

# Johannes Wilbertz, PhD

*Project management, patient-derived in vitro neuroscience, RNA biology, and drug screening*

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20 May 1988 – Nationality: German  
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## RESEARCH & WORK EXPERIENCE

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### **Project Team Leader** – Since Apr 2020

Ksilink, Strasbourg, France

*Responsible for interdisciplinary team management to develop phenotypic drug screening approaches in neuronal disease models using the power of AI and ML.*

- Scientific strategy & team management for up to four projects (neurodegenerative and neuromuscular diseases)
- Characterization of patient-derived neuronal in vitro disease models (imaging, electrophysiology)
- High-throughput screening development (robotic automation, chemical compound libraries)
- Co-development and training of classification models for therapeutic / phenotypic chemical compound assessment
- Pre-clinical drug development with multiple partners (clinicians, chemists).

### **Industry Postdoc** – Jan 2019 to Mar 2020

Sanofi-Aventis R&D, Strasbourg, France

*Established a time-resolved FRET assay for high-throughput screening of modifiers of Huntingtin flexibility, the causative protein in Huntington's disease (supervisor: Dr. Barbara Calamini)*

- Optimization of time-resolved FRET assay for high-throughput screening
- Biochemistry (western blotting, DNA/siRNA transfection)
- Cell culture (primary and immortalized patient cells)
- Extensive and frequent data presentation in English and French

### **PhD Research** – 2013 to 2018

Friedrich Miescher Institute for Biomedical Research (associated to Novartis), Basel, Switzerland

*Development of novel microscopy techniques to visualize single mRNA molecules in living human cells to study the cell's response to biochemical stress (supervisor: Dr. Jeffrey Chao)*

- Microscopy techniques (single RNA visualization (fixed/live), immunofluorescence)
- Image analysis (ImageJ macro programming, KNIME, Python, MATLAB)
- Cell culture (cell line generation, DNA/siRNA transfection, viral infection, FACS)
- Biochemistry (polysome profiling, bioluminescence assays, cell viability assays)
- Molecular biology (DNA cloning, lentiviral production, RNAi)
- Interdisciplinary teamwork & driving own scientific project

### **Civil Service** – Jul 2007 to May 2008

Alexianer Hospital for Psychiatry and Neurology, Aachen, Germany

*Caring for patients affected by diseases of the depression, schizophrenic or bipolar spectrum*

## EDUCATION

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### **PhD Cell Biology** – 2013 to 2018

Friedrich Miescher Institute for Biomedical Research (associated to Novartis) & University of Basel, Switzerland

### **MSc Molecular Biology and Biotechnology** – 2011 to 2013

University of Groningen, The Netherlands

### **BSc Medical Biology** – 2008 to 2011

Radboud University Nijmegen, The Netherlands

## SELECTED PUBLICATIONS

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Thibaudeau A, Schmitt K, [...], **Wilbertz JH**. Pharmacological modulation of developmental and synaptic phenotypes in human SHANK3 deficient stem cell-derived neuronal models. **bioRxiv** (under review at **Translational Psychiatry**). 2024 <https://doi.org/10.1101/2023.09.13.557523>

Di Credico A, [...], **Wilbertz JH**, Di Baldassarre A. Machine learning identifies phenotypic profile alterations of human dopaminergic neurons exposed to bisphenols and perfluoroalkyls. **Scientific Reports**. 2023 <https://doi.org/10.1038/s41598-023-49364-y>

Vuidel A, [...], **Wilbertz JH**. Machine learning-aided multidimensional phenotyping of Parkinson's disease patient stem cell-derived midbrain dopaminergic neurons. **Stem Cell Reports**. 2022 <https://doi.org/10.1016/j.stemcr.2022.09.001>

**Wilbertz JH**, [...], Calamini B. Time-resolved FRET screening identifies small molecular modifiers of mutant Huntingtin conformational inflexibility in patient-derived cells. **SLAS Discovery**. 2021 <https://doi.org/10.1016/j.slasd.2021.10.005>

Ross NT, Lohmann F, [...], **Wilbertz JH**, [...], Chao JA, Beckwith REJ. CPSF3-dependent pre-mRNA processing as a druggable node in AML and Ewing's sarcoma. **Nature Chemical Biology**. 2019 <https://doi.org/10.1038/s41589-019-0424-1>

**Wilbertz JH**, Voigt F, Horvathova I, Roth G, Zhan Y, Chao JA. Single-molecule imaging of mRNA localization and regulation during the integrated stress response. **Molecular Cell**. 2019 <https://doi.org/10.1016/j.molcel.2018.12.006>

Halstead JM\*, Lionnet T\*, **Wilbertz JH\***, Wippich F\*, Ephrussi A, Singer RH, Chao JA. An RNA biosensor for imaging the first round of translation from single cells to living animals. **Science**. 2015 <https://doi.org/10.1126/science.aaa3380> \* denotes co-first authors

## AWARDS

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**Sanofi R&D Science Awards 2019 – Innovative Postdoctoral Research** (1<sup>st</sup> place), Oct 2019

**Human Frontier Science Program (HFSP) postdoc fellowship** (gracefully declined due to accepted job in industry), Mar 2019

**Swiss Science Foundation postdoc fellowship** (gracefully declined due to accepted job in industry), Nov 2018

## LANGUAGES

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German (native), English (fluent), Dutch (fluent), French (speaking: fluent, writing: intermediate)

## PROGRAMMING / SOFTWARE

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Python (plotting, data science, Scikit-learn machine learning), ImageJ/FIJI macro language (Java), KNIME (data analysis workflows), Image analysis tools: CellProfiler, WEKA, Ilastik, Scientific presentation: Adobe Illustrator/Inkscape

## REFERENCES

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**Dr. Sabine Gratzer**

*Postdoc supervisor*

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**Dr. Barbara Calamini**

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**Dr. Jeffrey Chao**

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