

Armin Scheben

POSTDOCTORAL FELLOW · SIMONS CENTER FOR QUANTITATIVE BIOLOGY

Cold Spring Harbor Laboratory, 1 Bungtown Road, Cold Spring Harbor, NY 11724

✉ armin.scheben@gmail.com | 🐦 @arminscheben

Education

University of Western Australia

PHD BIOINFORMATICS

- Advisor: Dr. David Edwards

Perth

Feb 2016 - Sept 2019

University of Munich

MS BIOLOGY

- Advisor: Dr. Jochen Heinrichs

Munich

Oct 2013 - Feb 2016

University of Goettingen

BS BIOLOGY

- Undergrad research advisor: Dr. Elvira Hörandl

Goettingen

Oct 2010 - Sept 2013

Professional Experience

2019-present **Postdoctoral Fellow**, Simons Center for Quantitative Biology, Cold Spring Harbor Laboratory

2017-2019 **Graduate Teaching Assistant**, Dept. of Biological Sciences, University of Western Australia

2018 **Quantitative Research Intern**, BASF, Ghent, Belgium

2017 **Quantitative Research Intern**, Bayer, Ghent, Belgium

Publications

PREPRINTS

Wu, Y., Johnson, L., Song, B., Romay, C., Stitzer, M., Siepel, A., Buckler, E., **Scheben, A.** 2021. A multiple genome alignment workflow shows the impact of repeat masking and parameter tuning on alignment of functional regions in plants, bioRxiv, doi: 10.1101/2021.06.01.446647. [In Press in The Plant Genome]

Mo, Z., **Scheben, A.**, Steinberg, J., Siepel, A., Martienssen, R. 2021. Circadian immunity, sunrise time and the seasonality of respiratory infections, medRxiv, doi: 10.1101/2021.03.29.21254556.

Scheben, A., Kramer, M., Goodwin, S., Oppenheim, S., Becker, D.J., Schatz, M.C., Simmons, N.B., Siepel, A., McCombie, W.R. 2020. Long-read sequencing reveals rapid evolution of immunity-and cancer-related genes in bats, bioRxiv, doi: 10.1101/2020.09.09.290502.

JOURNAL ARTICLES

Hu, H., **Scheben, A.**, Verpaalen, B., Tirnaz, S., Bayer, P., Hodel, R.G.J., Batley, J., Soltis, D.E., Soltis, P.S., Edwards, D. 2022. *Amborella* gene presence/absence variation is associated with abiotic stress responses that may contribute to environmental adaptation, New Phytologist, 233, 1548-1555.

Neik, T.X., Ghanbarnia, K., Ollivier, B., **Scheben, A.**, Severn-Ellis, A., Larkan, N.J., Haddadi, P., Fernando, W.G.D., Rouxel, T., Batley, J. Two independent approaches converge to the cloning of a new *Leptosphaeria maculans* avirulence effector gene, *AvrLmS-Lep2*, Molecular Plant Pathology, 23, 733-748.

Yuan, Y., **Scheben, A.**, Edwards, D., Chan, T.-F. 2021. Toward haplotype studies in polyploid plants to assist breeding, Molecular Plant, 14, 1969-1972.

Wolter, F., Schindele, P., Beying, N., **Scheben, A.**, Puchta, H. 2021. Different DNA repair pathways are involved in single-strand break-induced genomic changes in plants, The Plant Cell, 33, 3454-3469.

Wang, K., Hu, H., Tian, Y., Li, J., **Scheben, A.**, Zhang, C., Li, Y., Wu, J., Yang, L., Fan, X. 2021. The chicken pan-genome reveals gene content variation and a promoter region deletion in *IGF2BP1* affecting body size, Molecular Biology and Evolution, 38, 5066-5081.

- Bayer, P., **Scheben, A.**, Golicz, A., Yuan, Y., Faure, S., Lee, H., Chawla, H., Anderson, R., Bancroft, I., Raman, H. 2021. Modelling of gene loss propensity in the pangenomes of three *Brassica* species suggests different mechanisms between polyploids and diploids, *Plant Biotechnology Journal*, 19, 2488-250.
- Vranken, S., Wernberg, T., **Scheben, A.**, Severn-Ellis, A., Batley, J., Bayer, P., Edwards, D., Wheeler, D., Coleman, M. 2021. Genotype–environment mismatch of kelp forests under climate change, *Molecular Ecology*, 30, 3730-3746.
- Bayer, P., Golicz, A., **Scheben, A.**, Batley, J., Edwards, D. 2020. Plant pan-genomes are the new reference. *Nature Plants*, 6, 914-920.
- Scheben, A.** & Hojsgaard, D. 2020. Can we use gene-editing to induce apomixis in sexual plants?, *Genes*, 11, 781.
- Scheben, A.**, Severn-Ellis, A., Patel, D., Pradhan, A., Rae, S., Batley, J., Edwards, D. 2020. Linkage mapping and QTL analysis of flowering time using ddRAD sequencing with genotype error correction in *Brassica napus*, *BMC Plant Biology*, 20, 1-13.
- Scheben, A.**, Chan, C.-K.K., Mansueto, L., Mauleon, R., Larmande, P., Alexandrov, N., Wing, R.A., McNally, K.L., Quesneville, H., Edwards, D. 2019. Progress in single-access information systems for wheat and rice crop improvement, *Briefings in Bioinformatics*, 20, 565-571.
- Scheben, A.**, Verpaalen, B., Lawley, C.T., Chan, C.-K.K., Bayer, P., Batley, J., Edwards, D. 2019. CropSNPdb: a database of SNP array data for Brassica crops and hexaploid bread wheat, *The Plant Journal*, 98, 142-152.
- Scheben, A.** & Edwards, D. 2018. Towards a more predictable plant breeding pipeline with CRISPR/Cas-induced allelic series to optimize quantitative and qualitative traits, *Current Opinion in Plant Biology*, 45, 218-225.
- Scheben, A.** & Edwards, D. 2018. Bottlenecks for genome-edited crops on the road from lab to farm, *Genome Biology*, 19, 1-7.
- Yuan, Y., Lee, H., Hu, H., **Scheben, A.**, Edwards, D. 2018. Single-cell genomic analysis in plants, *Genes*, 9, 50.
- Yuan, Y., Bayer, P., **Scheben, A.**, Chan, C.-K.K., Edwards, D. 2017. BioNanoAnalyst: a visualisation tool to assess genome assembly quality using BioNano data, *BMC Bioinformatics*, 18, 323.
- Scheben, A.** & Edwards, D. 2017. Genome editors take on crops, *Science*, 355, 1122-1123.
- Scheben, A.**, Wolter, F., Batley, J., Puchta, H., Edwards, D. 2017. Towards CRISPR/Cas crops—bringing together genomics and genome editing, *New Phytologist*, 216, 682-698.
- Scheben, A.**, Batley, J., Edwards, D. 2017. Genotyping-by-sequencing approaches to characterize crop genomes: choosing the right tool for the right application, *Plant Biotechnology Journal*, 15, 149-161.
- Scheben, A.**, Bechteler, J., Lee, G.E., Pócs, T., Schäfer-Verwimp, A., Heinrichs, J. 2016. Multiple transoceanic dispersals and geographical structure in the pantropical leafy liverwort *Ceratolejeunea* (Lejeuneaceae, Porellales), *Journal of Biogeography*, 43, 1739-1749.
- Hodač, L., **Scheben, A.**, Hojsgaard, D., Paun, O., Hörandl, E. 2014. ITS polymorphisms shed light on hybrid evolution in apomictic plants: a case study on the *Ranunculus auricomus* complex, *PLoS One*, 9, e103003.

Honors & Awards

2018	3 Minute Thesis Competition Winner , University of Western Australia	\$ 772
2016	Australian Endeavor Scholarship , Government of Australia	\$ 210,422
2015	EES Young Researcher Prize , University of Munich	\$ 360

Presentations

- Scheben, A.** and Siepel, A. 2022. Simple selection inference from pre-estimated genealogies using a likelihood approach. Oral presentation: Probabilistic Modelling in Genomics 2022, Oxford, UK.
- Scheben, A.** 2021. Unraveling molecular mechanisms of immunity and cancer-resistance using the genomes of two Neotropical bats. Oral presentation: Regeneron Science to Medicine Virtual Forum.

- Scheben, A.**, Ramos, O.M., Kramer, M., Goodwin, S., Oppenheim, S., Becker, D., Schatz, M., Simmons, N., Siepel, A., McCombie R. 2021. Long-read sequencing reveals rapid evolution of immunity- and cancer-related genes in bats. Poster presentation: Genome Informatics, Cold Spring Harbor, NY.
- Scheben, A.**, Song, B., Tittes, S., Buckler, E., Hufford, M., Kellogg, T., Romay, C., Ross-Ibarra, J., Sun, Q., Siepel, A. 2020. Identifying convergent environmental adaptation in the grass tribe Andropogoneae using a phylogenetic approach. Poster presentation: New York Area Population Genomics Meeting, New York, NY.
- Scheben, A.**, Bayer, P., Dolatabadian, A., Golicz, A., Hurgobin, B., Tirnaz, S., Chan, K.C.K., Edwards, D., Batley, J. 2019. Brassica pangenomes as a novel source of disease resistance. Oral Presentation: Plant and Animal Genome, PAGXXVII, San Diego, CA.
- Scheben, A.**, Bayer, P., Chan, K.C.K., Edwards, D., Batley, J. 2016. Evaluating genotyping by sequencing approaches for *Brassica napus* breeding. Poster Presentation: Brassica, Melbourne, VIC.

Teaching Experience

- 2022 **Coding Camp For Girls**, Instructor, Cold Spring Harbor Laboratory
- 2020 **R for Biologists**, Teaching Assistant, Cold Spring Harbor Laboratory
- 2017-2019 **Bioinformatics and Data Analysis for Genomics**, Lecturer, University of Western Australia
- 2013-2015 **Evolutionary Biology**, Teaching Assistant, University of Munich

Outreach & Professional Development

SERVICE AND OUTREACH

- 2017-2019 **University Hall**, Lead Academic Mentor, Perth
- 2018 **SciTech Student Science Fair**, Scientific Presenter, Perth
- 2017 **Deutschlandfunk Interview**, German public radio interview on genome editing

PEER REVIEW

Genome Biology
 Briefings in Bioinformatics
 Molecular Ecology
 BMC Genomics
 See full peer review record at **Publons**

PROFESSIONAL MEMBERSHIPS

New York Academy of Sciences