Johannes Wilbertz, PhD

Interdisciplinary scientist - Cellular imaging, disease modelling, data science
Project leader – Project design, team management, grant writing, fund raising
Communicator – Connecting biologists, chemists, data scientists across academia and industry

20 May 1988 – Nationality: German
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PROFESSIONAL EXPERIENCE

Project Team Leader – Since Apr 2020
Ksilink, Strasbourg, France
Responsible for interdisciplinary team management to develop imaging-based drug screening approaches in various cellular disease models using the power of AI.

- Scientific project management & team supervision for up to four projects (3-7 scientists), collaboration with academic and industry partners, grant writing
- Phenotyping of patient-derived stem cell in vitro disease models (live/fixed cell confocal microscopy, immunofluorescence, CellPainting)
- Imaging-based high-throughput screening development
- Image analysis using segmentation-based and ML/AI-based methods (in-house software, CellProfiler, ImageJ, Ilastik, DINO)
- Data analysis, ML classification, advanced visualization using Python (scikit-learn, Pandas, Numpy, Matplotlib, Seaborn)
- 4 peer-reviewed publications (3 corresponding author), 1 manuscript under review (corresponding author), responsible for 3 successfully funded grant applications (funders: EU, France, Germany), invited speaker at multiple conferences

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)

- Development of time-resolved FRET assay for high-throughput screening
- Biochemistry (western blotting, DNA/siRNA transfection)
- Cell culture (primary and immortalized patient cells)
- 1 first author publication

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 (single RNA visualization (fixed/live), immunofluorescence, FRET)
- 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)
- 5 peer-reviewed publications (2 first author), successful application for two post-doc fellowships

EDUCATION

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
Research stay at **Harvard Medical School** (Loparo laboratory) for 7 months (topic: microscopic imaging of bacterial DNA replication, 1 peer-reviewed publication)

BSc Medical Biology – 2008 to 2011
Radboud University Nijmegen, The Netherlands

SELECTED PUBLICATIONS

Gorgogietas V, Weiss A, […], **Wilbertz JH***. Morphological profiling in human dopaminergic neurons identifies mitochondrial uncoupling as a neuroprotective effect. **bioRxiv** 2024 https://doi.org/10.1101/2024.09.19.613945 * *corresponding author*

Thibaudeau A, Schmitt K, […], **Wilbertz JH***. Pharmacological modulation of developmental and synaptic phenotypes in human SHANK3 deficient stem cell-derived neuronal models. **Translational Psychiatry**. 2024 https://doi.org/10.1038/s41398-024-02947-3 * *corresponding author*

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 * *corresponding author*

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

Sanofi R&D Science Awards 2019 – Innovative Postdoctoral Research (1st 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

SELECTED CONFERENCE PARTICIPATIONS

2024 – ISSCR conference, Hamburg, Germany ("Compound characterization in microglial disease models", poster presentation)
2024 – Neuroinflammation & Neurodegeneration Keystone conference, Santa Fe, USA ("Compound characterization in microglial disease models", poster presentation)
2024 – Stem Cells in Neuroscience, Tübingen, Germany ("Microglial phenotyping to support drug discovery", invited talk)
2023 – German Stem Cell Network Workshop, Bonn, Germany ("Microglial morphological profiling", invited talk)
2023 – Neuroinflammation & Neurodegeneration Keystone conference, Whistler, Canada ("Microglial morphological profiling", poster presentation)
2023 – Precision Medicine in Parkinson's Disease, Belval, Luxembourg ("Human Stem Cell-derived Dopaminergic Neurons for Drug Screening, poster presentation)
2022 – Phenotypic Drug Screening Keystone conference, Denver, USA ("Phenotypic drug screening in stem cell-based disease models", invited talk)
2022 – 4D Neuro conference, Mainz, Germany ("Phenotyping of human stem cell-derived midbrain dopaminergic neurons" poster presentation)

LANGUAGES

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

PROGRAMMING / SOFTWARE

Python (plotting, data science, machine learning), Napari plugins, ImageJ/FIJI macro language (Java), KNIME (data analysis workflows), Image analysis tools: CellProfiler, WEKA, Ilastik

REFERENCES

Dr. Sabine Gratzer
Postdoc supervisor

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