# 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

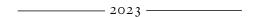
## BACHELOR OF SCIENCE, BIOLOGY

2013-2015

Ernst-Moritz-Arndt-Universität Greifswald, Germany

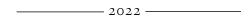
Thesis: Plasma Membrane-Bound Proteases in the Roots of H. vulgare

Supervisor: Prof. Christine Stöhr

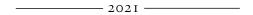


**Blaschek L**, Murozuka E, Serk H, Ménard D, Pesquet E (2023). Different combinations of laccase paralogs non-redundantly control the lignin amount and composition of specific cell types and cell wall layers in *Arabidopsis*. *Plant Cell* 35, 889–909. 10.1093/plcell/koac344 — *previously on bioRxiv* 

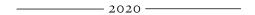
Blichfeldt Pedersen G<sup>†</sup>, **Blaschek L**<sup>†</sup>, Frandsen KEH, Noack LC, Persson S (2023). Cellulose synthesis in land plants. *Mol. Plant.* 16, 206–231. 10.1016/j.molp.2022.12.015



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 (Gibson, GoldenGate, Gateway, TA)
- plant histology and histochemistry
- *in vitro* plant systems (cell suspension cultures, seedlings, saplings)
- plant phenotyping, transformation & crossing (*Arabidopsis, Populus, Zinnia*)
- protein biochemistry (expression, purification, Western blotting, activity assays)
- RT-qPCR
- · targeted mutagenesis and gene editing
- quantitative bright field, fluorescence and vibrational micro(spectro)scopy

## 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)

### 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

Departmental data science task force, PLEN, University of Copenhagen	2023-
Departmental equality group, DEEP, Stockholm University	2019-2021
Course representative, ECB, Uppsala University	2015
Student representative on the board, BOT, Greifswald University	2014-2015