

Samuel Pawel

Biostatistician | Meta-Researcher | Methodologist
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Education

University of Zurich <i>PhD in Epidemiology and Biostatistics</i> Supervisor: Prof. Dr. Leonhard Held Thesis: Reverse-Bayes Methods for Replication Studies	Zurich, CH 10/2019 – 03/2023
University of Zurich <i>Master of Science in Biostatistics; Grade: 5.9/6.0</i> Thesis: Predictive evaluation of replication studies	Zurich, CH 08/2017 – 08/2019
University of Zurich <i>Bachelor of Science in Psychology; Grade: 5.7/6.0; Minor: Biology</i> Thesis: Questionable research practices in psychological research and recommendations to overcome the current replicability crisis	Zurich, CH 08/2014 – 01/2018

Work Experience

University of Zurich; Department of Biostatistics <i>Oberassistent</i>	Zurich, CH 10/2024 – present
University of Zurich; Department of Biostatistics <i>Postdoctoral Researcher</i>	Zurich, CH 04/2023 – 09/2024
University of Amsterdam; Department of Psychological Methods <i>Visiting PhD Student</i>	Amsterdam, NL 02/2022 – 08/2022
University of Zurich; Center for Reproducible Science <i>Research Fellow (voluntary)</i>	Zurich, CH 01/2021 – present
University of Zurich; Department of Biostatistics <i>PhD Student</i>	Zurich, CH 10/2019 – 03/2023
University of Zurich; Chair for Psychological Methods, Evaluation, and Statistics <i>Student Assistant</i>	Zurich, CH 10/2018 – 12/2018
Stiftung Forelhaus Zürich <i>Night Watch</i>	Zurich, CH 02/2016 – 10/2018
University of Zurich; Cognitive Psychology Unit <i>Student Assistant</i>	Zurich, CH 08/2016 – 01/2018
Psychiatric Clinic Wil <i>Alternative Civilian Service</i>	Wil, CH 01/2013 – 07/2014

Teaching

Statistical Consulting (MSc in Biostatistics) <i>Supervisor</i>	2023, 2024, 2025
Biostatistics Journal Club (MSc in Biostatistics) <i>Teaching Assistant (2021), Instructor (2023, 2024)</i>	2021, 2023, 2024
Longitudinal Data Analysis (MSc in Biostatistics) <i>Teaching Assistant</i>	2020, 2025
Clinical Biostatistics (MSc in Biostatistics) <i>Teaching Assistant</i>	2019

Research Interests

Biostatistics	Statistical inference	Meta-research
Evidence synthesis	Simulation studies methodology	Computational reproducibility

Memberships and other Roles

- Fellow of the Center for Reproducible Science from the University of Zurich (from 2021)
- Founding member and coordinator of the Swiss Reproducibility Network Academy (from 2021)
- Co-Organizer of the Zurich R User Group (from 2020 to 2023)
- Member of the International Society for Bayesian Analysis (from 2020 to 2022)
- Member of the International Society for Clinical Biostatistics (from 2025)

Reviewer for Journals

Journal of the American Statistical Association (3)	The Annals of Applied Statistics (1)
Statistical Papers (1)	Biometrical Journal (2)
Biometrics (1)	The American Statistician (1)
PLOS ONE (1)	Meta-Psychology (1)
New England Journal of Statistics in Data Science (1)	Behavior Research Methods (2)
Statistical Methods & Applications (1)	Statistics in Biopharmaceutical Research (1)
Bayesian Analysis (1)	Journal of the Royal Statistical Society: Series C (1)
BMC Medical Research Methodology (2)	

Skills

Languages	English (fluent), German (native), French (basic), Japanese (beginner)
Computer	R (advanced), \LaTeX (intermediate), Linux/shell/git/Docker/Make (intermediate), Python (basic)

Grants

2022 – Mobility grant in SNSF research project (5'923 CHF)

Awards and Prizes

Master Thesis: *Predictive Evaluation of Replication Studies* – UZH Semester award for outstanding scholarly work

Organizational Activities

Reproducibility Hackathon at the Swiss Reproducibility Conference 2024 on 11th June 2024. Organized with Peter Degen. 19 Participants. Report:[10.5281/zenodo.12516515](https://doi.org/10.5281/zenodo.12516515)

Swiss ReproHack on 20th May 2022. Organized with Charlotte Micheloud, Ursa Bernardic, and Marianna Rosso. 13 Participants from all over Switzerland. Talks by Mark Robinson, Anja Eggert, Tim Errington.

Brown bag seminar series in 2020 and 2021. Organized with Lucas Kook occasional lunch seminars for members of the Department of Biostatistics at the University of Zurich.

Software

R package bfpwr	doi.org/10.32614/CRAN.package.bfpwr	Role: Creator
R package BayesRep	doi.org/10.32614/CRAN.package.BayesRep	Role: Creator
R package BayesRepDesign	doi.org/10.32614/CRAN.package.BayesRepDesign	Role: Creator
R package ciCalibrate	doi.org/10.32614/CRAN.package.ciCalibrate	Role: Creator
R package ppRep	doi.org/10.32614/CRAN.package.ppRep	Role: Creator
R package ReplicationSuccess	doi.org/10.32614/CRAN.package.ReplicationSuccess	Role: Contributor

Talks, Posters, and Workshops

14. Talk: Replication of null results: Absence of evidence or evidence of absence? *META-REP 2024*, Munich, DE, 2024, October

13. Talk: Meta-scientific perspectives on simulation studies, *ZüKoSt: Seminar on Applied Statistics*, ETH Zurich, CH, 2024, October
12. Talk: Discussion of Campbell and Gustafson (2023): A Predictive View of the Jeffreys-Lindley Paradox (supporting Leonhard Held). *Bayesian Analysis discussion webinar*, 2024, October
11. Talk: Bayesian Approaches to Designing Replication Studies, *53rd DGPs Congress/15th ÖGP Conference*, Vienna, AT, 2024, September
10. Talk: Improving the quality of simulation studies with simulation protocols, *Swiss Reproducibility Conference 2024*, Zurich, CH, 2024, June
9. Talk: Bayes Factors for Testing and Estimation, *NANOGrav New Physics Working Group telecon*, 2024, February
8. Talk: Power Priors for Replication Studies, *Bayesian Biostatistics 2023*, Utrecht, NL, 2023, October
7. Talk: Pitfalls and Potentials in Simulation Studies, *CEN 2023*, Basel, CH, 2023, September
6. Workshop: Dynamic Reporting (together with Felix Hofmann). UZH Reproducibility Day 2023. February 2023.
5. Talk: Pitfalls and Potentials in Simulation Studies, *ReproducibiliTea Journal Club*, Center for Reproducible Science, Zurich, CH, 2022, November
4. Poster: Evidential Calibration of Confidence Intervals, *Workshop: "Safe, Anytime-Valid Inference (SAVI) and Game-theoretic Statistics"*, Eindhoven, NL, 2022, May
3. Talk: The sceptical Bayes factor for the evidential assessment of replication success, *GMDS & CEN-IBS 2020*, Berlin, DE, 2020, September
2. Workshop: Design of Replication Experiments (together with Leonhard Held and Charlotte Micheloud). LMU Munich. February 2020.
1. Talk: Predictive evaluation of replication studies, *Bayesian Biostatistics*, Lyon, FR, 2019, May

Articles and Preprints

A star superscript (*) denotes equal contribution

28. Kelter, R., **Pawel, S.** (2025). Bayesian Power and Sample Size Calculations for Bayes Factors in the Binomial Setting. Preprint:10.48550/arXiv.2502.02914. Code:<https://osf.io/mn4e3/>
27. **Pawel, S.**, Bartoš, F., Siepe, B.S., Lohmann, A. (2024). Handling Missingness, Failures, and Non-Convergence in Simulation Studies: A Review of Current Practices and Recommendations. Preprint:10.48550/arXiv.2409.18527. Code:<https://github.com/SamCH93/missSim>
26. Held, L., Hofmann, F., **Pawel, S.**, (2024). Combined p -value functions for meta-analysis. Preprint:10.48550/arXiv.2408.08135. Code:<https://osf.io/je8xb/>. Simulation code:https://github.com/felix-hof/confMeta_simulation

25. Schläpfer, S., Astakhov, G., **Pawel, S.**, Eicher, M., Kowatsch, T., Held, L., Witt, C. M., Barth, J. (2024). Effects of app-based relaxation techniques on perceived momentary relaxation: Observational data analysis in people with cancer. *Journal of Psychosomatic Research*, 111864. Article:10.1016/j.jpsychores.2024.111864. Code:<https://osf.io/9nqyb/>
24. **Pawel, S.**, Held, L. (2024). Closed-Form Power and Sample Size Calculations for Bayes Factors. Preprint:10.48550/arxiv.2406.19940. Code:<https://github.com/SamCH93/bfpwr>
23. Macrì Demartino, R., Egidi, L., Held, L., **Pawel, S.** (2024). Mixture priors for replication studies. Preprint:10.48550/arxiv.2406.19152. Code:<https://github.com/RoMaD-96/MixRep>
22. Siepe*, B.S., Bartoš*, F., Morris, T.P., Boulesteix, A.-L., Heck, D.W., **Pawel*, S.** (2024). Simulation Studies for Methodological Research in Psychology: A Standardized Template for Planning, Preregistration, and Reporting. *Psychological Methods*, Article:10.1037/met0000695. Preprint:10.31234/osf.io/ufgy6. Code:<https://github.com/bsiepe/SimPsychReview>
21. Held, L., **Pawel, S.** (2024). Discussion of Campbell and Gustafson (2023): A Predictive View of the Jeffreys-Lindley Paradox. *Bayesian Analysis*, Article:10.1214/23-BA1397.
20. **Pawel, S.**, Held, L. (2024). Samuel Pawel and Leonhard Held's contribution to the Discussion of 'Safe Testing' by Grünwald, de Heide, and Koolen (2023). *Journal of the Royal Statistical Society: Series B (Statistical Methodology)*, Article:10.1093/jrsssb/qkae064.
19. **Pawel, S.** (2024). A Bayes Factor Framework for Unified Parameter Estimation and Hypothesis Testing. Preprint:10.48550/arxiv.2403.09350. Code:<https://github.com/SamCH93/BFF>
18. Held, L., **Pawel, S.**, Micheloud, C., (2024). The assessment of replicability using the sum of p -values. Article:10.1098/rsos.240149. Preprint:10.48550/arXiv.2401.13615. Code:<https://osf.io/uds2a/>
17. **Pawel*, S.**, Heyard*, R., Micheloud, C., Held, L. (2023). Replication of "null results" – Absence of evidence or evidence of absence? *eLife*, Article:10.7554/eLife.92311. Preprint:10.48550/arXiv.2305.04587. Code:<https://gitlab.uzh.ch/samuel.pawel/rsAbsence>
16. **Pawel, S.**, Aust, F., Held, L., Wagenmakers, E.-J. (2023). Power Priors for Replication Studies. *TEST*, Article:10.1007/s11749-023-00888-5. Preprint:10.48550/arXiv.2207.14720. Code:<https://github.com/SamCH93/ppReplication>
15. **Pawel, S.**, Consonni, G., Held, L. (2023). Bayesian approaches to designing replication studies. *Psychological Methods*, Article:10.1037/met0000604. Preprint:10.48550/arXiv.2211.02552. Code:<https://github.com/SamCH93/BAtDRS>
14. **Pawel, S.**, Aust, F., Held, L., Wagenmakers, E.-J. (2023). Normalized power priors always discount historical data. *Stat*, 12(1), e591. Article:10.1002/sta4.591. Preprint:10.48550/ARXIV.2206.04379. Code:<https://github.com/SamCH93/ppPooling>
13. **Pawel, S.**, Ly, A., Wagenmakers, E.-J. (2023). Evidential Calibration of Confidence Intervals. *The American Statistician*, Article:10.1080/00031305.2023.2216239. Preprint:10.48550/ARXIV.2206.12290. Code:<https://github.com/SamCH93/ECoCI>
12. **Pawel*, S.**, Kook*, L., Reeve, K. (2023). Pitfalls and potentials in simulation studies: Questionable research practices in comparative simulation studies allow for spurious claims of superiority of any method. *Biometrical Journal*, e2200091. Article:10.1002/bimj.202200091. Preprint:10.48550/arXiv.2203.13076. Code:<https://github.com/SamCH93/SimPaper>

11. Drude, N., Martinez-Gamboa, L., Danziger, M., Collazo, A., Kniffert, S., Wiebach, J., Nilsonne, G., Konietzschke, F., Piper, S., **Pawel, S.**, ..., Toelch, U. (2022). Planning preclinical confirmatory multicenter trials to strengthen translation from basic to clinical research – a multi-stakeholder workshop report. *Translational Medicine Communications*, 7(24). Article:10.1186/s41231-022-00130-8. Preprint:10.21203/rs.3.rs-1855244/v1
10. Bartoš, F., **Pawel, S.**, Wagenmakers, E.-J. (2022). When Evidence and Significance Collide. Preprint:10.48550/arXiv.2206.04435. Code:https://osf.io/hvmkc/
9. Debelak, R., **Pawel, S.**, Strobl, C., Merkle, E. C. (2022). Score-based measurement invariance checks for Bayesian maximum-a-posteriori estimates in item response theory. *British Journal of Mathematical and Statistical Psychology*, 75(3), 728–752. Article:10.1111/bmsp.12275. Preprint:10.31234/osf.io/24a9g
8. **Pawel, S.**, Matthews, R., Held, L. (2022). Comment on “Bayesian additional evidence for decision making under small sample uncertainty”. *BMC Medical Research Methodology*, 22(149). Article:10.1186/s12874-022-01635-4. Code:https://github.com/SamCH93/BAEcomment
7. **Pawel, S.**, Held, L. (2022). The sceptical Bayes factor for the assessment of replication success. *Journal of the Royal Statistical Society: Series B (Statistical Methodology)*, 84(3). 879–911. Article:10.1111/rssb.12491. Preprint:10.48550/arXiv.2009.01520. Code:https://gitlab.uzh.ch/samuel.pawel/BFScode
6. Held, L., Micheloud, C., **Pawel, S.** (2022). The assessment of replication success based on relative effect size. *The Annals of Applied Statistics*, 16(2), 706–720. Article:10.1214/21-AOAS1502. Preprint:10.48550/arXiv.2009.07782. Code:https://github.com/SamCH93/RSGolden
5. Held, L., Matthews, R., Ott, M., **Pawel, S.** (2022). Reverse-Bayes methods for evidence assessment and research synthesis. *Research Synthesis Methods*, 13(3), 295–314. Article:10.1002/jrsm.1538. Preprint:10.48550/arXiv.2102.13443. Code:https://gitlab.uzh.ch/samuel.pawel/Reverse-Bayes-Code
4. Lenggenhager, D., **Pawel, S.**, Honcharova-Biletska, H., Evert, K., Wenzel, J. J., Montani, M., Furrer, E., Fraga, M., Moradpour, D., Sempoux, C., Weber, A. (2021). The histologic presentation of hepatitis E reflects patients’ immune status and pre-existing liver condition. *Modern Pathology*, 34, 233–248. Article:10.1038/s41379-020-0593-1
3. Held, L., **Pawel, S.**, Schwab S. (2020). Replication power and regression to the mean. *Significance*, 17(6), 10–11. Article:10.1111/1740-9713.01462
2. Held, L., **Pawel, S.** (2020). Comment on “The Role of p -Values in Judging the Strength of Evidence and Realistic Replication Expectations”. *Statistics in Biopharmaceutical Research*, 13(1), 46–48. Article:10.1080/19466315.2020.1828161
1. **Pawel, S.**, Held, L. (2020). Probabilistic forecasting of replication studies. *PLOS ONE*, 15(4), e0231416. Article:10.1371/journal.pone.0231416. Preprint:10.31234/osf.io/fhwb7. Code:https://github.com/SamCH93/PFoRS

Other Works

6. **Pawel, S.**, Kutlar, L., Knöpfle, P. (2025). A Robustness Reproduction of “Do We Become More Lonely With Age? A Coordinated Data Analysis of Nine Longitudinal Studies” doi:10.5281/zenodo.13587432. Code:https://github.com/SamCH93/loneliness-trajectories

5. Molo, F., **Pawel, S.**, Fraga-Gonzalez, G. (2024). A robustness reproduction of "A systematic review and meta-analysis of 90 cohort studies of social isolation, loneliness and mortality". doi:10.5281/zenodo.13587432. Code:<https://gitlab.uzh.ch/crsuzh/nhb-replication>
4. Siepe*, B.S., Bartoš*, F., Morris, T.P., Boulesteix, A.-L., Heck, D.W., **Pawel*, S.** (2024). ADEMP-PreReg Simulation Study Template. doi:10.5281/zenodo.10057883. Development repository:<https://github.com/bsiepe/ADEMP-PreReg>
3. **Pawel, S.**, Held, L. (2023). Multisite generalizations of replicability measures. Working paper:10.5281/zenodo.8379956.
2. Hofmann, F., **Pawel, S.**, Hebeisen, M., Held, L. (2023). CRS Primer: Dynamic Reporting. Publication:10.5281/zenodo.8354360.
1. Hofmann, F., **Pawel, S.**, Röthlisberger, M., Held, L. (2023). CRS Primer: Digital Collaboration. Publication:10.5281/zenodo.8354375.