

# LEONARD BLASCHEK

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Thorvaldsensvej 40  
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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

## PUBLICATIONS

2023

- 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](https://doi.org/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](https://doi.org/10.1016/j.molp.2022.12.015)

2022

- 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](https://doi.org/10.1093/plcell/koac284) — previously on [bioRxiv](#)

2021

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

2020

- 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](https://doi.org/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](https://doi.org/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](https://doi.org/10.3389/fpls.2020.00109)

<sup>†</sup>: contributed equally

## 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](#)

- 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** (2023). Groupe Polyphénols Ragai Ibrahim prize at the *31<sup>st</sup> International Conference on Polyphenols*.
- 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.

## 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, <i>PLEN, University of Copenhagen</i>	2023–
Departmental equality group, <i>DEEP, Stockholm University</i>	2019–2021
Course representative, <i>ECB, Uppsala University</i>	2015
Student representative on the board, <i>BOT, Greifswald University</i>	2014–2015