# LEONARD BLASCHEK

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# EMPLOYMENT

# EMBO FELLOW | POSTDOCTORAL RESEARCHER

2022-PRESENT

University of Copenhagen, Denmark

Project: Cell Wall Integrity Sensing and its Feedback on Cell Wall Composition in Plants

Advisors: Prof. Staffan Persson, Prof. Jürgen Kleine-Vehn

## **EDUCATION**

## PhD, Plant Physiology

2017-2022

Stockholms Universitet, Sweden

Project: Functional and Genetic Analysis of Laccase Isoforms during Lignification

Supervisor: Dr. Edouard Pesquet

Co-Supervisors: Prof. Vincent Bulone, Prof. Jonas Gunnarsson

Examination committee: Dr. Richard Sibout (opponent), Prof. Martin Lawoko, Dr. Anna

Kärkönen, Prof. Igor Cesarino, Prof. Geoffrey Daniel, Dr. Mika Sipponen

### LICENTIATE, PLANT PHYSIOLOGY

2017-2020

Stockholms Universitet, Sweden

Project: Cellular Lignin Distribution Patterns and their Physiological Relevance

Supervisor: Dr. Edouard Pesquet

Co-Supervisors: Prof. Vincent Bulone, Prof. Jonas Gunnarsson

Examination Committee: Dr. András Gorzsás (opponent), Dr. Annelie Carlsbecker, Prof. Ulla

Westermark

### MASTER OF SCIENCE, GENETIC AND MOLECULAR PLANT BIOLOGY

2015-2017

Uppsala Universitet, Sweden

Thesis: Distinct Roles of Laccase Isoforms During Lignification in A. thaliana

Supervisor: Dr. Edouard Pesquet

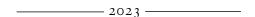
#### BACHELOR OF SCIENCE, BIOLOGY

2013-2015

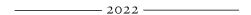
Ernst-Moritz-Arndt-Universität Greifswald, Germany

Thesis: Plasma Membrane-Bound Proteases in the Roots of H. vulgare

Supervisor: Prof. Christine Stöhr

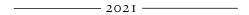


Blichfeldt Pedersen G<sup>†</sup>, **Blaschek L**<sup>†</sup>, Frandsen KEH, Noack LC, Persson S (2023). Cellulose synthesis in land plants. *Mol. Plant.* 16, 206–231. 10.1016/j.molp.2022.12.015

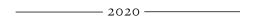


**Blaschek L**, Murozuka E, Serk H, Ménard D, Pesquet E (2022). Different combinations of laccase paralogs non-redundantly control the lignin amount and composition of specific cell types and cell wall layers in *Arabidopsis*. *Plant Cell*. 10.1093/plcell/koac344 — *previously on bioRxiv* 

Ménard D<sup>†</sup>, **Blaschek L**<sup>†</sup>, Kriechbaum K, Lee CC, Serk H, Zhu C, Lyubartsev A, Nuoendagula, Bacsik Z, Bergström L, Mathew A, Kajita S, Pesquet E (2022). Plant biomechanics and resilience to environmental changes are controlled by specific lignin chemistries in each vascular cell type and morphotype. *Plant Cell* 34, 4877–4896. 10.1093/plcell/koac284 — *previously on bioRxiv* 



**Blaschek L**, Pesquet E (2021). Phenoloxidases in Plants—How Structural Diversity Enables Functional Specificity. *Front. Plant Sci.* 12, 2183. 10.3389/fpls.2021.754601



Yamamoto M, **Blaschek L**, Subbotina E, Kajita S, Pesquet E (2020). Importance of Lignin Coniferaldehyde Residues for Plant Properties and Sustainable Uses. *ChemSusChem* 13, 4400–4408. 10.1002/cssc.202001242

**Blaschek L**<sup>†</sup>, Nuoendagula<sup>†</sup>, Bacsik Z, Kajita S, Pesquet E (2020). Determining the Genetic Regulation and Coordination of Lignification in Stem Tissues of *Arabidopsis* Using Semiquantitative Raman Microspectroscopy. *ACS Sustain. Chem. Eng.* 8, 4900–4909. 10.1021/acssuschemeng.0c00194

**Blaschek L**, Champagne A, Dimotakis C, Nuoendagula, Decou R, Hishiyama S, Kratzer S, Kajita S, Pesquet E (2020). Cellular and Genetic Regulation of Coniferaldehyde Incorporation in Lignin of Herbaceous and Woody Plants Using Quantitative Wiesner Staining. *Front. Plant Sci.* 11, 109. 10.3389/fpls.2020.00109

# Presentations

**Blaschek L** (2021, selected talk). Laccase paralogs non-redundantly direct lignification. *ASPB Plant Biology 2021*, online.

**Blaschek L** (2021, selected talk). Specific and dynamic lignification at the cell-type level controls plant physiology and adaptability. *SEB 2021 Annual Conference*, online. — link to recording

**Blaschek L** (2021, selected talk). Laccase paralogs non-redundantly direct lignification. *SEB* 2021 Annual Conference, online.

**Blaschek L** (2021, selected talk). Laccase paralogs non-redundantly direct lignification. 7<sup>th</sup> International Conference on Plant Cell Wall Biology, online. — link to recording

<sup>†:</sup> contributed equally

- **Blaschek L** (2019, selected talk). The structural importance of lignin in xylem vessels. 3<sup>rd</sup> Stockholm Cell Wall Meeting, Stockholm University, Stockholm.
- **Blaschek L** (2019, selected talk). Spatial distribution of coniferaldehyde lignin. 28<sup>th</sup> Congress of the Scandinavian Plant Physiology Society, Umeå.
- **Blaschek L** (2018, selected talk). Determining the spatial distribution of aldehyde units in lignin. 2<sup>nd</sup> Stockholm Cell Wall Meeting, KTH Royal Institute of Technology, Stockholm.

## GRANTS, SCHOLARSHIPS & AWARDS

- **Blaschek L** (2022) EMBO Postdoc fellowship ALTF 37-2022. *Cell wall integrity sensing and its feedback on cell wall composition in plants.* Hosted by Staffan Persson in Copenhagen and Jürgen Kleine-Vehn in Freiburg.
- **Blaschek L** (2021). Best student presentation award at the 7<sup>th</sup> International Conference on Plant Cell Wall Biology.
- **Blaschek L** (2019). Travel grant of the Department of Ecology, Environment and Plant Sciences, Stockholm University to attend the 28<sup>th</sup> Congress of the Scandinavian Plant Physiology Society.
- **Blaschek L**, Pesquet E (2018). Kungliga Vetenskapsakademien Scholarship BS2018–0061 for the sequencing of the *Zinnia violacea* genome.

#### EXPERTISE

#### Wet lab

- cloning (TA and Gateway)
- · histology and histochemistry
- *in vitro* plant systems (cell suspension cultures, seedlings, saplings)
- plant phenotyping, transformation & crossing (*Arabidopsis, Populus, Zinnia*)
- protein biochemistry (extraction, activity assays, SDS-PAGE)
- RT-qPCR
- quantitative bright field, fluorescence and vibrational microscopy

## DRY LAB

- automated image analysis (Python, ImageJ)
- data analysis and visualisation (R, Python, bash)
- molecular phylogenetics

- protein homology modelling
- · reproducible reporting (markdown, git)
- text processing (Office, LaTeX)

## Courses & Workshops

Piecewise Structural Equation Modelling (2019). Stockholm University
Advanced Imaging of Cells in vitro and in vivo (2018). Stockholm University
Optical Clearing and Expansion Microscopy (2018). SciLifeLab, Stockholm
Advances in Enzyme Regulation (2018). Swedish University of Agricultural Sciences, Uppsala

### TEACHING

Molecular plant-microbe interactions (MSc level). 2017–2020. Project design and supervision. *Stockholm University* 

Green biotechnology (MSc level). 2018–2021. Project design and supervision. *Stockholm University* 

# SERVICE

Member of the departmental equality group, Stockholm University 2019–2021

Course representative in the department for evolutionary biology, Uppsala University 2015

Student representative in the board of the botanical institute, Universität Greifswald 2014–2015