

## Curriculum Vitae

### Personal Data

Title	Prof. Dr.
First name	Stefan A.
Name	Rensing
Current position	Professor (W3)
Current institution(s)/site(s), country	University of Freiburg, Germany
Identifiers/ORCID	0000-0002-0225-873X



### Qualifications and Career

Stages	Periods and Details
Degree programme	Biology (diploma), 1986-1993, University of Freiburg, Germany
Doctorate	1995, P. Sitte/U.-G. Maier, Molecular characterization of cryptomonads, University of Freiburg, Germany
Stages of academic/professional career	<p>Since 2022, Prof. (W3) for data integration and systems modelling of eukaryotic model organisms / since 2021, Vice president for research and innovation, both at University of Freiburg</p> <p>2019-2022 Prof. (W3) for Plant Cell Biology, University of Marburg</p> <p>2018 Declined call to University College London, Quain Chair of Botany</p> <p>2012-2019 Prof. (W2) for Plant Cell Biology, University of Marburg</p> <p>2010-2012 Prof. (adj.) for Bioinformatics and Systems Biology, University of Freiburg</p> <p>2007-2011 Lecturer Bioinformatics and Systems Biology, University of Freiburg (FRISYS)</p> <p>2003-2007 Group leader Computational Biology, University of Freiburg</p> <p>1995-2003 Postdoc positions in Bayreuth and Freiburg</p>

### Engagement in the Research System

I have been a member of the faculty council at the University of Freiburg/Marburg for many years, and have been vice dean and dean of my faculty at the University of Marburg.

Currently I am an associate editor for The Plant Journal and previously for BMC Plant Biology and Frontiers in Plant Science. Peer reviews: of grant proposals and papers for many agencies and journals, including e.g. the NSF/DFG/ANR/ERC, Science, Nature, Cell, PNAS, Genome Biology, Plant Cell, New Phytologist.

Member of Deutsche Botanische Gesellschaft (DBG), European Plant Science Organisation (EPSO), International Association of Bryologists (IAB), International Society of Endocytobiology (ISE), German Life Science Association (VBIO), international molecular moss science society (iMOSS).

Coordinator (1. funding period) of the DFG Priority Programme 2237, MAdLand — Molecular Adaptation to Land: plant evolution to change, coordinator of the international *P. patens* flagship genome project (US DOE JGI). Member of many genome consortia as well as of the 1KP and 10KP projects. Coordinator of several national and international collaborative research projects.

#### Organization of meetings

2004	Organization of the international <i>Physcomitrella</i> meeting, MOSS 2004
2008 - 2010	Organization of the international <i>Physcomitrella</i> genome workshop
2010 - 2022	Organization of the non-seed plant workshop at PAG, San Diego
2011	Organization of the international <i>Physcomitrella</i> meeting, MOSS 2011
2015 - 2019	Organization of international Black Forest Summer Schools
2014	Organization of the Meeting of the International Society of Endocytobiology
2019	Organization of the Molecular Biology of Plants meeting (Dabringhausen)
2020 - 2022	Organization of the SPP 2237 MAdLand workshop and kickoff meeting

#### **Supervision of Researchers in Early Career Phases**

Number of theses supervised: Bachelor 29, master 14, diploma 18, PhD 16, Habilitation 2.


#### **Scientific Results**

##### **Category A**


**Rensing, S.A.**, Lang, D., Zimmer, A.D. [65 co-authors] Grigoriev, I.V., Quatrano, R.S. and Boore, J.L. (2008) The *Physcomitrella* genome reveals evolutionary insights into the conquest of land by plants. Science, 319, 64-69; DOI: 10.1126/science.1150646.

Available from [http://plantco.de/papers/Rensing\\_2008\\_Science\\_319-64.pdf](http://plantco.de/papers/Rensing_2008_Science_319-64.pdf)


This is my “signature paper”: with the publication of “the moss genome” as the fourth plant genome (after Arabidopsis, rice and poplar) we laid the ground for comparative genomics to unravel plant trait evolution. The paper has been cited > 1,800 times so far. I was responsible for major parts of the analyses as well as writing.

Lang, D., Ullrich, K.K., Murat, F. [51 co-authors] Maumus, F., Salse, J., Schmutz, J. and **Rensing, S.A.** (2018) The *Physcomitrella patens* chromosome-scale assembly reveals moss genome structure and evolution. Plant J, 93, 515-533; DOI: 10.1111/tpj.13801. Open access .

An update of the “moss genome”: Awarded silver prize for the best Original Article in TPJ 2018; SEB-Wiley-TPJ award for outstanding papers published in TPJ in 2018; downloaded often enough to be a #Top20Article. Cited 275 times so far (Nov.22), i.e. ca. 70 times per year. I conceived of the study, acquired funding and supervised the parts carried out by my lab. I coordinated the collaborative project.


**Rensing, S.A.**, Goffinet, B., Meyberg, R., Wu, S.Z. and Bezanilla, M. (2020) The Moss *Physcomitrium (Physcomitrella) patens*: A Model Organism for Non-Seed Plants. Plant Cell; DOI: 10.1105/tpc.19.00828. Open access .

An invited review on what we know about one of the most important non-seed plant models, *P. patens*, and how to make use of it.

Nishiyama, T., Sakayama, H., de Vries, J., [54 co-authors] Van Der Straeten, D., Gould, S.B. and **Rensing, S.A.** (2018) The *Chara* Genome: Secondary Complexity and Implications for Plant Terrestrialization. Cell, 174, 448-464 e424; DOI: 10.1016/j.cell.2018.06.033. Open access .

Another long-term genomics project: conceived of in 2008, published in Cell in 2018. Informing to a large extent our understanding of early land plant evolution. I conceived of the study, acquired

funding and supervised the parts carried out by my lab. I coordinated the collaborative project. Cover contribution.


Delaux, P.M., Hetherington, A.J., Coudert, Y., Delwiche, C., Dunand, C., Gould, S., Kenrick, P., Li, F.W., Philippe, H., **Rensing, S.A.**, Rich, M., Strullu-Derrien, C. and de Vries, J. (2019) Reconstructing trait evolution in plant evo-devo studies. Curr Biol, 29, R1110-R1118; DOI: 10.1016/j.cub.2019.09.044. Open access .

How do you go forth if you want to infer trait evolution? A manual for plants, mentioning do's and don'ts for the non-expert.


**Rensing, S.A.** (2018) Great moments in evolution: the conquest of land by plants. Curr Opin Plant Biol, 42, 49-54; DOI: 10.1016/j.pbi.2018.02.006.

Available from [http://plantco.de/papers/Rensing\\_2018\\_CurrOpPlantBiol.pdf](http://plantco.de/papers/Rensing_2018_CurrOpPlantBiol.pdf).


An invited review detailing what we knew (at the time) about early plant evolution, mainly derived from comparative genomics and evo-devo studies.

Wilhelmsson, P.K.I., Muhlich, C., Ullrich, K.K. and **Rensing, S.A.** (2017) Comprehensive Genome-Wide Classification Reveals That Many Plant-Specific Transcription Factors Evolved in Streptophyte Algae. Genome Biol Evol, 9, 3384-3397; DOI: 10.1093/gbe/evx258. Open access .


One of the major topics that my lab pursues: evolution of transcription factors. Here we show, based on >120 plant and algal genomes, that many TF families previously thought to be land plant-specific indeed evolved in the common ancestor of plants and algae. I conceived of the study, acquired funding and supervised it.

Fernandez-Pozo, N., Haas, F.B., Meyberg, R., Ullrich, K.K., Hiss, M., Perroud, P.F., Hanke, S., Kratz, V., Powell, A.F., Vesty, E.F., Daum, C.G., Zane, M., Lipzen, A., Sreedasyam, A., Grimwood, J., Coates, J.C., Barry, K., Schmutz, J., Mueller, L.A. and **Rensing, S.A.** (2019) PEATmoss (Physcomitrella Expression Atlas Tool): a unified gene expression atlas for the model plant *Physcomitrella patens*. Plant J; DOI: 10.1111/tpj.14607. Open access .

My lab has developed a number of web-based community tools. PEATmoss unites the available expression profiling data for *P. patens* and makes it available to the public. It has since been expanded with more functions and more datasets (to be published soon in the framework of the PP 2437 "MAdLand" initiative). I conceived of the study, acquired funding and supervised it.

Hiss, M., Meyberg, R., Westermann, J., Haas, F.B., Schneider, L., Schallenberg-Rudinger, M., Ullrich, K.K. and **Rensing, S.A.** (2017) Sexual reproduction, sporophyte development and molecular variation in the model moss *Physcomitrella patens*: introducing the ecotype Reute. Plant J, 90, 606-620; DOI: 10.1111/tpj.13501. Open access .

My lab is interested in the evolution of sexual reproduction, and in particular how the plant alternation of generation evolved and is controlled. In this study we laid the methodological basis for such studies, since then used by several labs. I conceived of the study, acquired funding and supervised it. I coordinated the collaborative project.

Meyberg, R., Perroud, P.F., Haas, F.B., Schneider, L., Heimerl, T., Renzaglia, K.S. and **Rensing, S.A.** (2020) Characterization of evolutionarily conserved key players affecting eukaryotic flagellar motility and fertility using a moss model. New Phytol; DOI: 10.1111/nph.16486. Open access .

In this study on plant sexual reproduction we show that flagella of moss male sperm might be used as a model of human/animal disease and fertility studies. I conceived of the study, acquired funding and supervised it. Cover contribution.

## Category B

The landing page for the web-based community resources that my lab developed:

<https://plantcode.cup.uni-freiburg.de/> including TAPscan, PEATmoss, GTP/ATP2, AetarDB.

Technology transfer

1997 - 2003 CEO of dnaX, production of embedded DNA pendants

2006 - 2008 Scientific consultant of dnaX/Dr. Vogts Forschung

2008 Patent “Galactosyltransferase”, WO 2008/037490

2011 - 2021 CEO of evermoss, production of ornamental mosses

2020 Patent “Capsaicin”, submitted, EP 20190931.4

Scientific communication

I am actively communicating via my Twitter handle, @RensingStefan.

I regularly reach out via press releases and public discussion, including Pint of Science.

## Academic Distinctions

Elected president of the international molecular moss science society (iMOSS).

Honorary member of iMOSS and awarded the “golden spore” in 2021, “for his contribution to developing the *P. patens* genome, providing genomic tools and resources, and his tremendous efforts towards community building”.

Elected speaker of the section Plant Physiology and Molecular Plant Biology of the German Botanical Society (DBG).

## Data protection and consent to the processing of optional data

If you provide voluntary information (marked as optional) in this CV, your consent is required. Please confirm your consent by checking the box below.

I expressly consent to the processing of the voluntary (optional) information, including “special categories of personal data”<sup>1</sup> in connection with the DFG’s review and decision-making process regarding my proposal. This also includes forwarding my data to the external reviewers, committee members and, where applicable, foreign partner organisations who are involved in the decision-making process. To the extent that these recipients are located in a third country (outside the European Economic Area), I additionally consent to them being granted access to my data for the above-mentioned purposes, even though a level of data protection comparable to EU law may not be guaranteed. For this reason, compliance with the data protection principles of EU law is not guaranteed in such cases. In this respect, there may be a violation of my fundamental rights and freedoms and resulting damages. This may make it more difficult for me to assert my rights under the General Data Protection Regulation (e.g. information, rectification, erasure, compensation) and, if necessary, to enforce these rights with the help of authorities or in court.

I may **revoke** my consent in whole or in part at any time – with effect for the future, freely and without giving reasons – vis-à-vis the DFG ([postmaster@dfg.de](mailto:postmaster@dfg.de)). The lawfulness of the processing carried out up to that point remains unaffected. Insofar as I transmit “special categories of personal data” relating to third parties in this CV, I confirm that the necessary legitimation under data protection law exists (e.g. based on consent).

I have taken note of the DFG’s Data Protection Notice relating to research funding, which I can access at [www.dfg.de/privacy\\_policy](http://www.dfg.de/privacy_policy) and I will forward it to such persons whose data the DFG processes as a result of being mentioned in this CV.

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<sup>1</sup> Special categories of personal data are those “revealing racial or ethnic origin, political opinions, religious or philosophical beliefs, or trade union membership, and (...) genetic data, biometric data for the purpose of uniquely identifying a natural person, data concerning health or data concerning a natural person’s sex life or sexual orientation” (Article 9(1) GDPR).