims at developing a biosensor for the detection of odors, including CO₂.

Professional Career:

- Primary school and music high school in Eichstätt (Bavaria)
- 1980: High school diploma
- 1980 to 1981: Military service (Air Force)
- 1981 to 1988: Studied biology at Maximilian University, Würzburg, Germany
- 1988: Diploma thesis in the laboratory of Prof. Dr. Buchner and xProf. Dr. Heisenberg
- 1988 to 1993: PhD at the University of Fribourg, Switzerland, in the laboratory of Prof. Dr. R. Stocker
- 1993 to 1994: Research stay as a DFG scholarship holder at the University of Fribourg
- 1994 to 1996: Research stay at Yale University as a DFG scholarship holder
- 1996 to 2001: Habilitation in the Faculty of Chemistry, Ruhr University Bochum
- 2001 to 2004: University lecturer at the Faculty of Chemistry, Ruhr University Bochum
- 2004: University professor in the Faculty of Biology, Ruhr University Bochum
- 2007: Elected by the deans of the faculties at Ruhr University as dean of studies and director of the Optionalbereich with over 14,000 students
- 2011: Re-elected by the deans of the faculties at Ruhr University as dean of studies and director of the Optionalbereich
- 2011: Responsible for the University Program „inSTUDIES“ (new teaching methods), a BMBF funding

- 2011: Successful co-applicant together with the Rectorate of the Ruhr-University of Bochum for the promotion of new teaching concepts at Ruhr University Bochum (€9.2 million), a BMBF funding
- 2011 to 2018: Member of the inSTUDIES steering group of the Rectorate of Ruhr University Bochum
- 2012: Elected by the faculties as speaker for the deans of studies at the Ruhr-University of Bochum
- 2012: Jointly responsible for the reaccreditation of 35 subjects of study

Fundings:

- Deutsche Forschungsgemeinschaft
- Boysenstiftung
- Land Baden-Württemberg
- Mercator-Stiftung
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Current scientific Collaborations:

- Dr. Peter Ritter, Klinikum Westfalen, Dortmund
- Prof. Dr. Stefanos Fasoulas, Institute of Space Systems, University of Stuttgart
- Prof. Dr. Stefan Sielemann, Instrumental and Analytical Sensor Technique, University of Applied Sciences, Hamm
- Prof. Dr. Raphael Stoll, Biomolecular NMR, Ruhr University Bochum
- Prof. Dr. Axel Mosig, Biophysics, Ruhr University Bochum
- Prof. Dr. Sigrun Korsching, Institute for Genetics, University of Cologne

Selected Papers

1: Störtkuhl KF, Fiala A. The Smell of Blue Light: A New Approach toward Understanding an Olfactory Neuronal Network. *Front Neurosci.* 2011 May 23;5:72. doi: 10.3389/fnins.2011.00072. PMID: 21647413; PMCID: PMC3103046.

2: Bellmann D, Richardt A, Freyberger R, Nuwal N, Schwärzel M, Fiala A, Störtkuhl KF. Optogenetically Induced Olfactory Stimulation in *Drosophila* Larvae Reveals the Neuronal Basis of Odor-Aversion behavior. *Front Behav Neurosci.* 2010 Jun 2;4:27. doi: 10.3389/fnbeh.2010.00027. PMID: 20577637; PMCID: PMC2889724.

3: Neuhaus EM, Gisselmann G, Zhang W, Dooley R, Störtkuhl K, Hatt H. Odorant receptor heterodimerization in the olfactory system of *Drosophila melanogaster*. *Nat Neurosci*. 2005 Jan;8(1):15-7. doi: 10.1038/nn1371. Epub 2004 Dec 12. PMID: 15592462.

4: Störtkuhl KF, Kettler R. Functional analysis of an olfactory receptor in *Drosophila melanogaster*. *Proc Natl Acad Sci U S A*. 2001 Jul 31;98(16):9381-5. doi: 10.1073/pnas.151105698. PMID: 11481495; PMCID: PMC55429.

5: Wetzel CH, Behrendt HJ, Gisselmann G, Störtkuhl KF, Hovemann B, Hatt H. Functional expression and characterization of a *Drosophila* odorant receptor in a heterologous cell system. *Proc Natl Acad Sci U S A*. 2001 Jul 31;98(16):9377-80. doi: 10.1073/pnas.151103998. PMID: 11481494; PMCID: PMC55428.

6: Störtkuhl KF, Hovemann BT, Carlson JR. Olfactory adaptation depends on the Trp Ca²⁺ channel in *Drosophila*. *J Neurosci*. 1999 Jun 15;19(12):4839-46. doi: 10.1523/JNEUROSCI.19-12-04839.1999. PMID: 10366618; PMCID: PMC6782652.

7: Ferveur JF, Störtkuhl KF, Stocker RF, Greenspan RJ. Genetic feminization of brain structures and changed sexual orientation in male *Drosophila*. *Science*. 1995 Feb 10;267(5199):902-5. doi: 10.1126/science.7846534. PMID: 7846534.

8: Störtkuhl KF, Hofbauer A, Keller V, Gendre N, Stocker RF. Analysis of immunocytochemical staining patterns in the antennal system of *Drosophila melanogaster*. *Cell Tissue Res*. 1994 Jan;275(1):27-38. doi: 10.1007/BF00305373. PMID: 8118844.

9: Weidinger D, Jamal Jameel K, Alisch D, Jacobsen J, Bürger P, Ruhe M, Yusuf F, Rohde S, Störtkuhl K, Kaufmann P, Kronsbein J, Peters M, Hatt H, Giannakis N, Knobloch J. OR2AT4 and OR1A2 counterregulate molecular pathophysiological processes of steroid-resistant inflammatory lung diseases in human alveolar macrophages. *Mol Med*. 2022 Dec 12;28(1):150. doi: 10.1186/s10020-022-00572-8. PMID: 36503361; PMCID: PMC9743598.

10: Herbrechter R, Beltrán LR, Ziemba PM, Titt S, Lashuk K, Gottemeyer A, Levermann J, Hoffmann KM, Beltrán M, Hatt H, Störckuhl KF, Werner M, Gisselmann G. Effect of 158 herbal remedies on human TRPV1 and the two-pore domain potassium channels KCNK2, 3 and 9. *J Tradit Complement Med*. 2020 Apr 27;10(5):446-453. doi: 10.1016/j.jtcme.2020.04.005. PMID: 32953560; PMCID: PMC7484967.