

The [Rheinische Friedrich-Wilhelms-Universität Bonn](https://www.uni-bonn.de) is an international research university that offers a wide range of degree programs. With 200 years of history, about 38,000 students, over 6,000 employees, and an excellent domestic and international reputation, Bonn University is one of eleven German Universities of Excellence.

In the Ecophysiology group at the [Institute of Cellular and Molecular Botany](https://www.uni-bonn.de/institute/cmb) I am inviting applications for a

PhD or post-doctoral position (65%)* (TV-L 13)

The position starts January 2022 (or asap afterwards) and runs until 31 May 2024, with a potential extension to a three-year employment. *A post-doctoral employment on a higher level (up to 100%) and shorter duration is negotiable.

The project is embedded in a four-national research collaboration in the EU supported ERA-NET Cofund on Food Systems and Climate ([FOSC](https://www.era-net.org/)) with additional partners in Belgium, Kenya and South Africa.

The collaborative research seeks to understand *Post Harvest losses mitigation by improved plant hEALING (PHEALING)* primarily in Cassava. The research connected with the announced position focusses on the role of the biopolymer suberin in plant healing processes in particular in Cassava storage roots. The project will integrate complementary approaches including genetics, transcriptomics, analytical chemistry, high resolution microscopy and physiology in genetics, developmental biology and cell biology studies. The aim is to decipher the molecular basis and biochemical processes in plant healing to develop novel crop protection mechanism.

The candidate should hold at least a master degree in biology or a related field and should have research experience in the laboratory. I am looking for a curiosity-driven candidate with skills in some of the above-listed approaches. Prior experience or strong interest in lipid biochemistry and analysis (GC-MS) will be an asset. The project involves international partners and therefore requires both, excellent team work and command of English.

For more details on past and current research of Rochus Franke, please see some sample publications listed overleaf.

Interested applicants should send a single pdf file to Rochus Franke (rochus.franke@uni-bonn.de) containing:

- curriculum vitae
- contact information of two references
- a cover letter / motivation letter with research interest statement
- a very brief summary of previous research experiences

Screening of applications starts immediately until 10 November 2021.

Priv.-Doz. Dr. Rochus Franke

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Recent and project related publications:

- Andersen TG, Molina D, Kilian J, Franke RB, Ragni L, Geldner N (2021) Tissue-Autonomous Phenylpropanoid Production Is Essential for Establishment of Root Barriers. *Current Biology*. doi:<https://doi.org/10.1016/j.cub.2020.11.070>
- Berhin A, de Bellis D, Franke RB, Buono RA, Nowack MK, Nawrath C (2019) The Root Cap Cuticle: A Cell Wall Structure for Seedling Establishment and Lateral Root Formation. *Cell* 176 (6):1367-1378.e1368. doi:<https://doi.org/10.1016/j.cell.2019.01.005>
- Franke R, Schreiber L (2007) Suberin - a biopolyester forming apoplastic plant interfaces. *Current Opinion in Plant Biology* 10 (3):252-259
- Franke RB, Dombrink I, Schreiber L (2012) Suberin goes genomics: Use of a short living plant to investigate a long lasting polymer. *Frontiers in Plant Science* 3:4. doi: 10.3389/fpls.2012.00004. doi:[10.3389/fpls.2012.00004](https://doi.org/10.3389/fpls.2012.00004)
- Graça J, Cabral V, Santos S, Lamosa P, Serra O, Molinas M, Schreiber L, Kauder F, Franke R (2015) Partial depolymerization of genetically modified potato tuber periderm reveals intermolecular linkages in suberin polyester. *Phytochemistry* 117:209-219. doi:<http://dx.doi.org/10.1016/j.phytochem.2015.06.010>
- Henry A, Wehler R, Grondin A, Franke R, Quintana M (2016) Environmental and physiological effects on grouping of drought-tolerant and susceptible rice varieties related to rice (*Oryza sativa*) root hydraulics under drought. *Annals of Botany* 118 (4):711-724. doi:[10.1093/aob/mcw068](https://doi.org/10.1093/aob/mcw068)
- Holbein J, Franke RB, Marhavý P, Fujita S, Górecka M, Sobczak M, Geldner N, Schreiber L, Grundler FMW, Siddique S (2019) Root endodermal barrier system contributes to defence against plant-parasitic cyst and root-knot nematodes. *The Plant Journal* 100 (2):221-236. doi:[10.1111/tpj.14459](https://doi.org/10.1111/tpj.14459)
- Kim JI, Hidalgo-Shrestha C, Bonawitz ND, Franke RB, Chapple C (2021) Spatio-temporal control of phenylpropanoid biosynthesis by inducible complementation of a cinnamate 4-hydroxylase mutant. *Journal of Experimental Botany*. doi:[10.1093/jxb/erab055](https://doi.org/10.1093/jxb/erab055)
- Li-Beisson Y, Shorrosh B, Beisson F, Andersson MX, Arondel V, Bates PD, Baud S, Bird D, DeBono A, Durrett TP, Franke RB, Graham IA, Katayama K, Kelly AA, Larson T, Markham JE, Miquel M, Molina I, Nishida I, Rowland O, Samuels L, Schmid KM, Wada H, Welti R, Xu C, Zallot R, Ohlrogge J (2013) Acyl-Lipid Metabolism. *The Arabidopsis Book* 11:e0161. doi:[10.1199/tab.0161](https://doi.org/10.1199/tab.0161)
- Salas-González I, Rey G, Flis P, Custódio V, Gopaulchan D, Bakhoum N, Dew TP, Suresh K, Franke RB, Dangl JL, Salt DE, Castrillo G (2021) Coordination between microbiota and root endodermis supports plant mineral nutrient homeostasis. *Science* 371 (6525):eabd0695. doi:[10.1126/science.abd0695](https://doi.org/10.1126/science.abd0695)
- Schreiber L, Franke R, Hartmann K (2005) Wax and suberin development of native and wound periderm of potato (*Solanum tuberosum* L.) and its relation to peridermal transpiration. *Planta* 220 (4):520-530. doi:[10.1007/s00425-004-1364-9](https://doi.org/10.1007/s00425-004-1364-9)
- Serra O, Soler M, Hohn C, Sauveplane V, Pinot F, Franke R, Schreiber L, Prat S, Molinas M, Figueras M (2009) *CYP86A33*-targeted gene silencing in potato tuber alters suberin composition, distorts suberin lamellae, and impairs the periderm's water barrier function. *Plant Physiology* 149 (2):1050-1060. doi:[10.1104/pp.108.127183](https://doi.org/10.1104/pp.108.127183)

[Complete list of Rochus' publications](#)