



# 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

<b>General</b>	collaboration, communication, structuring, time management, strategic oversight, problem solving
<b>Languages</b>	German (native), English (effective operational proficiency)
<b>Open Source</b>	Website <a href="https://schmidtpaul.github.io/dsfair_quarto/">https://schmidtpaul.github.io/dsfair_quarto/</a> , R package BioMathR <a href="https://schmidtpaul.github.io/BioMathR/">https://schmidtpaul.github.io/BioMathR/</a> , R package CitaviR <a href="https://schmidtpaul.github.io/CitaviR/">https://schmidtpaul.github.io/CitaviR/</a>
<b>Presentation</b>	data visualization, data analysis reports, scientific publications, presentations
<b>Software</b>	R, Python, SAS, SPSS, SQL, MS Office (VBA)
<b>Statistics</b>	(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](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>
7. Schmidt, K., Schmidtke, J., & Schmidt, P. (2020). *Studie zum potenzial von wirtschaftsdünger zur energetischen verwertung im land brandenburg. schlussbericht* (Az.: VV-0039-2017). <https://mluk.brandenburg.de/sixcms/media.php/9/Potenzial-Wirtschaftsdünger-energetische-Verwertung-Brandenburg.pdf>
8. Schmidt, P. (2019). *Estimating heritability in plant breeding programs*. <http://opus.uni-hohenheim.de/volltexte/2020/1720/>
9. 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>
10. 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>
11. 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>
12. 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>
13. 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>
14. 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

2024 Sep	<b>Data science with R for scientists</b>	Universität Rostock via zoom	12h
2024 Sep	<b>R and the Tidyverse</b>	TU Dortmund	6h
2024 Aug	<b>Data Analytics mit Python</b>	Bundeswehr (e-learning)	96h
2024 Jul	<b>Statistics with R - an Introduction</b>	Universität Bonn via zoom	12h
2024 Jun	<b>Data science for exp. life sciences with R (pt. 2)</b>	Forsch.Eintr. BMEL via zoom	20h
2024 Jun	<b>Data Science in den exp. Naturwiss. (TL. 2)</b>	Forsch.Eintr. BMEL via zoom	20h
2024 Apr	<b>Data science for exp. life sciences with R (pt. 1)</b>	Forsch.Eintr. BMEL via zoom	20h
2024 Apr	<b>Data Science in den exp. Naturwiss. mit R (TL. 1)</b>	Forsch.Eintr. BMEL via zoom	20h
2024 Apr	<b>Data Science with R (pt. 2)</b>	Max Planck Inst. Tübingen via zoom	18h
2024 Apr	<b>Data Analytics mit Python</b>	Bundeswehr (e-learning)	96h
2024 Mar	<b>Data Analytics mit Python</b>	Bundeswehr (e-learning)	96h
2024 Feb	<b>Advanced data visualization in R</b>	70th Biometrical Colloquium, Lübeck	3h
2023 Dec	<b>Feldversuche und Statistik - Interaktive Beratung</b>	Hochschule Nürtingen-Geislingen via zoom	8h
2023 Dec	<b>Data science for exp. life sciences with R (pt. 2)</b>	Forsch.Eintr. BMEL via zoom	20h
2023 Dec	<b>Data Science in den exp. Naturwiss. (TL. 2)</b>	Forsch.Eintr. BMEL via zoom	20h
2023 Dec	<b>Statistics with R - an Introduction</b>	Universität Bonn via zoom	12h
2023 Nov	<b>exp. Design - Practicals in R</b>	CIHEAM Zaragoza via zoom	10h
2023 Nov	<b>Data Science with R - an Introduction</b>	Max Planck Inst. Tübingen via zoom	18h
2023 Oct	<b>Data science for exp. life sciences with R (pt. 1)</b>	Forsch.Eintr. BMEL via zoom	20h
2023 Oct	<b>Data Science in den exp. Naturwiss. mit R (TL. 1)</b>	Forsch.Eintr. BMEL via zoom	20h
2023 Jul	<b>R Introduction</b>	Universität Flensburg via zoom	16h
2023 Jul	<b>Statistics with R - an Introduction</b>	Universität Bonn via zoom	12h
2023 Jun	<b>Data science for exp. life sciences with R (pt. 2)</b>	Forsch.Eintr. BMEL via zoom	20h
2023 Jun	<b>Data Science in den exp. Naturwiss. mit R (TL. 2)</b>	Forsch.Eintr. BMEL via zoom	20h
2023 May	<b>Statistics with R - an Introduction</b>	Universität Bonn via zoom	12h
2023 May	<b>Data science for exp. life sciences with R (pt. 1)</b>	Forsch.Eintr. BMEL via zoom	20h
2023 May	<b>Data Science in den exp. Naturwiss. mit R (TL. 1)</b>	Forsch.Eintr. BMEL via zoom	20h
2023 Feb	<b>Introduction to data science for exp. life sciences with R</b>	Pro-RUWA via zoom	24h
2022 Nov	<b>Data science for exp. life sciences with R (pt. 2)</b>	Forsch.Eintr. BMEL via zoom	20h
2022 Nov	<b>Data Science in den exp. Naturwiss. mit R (TL. 2)</b>	Forsch.Eintr. BMEL via zoom	20h
2022 Nov	<b>Data science for exp. life sciences with R (pt. 1)</b>	Forsch.Eintr. BMEL via zoom	20h
2022 Nov	<b>Data Science in den exp. Naturwiss. mit R (TL. 1)</b>	Forsch.Eintr. BMEL via zoom	20h
2022 Nov	<b>Statistics with R - an Introduction</b>	Universität Bonn via zoom	12h
2022 Oct	<b>R and the Tidyverse</b>	FBN, Dummerstorf via zoom	5h
2022 Mar	<b>Data science for exp. life sciences with R (pt. 2)</b>	Forsch.Eintr. BMEL via zoom	24h
2022 Mar	<b>Data Science in den exp. Naturwiss. mit R (TL. 2)</b>	Forsch.Eintr. BMEL via zoom	24h
2022 Mar	<b>Data science for exp. life sciences with R (pt. 1)</b>	Forsch.Eintr. BMEL via zoom	24h
2022 Mar	<b>Data Science in den exp. Naturwiss. mit R (TL. 1)</b>	Forsch.Eintr. BMEL via zoom	24h
2021 Dec	<b>Statistics with R (Beginner)</b>	Universität Kassel	24h
2021 Jul	<b>Data science in den Naturwiss. mit R (TL. 2)</b>	Forsch.Eintr. BMEL via zoom	24h
2021 May	<b>Data science in den Naturwiss. mit R (TL. 1)</b>	Forsch.Eintr. BMEL via zoom	24h
2021 Mar	<b>Data science in den Naturwiss. mit R (TL. 2)</b>	Forsch.Eintr. BMEL via zoom	24h
2020 Nov	<b>Planning exp. designs, repeated meas., and their analyses in R</b>	Universität Kassel via zoom	16h
2020 Nov	<b>Data science in den Naturwiss. mit R (TL. 1)</b>	Forsch.Eintr. BMEL via zoom	24h
2020 Oct	<b>exp. Design - Practicals in R</b>	CIHEAM Zaragoza via zoom	10h
2020 Mar	<b>Real-time consultation on statistics and mixed models in R</b>	Universität Kassel	16h
2019 Dec	<b>Basics of applied statistics</b>	Universität Rostock	16h
2019 Nov	<b>Data science in den Naturwiss. mit R (TL. 2)</b>	Forsch.Eintr. BMEL, Braunschweig	24h
2019 Oct	<b>Data science in den Naturwiss. mit R (TL. 1)</b>	Forsch.Eintr. BMEL, Braunschweig	24h
2019 Sep	<b>Essential basics of statistics</b>	Universität Rostock	16h
2018 Nov	<b>Gemischte Modelle in R</b>	Forsch.Eintr. BMEL, Braunschweig	24h
2018 May	<b>Implementation of yield stability assessment with ASReml-R</b>	Bangladesh Rice Res. Inst., Gazipur	4h
2016-2018	<b>Statistical analysis with SAS (monthly)</b>	Universität Hohenheim, Stuttgart	18h
2016-2018	<b>Statistical analysis with R (monthly)</b>	Universität Hohenheim, Stuttgart	18h