



Dr. Paul Schmidt

DATA SCIENTIST / BIOSTATISTICIAN

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Professional experience

BioMath - Applied Statistics and Informatics in Life Sciences

Rostock & Hamburg, Germany

DATA SCIENTIST / GENERAL MANAGER

Since Jan 2019

- Various statistical analyses from raw data to final report, including conceptualization of research approach; data acquisition, cleansing, and integration; data analysis and modeling; interpretation, presentation, and communication of results.
- Recent projects: Time series and correlation analysis of air parameters; Comparison of agricultural treatments; Co-creation and evaluation of monitoring surveys; Epidemiological risk assessments using meta-analyses; Evaluation of geographical distributions using GIS data.
- Implement new / streamline existing SOPs (for e.g. systematic literature reviews and meta-analyses) by making better use of in-depth functionality of established software and additionally via introducing complementing software/tools
- Conduct systematic reviews, write and proofread scientific reports
- General manager since September 2022

Freelancer (part-time)

see 'Workshops' section below

WORKSHOP TEACHER

Since Nov 2018

- Develop and teach workshops on statistics in R; specific content and language according to the contractor
- Provide corresponding material on my websites (see 'Other skills' section below)

University of Hohenheim

Stuttgart, Germany

RESEARCH ASSOCIATE

Sep 2015 - Dec 2018

- Personalized consulting (ranging from single-appointment to project-accompanying) for students and research associates in terms of experimental design, data handling, statistical analyses and/or presentation of results
- Develop, conduct and manage yearly statistical analysis of yield stability data for external company
- Develop, organize and teach workshops in statistics, R and SAS
- Supervise student writing his MSc thesis

BioMath - Applied Statistics and Informatics in Life Sciences

Rostock, Germany

JUNIOR DATA SCIENTIST

Jan 2015 - Aug 2015

- Streamline statistical analyses of monitoring data
- Implement SOP for systematic literature reviews

Education

University of Hohenheim

Stuttgart, Germany

DR. SC. AGR.

Sep 2015 - Nov 2019

- DFG-funded PhD student in the biostatistics unit of Prof. Dr. Hans-Peter Piepho
- Cumulative doctoral thesis: 'Estimating heritability in plant breeding programs' graded 'magna cum laude'

Purdue University

West Lafayette, IN, USA

VISITING PHD STUDENT

Sep 2015 - Dec 2015

- Visiting PhD student in the statistical bioinformatics unit of Prof. Dr. Rebecca Whitbeck Doerge
- Arranged on personal initiative, this collaboration allowed for scientific exchange and inspiration at the beginning of my PhD

University of Hohenheim

Stuttgart, Germany

MSC CROP SCIENCE: PLANT BREEDING

Oct 2012 - Dec 2014

- Specialization in biostatistics and plant breeding (final grade 1.4)
- MSc Thesis: 'Statistical Evaluation and Analysis of PACTS trials as a series of on-farm strip trials without replicates' graded 1.0

University of Hohenheim

Stuttgart, Germany

BSc AGRIBIOLOGY (IN GERMAN)

Oct 2009 - Sep 2012

- Specialization in plant sciences and genetics (final grade 1.9)
- BSc Thesis: 'Cumulative effects of glyphosate trace concentrations during root exposition of winter wheat' graded 1.0

Alexander Central High School

Taylorsville, NC, USA

STUDENT EXCHANGE YEAR

Aug 2006 - Jul 2007

- Completed senior year and obtained high school diploma

Skills

General	collaboration, communication, structuring, time management, strategic oversight, problem solving
Languages	German (native), English (effective operational proficiency)
Open Source	Website https://schmidtpaul.github.io/dsfair_quarto/ , R package BioMathR https://schmidtpaul.github.io/BioMathR/ , R package CitaviR https://schmidtpaul.github.io/CitaviR/
Presentation	data visualization, data analysis reports, scientific publications, presentations
Software	R, Python, SAS, SPSS, SQL, MS Office (VBA)
Statistics	(generalized) linear (mixed) models, exploratory & descriptive data analysis, experimental design

Scientific publications

1. Rahman, N. Md. F., Malik, W. A., Kabir, Md. S., Baten, Md. A., Hossain, Md. I., Paul, D. N. R., Ahmed, R., Biswas, P. S., Rahman, Md. C., Rahman, Md. S., Iftekharuddaula, K. Md., Hadasch, S., Schmidt, P., Islam, Md. R., Rahman, Md. A., Atlin, G. N., & Piepho, H.-P. (2023). 50 years of rice breeding in bangladesh: Genetic yield trends. *Theoretical and Applied Genetics*, 136(1), 1432–2242. <https://doi.org/10.1007/s00122-023-04260-x>
2. Schmidt, K., Friedrichs, P., & Schmidt, P. (2022). *Warenstromanalyse tierischer lebensmittel: Gutachten zur erzeugung, verarbeitung, vermarktung und zum verzehr von fleisch, milch und eiern in deutschland* (No. 158/2022). https://www.umweltbundesamt.de/sites/default/files/medien/479/publikationen/texte_158-2022_warenstromanalyse_tierischer_lebensmittel.pdf
3. Friedrichs, P., Schmidt, P., & Schmidt, K. (2021). *Protanopie und protanomalie bei berufskraftfahrern und berufskraftfahrerinnen - prävalenz und unfallrisiko: = protanopia and protanomaly among professional drivers: Prevalence and accident risk: Vols. Heft 319*. <https://bast.opus.hbz-nrw.de/frontdoor/index/index/searchtype/series/id/5/start/1/rows/25/docId/2574>
4. Schmidt, K., Friedrichs, P., Cornelsen, H. C., Schmidt, P., & Tischer, T. (2021). *Musculoskeletal disorders among children and young people: Prevalence, risk factors, preventive measures: A scoping review*. <https://doi.org/10.2802/511243>
5. Buntaran, H., Piepho, H.-P., Schmidt, P., Rydén, J., Halling, M., & Forkman, J. (2020). Cross-validation of stagewise mixed-model analysis of swedish variety trials with winter wheat and spring barley. *Crop Science*, 60(5), 2221–2240. <https://doi.org/10.1002/csc2.20177>
6. Kukowski, S., Schmidt, P., Piepho, H.-P., Röhl, M., Hauße, H.-K., & Streck, T. (2020). Auswirkungen atmosphärischer stickstoffeinträge auf magere flachland-mähwiesen in baden-württemberg. *Natur Und Landschaft*, 95(2), 58–67. <https://doi.org/10.17433/2.2020.50153773.58-67>
7. Schmidt, P. (2019). *Estimating heritability in plant breeding programs*. <http://opus.uni-hohenheim.de/volltexte/2020/1720/>
8. Schmidt, P., Hartung, J., Bennewitz, J., & Piepho, H.-P. (2019). Heritability in plant breeding on a genotype-difference basis. *Genetics*, 212(4), 991–1008. <https://doi.org/10.1534/genetics.119.302134>
9. Schmidt, P., Hartung, J., Rath, J., & Piepho, H.-P. (2019). Estimating broad-sense heritability with unbalanced data from agricultural cultivar trials. *Crop Science*, 59(2), 525–536. <https://doi.org/10.2135/cropsci2018.06.0376>
10. Schmidt, P., Möhring, J., Koch, R. J., & Piepho, H.-P. (2018). More, larger, simpler: How comparable are on-farm and on-station trials for cultivar evaluation? *Crop Science*, 58(4), 1508–1518. <https://doi.org/10.2135/cropsci2017.09.0555>
11. Tulinská, J., Adel-Patient, K., Bernard, H., Líšková, A., Kuricová, M., Ilavská, S., Horváthová, M., Kebis, A., Rollerová, E., Babincová, J., Aláčová, R., Wal, J.-M., Schmidt, K., Schmidtke, J., Schmidt, P., Kohl, C., Wilhelm, R., Schiemann, J., & Steinberg, P. (2018). Humoral and cellular immune response in wistar han RCC rats fed two genetically modified maize MON810 varieties for 90 days (EU 7th framework programme project GRACE). *Archives of Toxicology*, 92(7), 2385–2399. <https://doi.org/10.1007/s00204-018-2230-z>
12. Schmidt, K., Schmidtke, J., Schmidt, P., Kohl, C., Wilhelm, R., Schiemann, J., van der Voet, H., & Steinberg, P. (2017). Variability of control data and relevance of observed group differences in five oral toxicity studies with genetically modified maize MON810 in rats. *Archives of Toxicology*, 91(4), 1977–2006. <https://doi.org/10.1007/s00204-016-1857-x>
13. Zeljenková, D., Aláčová, R., Ondřejková, J., Ambušová, K., Bartušová, M., Kebis, A., Kovřížnych, J., Rollerová, E., Szabová, E., Wimmerová, S., Černák, M., Krivošíková, Z., Kuricová, M., Líšková, A., Spustová, V., Tulinská, J., Levkut, M., Révajová, V., Ševčíková, Z., ... Steinberg, P. (2016). One-year oral toxicity study on a genetically modified maize MON810 variety in wistar han RCC rats (EU 7th framework programme project GRACE). *Archives of Toxicology*, 90(10), 2531–2562. <https://doi.org/10.1007/s00204-016-1798-4>

Workshops

Jul 2024	Statistics with R - an Introduction Universität Bonn via zoom	12h
Jul 2024	Data Science for exp. life sciences with R (part 2) Forschungseinrichtungen BMEL via zoom	20h
Jul 2024	Data Science in den exp. Naturwiss. (Teil 2) Forschungseinrichtungen BMEL via zoom	20h
Apr 2024	Data science for exp. life sciences with R (part 1) Forschungseinrichtungen BMEL via zoom	20h
Apr 2024	Data Science in den exp. Naturwiss. mit R (Teil 1) Forschungseinrichtungen BMEL via zoom	20h
Apr 2024	Data Science with R (part 2) Max Planck Institut Tübingen via zoom	18h
Apr 2024	Data Analysis mit Python Bundeswehr (e-learning)	96h
Mar 2024	Data Analysis mit Python Bundeswehr (e-learning)	96h
Feb 2024	Advanced data visualization in R 70th Biometrical Colloquium	3h
Dec 2023	Feldversuche und Statistik - Interaktive Beratung Hochschule Nürtingen via zoom	8h
Dec 2023	Data Science for exp. life sciences with R (part 2) Forschungseinrichtungen BMEL via zoom	20h
Dec 2023	Data Science in den exp. Naturwiss. (Teil 2) Forschungseinrichtungen BMEL via zoom	20h
Dec 2023	Statistics with R - an Introduction Universität Bonn via zoom	12h
Nov 2023	Experimental Design - Practicals in R CIHEAM Zaragoza via zoom	10h
Nov 2023	Data Science with R - an Introduction Max Planck Institut Tübingen via zoom	18h
Oct 2023	Data science for exp. life sciences with R (part 1) Forschungseinrichtungen BMEL via zoom	20h
Oct 2023	Data Science in den exp. Naturwiss. mit R (Teil 1) Forschungseinrichtungen BMEL via zoom	20h
Jul 2023	R Introduction Universität Flensburg via zoom	16h
Jul 2023	Statistics with R - an Introduction Universität Bonn via zoom	12h
Jun 2023	Data science for exp. life sciences with R (part 2) Forschungseinrichtungen BMEL via zoom	20h
Jun 2023	Data Science in den exp. Naturwiss. mit R (Teil 2) Forschungseinrichtungen BMEL via zoom	20h
May 2023	Statistics with R - an Introduction Universität Bonn via zoom	12h
May 2023	Data science for exp. life sciences with R (part 1) Forschungseinrichtungen BMEL via zoom	20h
May 2023	Data Science in den exp. Naturwiss. mit R (Teil 1) Forschungseinrichtungen BMEL via zoom	20h
Feb 2023	Introduction to data science for exp. life sciences with R Pro-RUWA via zoom	24h
Nov 2022	Data science for exp. life sciences with R (part 2) Forschungseinrichtungen BMEL via zoom	20h
Nov 2022	Data Science in den exp. Naturwiss. mit R (Teil 2) Forschungseinrichtungen BMEL via zoom	20h
Nov 2022	Data science for exp. life sciences with R (part 1) Forschungseinrichtungen BMEL via zoom	20h
Nov 2022	Data Science in den exp. Naturwiss. mit R (Teil 1) Forschungseinrichtungen BMEL via zoom	20h
Nov 2022	Statistics with R - an Introduction Universität Bonn via zoom	12h
Oct 2022	R and the Tidyverse FBN, Dummerstorf via zoom	5h
Mar 2022	Data science for exp. life sciences with R (part 2) Forschungseinrichtungen BMEL via zoom	24h
Mar 2022	Data Science in den exp. Naturwiss. mit R (Teil 2) Forschungseinrichtungen BMEL via zoom	24h
Mar 2022	Data science for exp. life sciences with R (part 1) Forschungseinrichtungen BMEL via zoom	24h
Mar 2022	Data Science in den exp. Naturwiss. mit R (Teil 1) Forschungseinrichtungen BMEL via zoom	24h
Dec 2021	Statistics with R (Beginner) Universität Kassel	24h
Jul 2021	Data science in den Naturwiss. mit R (Teil 2) Forschungseinrichtungen BMEL via zoom	24h
May 2021	Data science in den Naturwiss. mit R (Teil 1) Forschungseinrichtungen BMEL via zoom	24h
Mar 2021	Data science in den Naturwiss. mit R (Teil 2) Forschungseinrichtungen BMEL via zoom	24h
Nov 2020	Planning exp. designs, repeated meas., and their analyses in R Universität Kassel via zoom	16h
Nov 2020	Data science in den Naturwiss. mit R (Teil 1) Forschungseinrichtungen BMEL via zoom	24h
Oct 2020	Experimental Design - Practicals in R CIHEAM Zaragoza via zoom	10h
Mar 2020	Real-time consultation on statistics and mixed models in R Universität Kassel	16h
Dec 2019	Basics of applied statistics Universität Rostock	16h
Nov 2019	Data science for life sciences with R (part 2) Forsch.Eintr. BMEL, Braunschweig	24h
Oct 2019	Data science for life sciences with R (part 1) Forsch.Eintr. BMEL, Braunschweig	24h
Sep 2019	Essential basics of statistics Universität Rostock	16h
Nov 2018	Gemischte Modelle in R Forsch.Eintr. BMEL, Braunschweig	24h
May 2018	Implementation of yield stability assessment with ASReml-R Bangladesh Rice Res. Inst., Gazipur	4h
2016-2018	Statistical analysis with SAS (monthly) Universität Hohenheim, Stuttgart	18h
2016-2018	Statistical analysis with R (monthly) Universität Hohenheim, Stuttgart	18h