

Oct 2023 – May 2025

NEWSLETTER

Publication Highlights

Coupling metabolomics and exome sequencing reveals graded effects of rare damaging heterozygous variants on gene function and human traits

Scherer N, Fässler D, Borisov O, Cheng Y, Schlosser P, [...], Schmidts M, [...], Hertel J, Köttgen A

Nature Genetics

Efficacy of psychotherapy versus pharmacotherapy, or their combination, in chronic depression: study protocol for a systematic review and network meta-analysis using aggregated and individual patient data
Schramm E, Elsaesser M, Müller J, Kwarteng NA, [...], Nikolakopoulou A

BMJ Open

Investigating a domain adaptation approach for integrating different measurement instruments in a longitudinal clinical trial

Hackenberg M, Pfaffenlehner M, Behrens M, Pechmann A, Kirschner J, Binder H

Biometrical Journal

Testing Similarity of Parametric Competing Risks Models for Identifying Potentially Similar Pathways in Healthcare

Möllenhoff K, Binder N, Dette H

Statistics in Medicine

Effective genome editing with an enhanced ISDra2 TnpB system and deep learning-predicted ω RNAs

Marquart KF, [...], Kaufmann MM, Matsushita M, Haenggi T, Cathomen T, [...], Schwank G

Nature Methods

Eureka-Moments in Transformers: Multi-Step Tasks Reveal Softmax Induced Optimization Problems

Hoffmann DT, Schrodi S, Bratulić J, Behrmann N, Fischer V, Brox T.

ICML 2024

Proceedings of Machine Learning Research

Sharp adaptive and pathwise stable similarity testing for scalar ergodic diffusions

Brutsche J, Rohde A.

Annals of Statistics

Accurate predictions on small data with a tabular foundation model

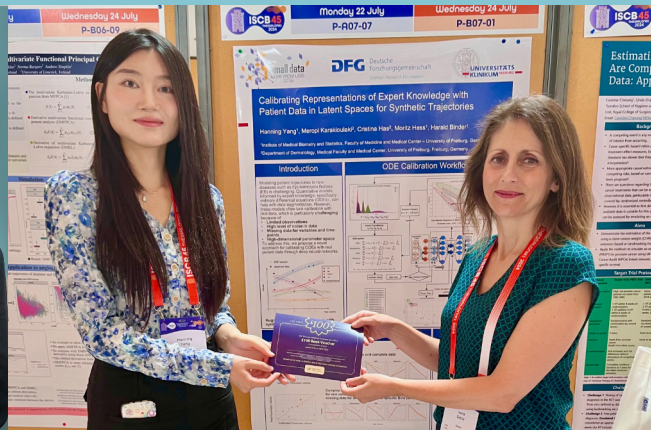
Hollmann N, Müller S, Purucker L, [...], Hutter F

Nature

Awards



Pascal Schlosser (middle) receiving the Helmut Holzer Research Prize



Hanning Yang (left) receiving the Poster Award at ISCB 2024

Awards

Recipient	Award	Awarding Institution
Pascal Schlosser	Helmut Holzer Research Prize	Wissenschaftliche Gesellschaft Freiburg
Carsten Dormann	"Highly Cited Researchers" for 2023	Clarivate Analytics
Frank Hutter	Excellent doctoral supervision	University of Freiburg
Nadine Binder	Sabine-von-Kleist Habilitation Prize 2025	Medical Faculty, University of Freiburg
Carola Heinzel	Alumni Prize 2024	Alumni Freiburg Association
Abhinav Valada	Outstanding Workshop Presentation Award	IROS 2024
Hanning Yang	Poster Award	ISCB 2024
Carola Heinzel	Best Presentation Award	MaxEnt 2024

Past Events / Projects



SmallData Seminar & Workshop Series

June 21, 2024 - Mar 12, 2025

In this series, researchers from different projects meet to share methodologies, tools or discuss relevant topics with invited speakers, amongst others.

More information on previous and upcoming seminars and workshops can be found [here](#).

WiDS @ University of Freiburg: Equity and diversity in the era of AI and small data

July 04, 2024

Esteemed speakers Regina Herzog from University of Freiburg, Wanda Gerding from University of Bochum, and Felix Wittenzellner from GDAPE joined us on thought-provoking discussions and shared their insights on advancing equity within our associated institutions.



**Women in
Data Science
Worldwide**

@ University of Freiburg



SmallData Symposium

Oct 07-08, 2024

Featuring national and international experts, interdisciplinary panel discussions and poster pitch tours, the *SmallData* Symposium 2024 set itself as an example of interdisciplinary exchange to create a shared small data language.

More details on the past program [here](#).

Past Events / Projects



SMART Master Lab 1.0

Kick off: Feb 10-11, 2025

The CRC *SmallData* launched the first cohort of the SMART Master Lab. This 10 week ongoing program aims to equip master's students with SmallData research skills through hands-on training and expert mentorship. Further information about the current and future programs can be found [here](#).



Science Days

Oct 24-26, 2024

Taking place at the Confertainment Center in Europapark, the Science Days fair sparked curiosity and brought science closer to the next generations. By figuring out how AI works, the games featured by our early career researchers offered kids a chance to solve complex problems and put their creativity to the test.



Girls' Day

Apr 03, 2025

An event designed to inspire and empower young women to explore career opportunities in fields where women are traditionally underrepresented. The initiative helped spark curiosity, challenge gender stereotypes, and open up a world of professional possibilities for the next generation.

Upcoming Events

All events featured in this newsletter are open to the public. Internal-only events will be indicated as such in our website. More information on previous and upcoming events can be found [here](#).

Workshop: Causal Modeling with Small Data

May 23, 2025

This workshop introduces advances in causal inference and modeling tailored to small data settings. Topics include latent representation learning for unseen perturbations, in-context learning for causal effect estimation without known graphs, and target trial emulation to address time-dependent biases in clinical data. Participants will gain insights into methods for robust causal reasoning in complex biomedical contexts.

SmallData Seminar Series: A joint foundational model for 2D/3D biomedical imaging data – datasets and benchmarks

May 28, 2025

"Several projects are applying foundation models to biomedical imaging data. We consider combining these efforts and ask: Can we create a joint training dataset for a foundation model? [...] Participants will show examples of their potential training data, dataset statistics, and show existing and potential new benchmarks."

Upcoming Events

Designing Synthetic Benchmarks for Real-World Cohort Data

June 03-04, 2025

A joint Workshop of CRC 1597 Small Data, the STRATOS initiative, EVA4MII and PrivateAIM.

This two-day workshop focuses on designing synthetic benchmark datasets, complemented by diagnostic tools, tailored to the challenges commonly encountered in clinical cohort data, with an emphasis on small data scenarios.

More information [here](#).

Registration [here](#).

SmallData Seminar Series: Research Presentations from Jana Naue & Martin Wolkewitz

June 25, 2025

In this seminar, our *SmallData* Associated Researchers will give a presentation of their work on small data and explore how it connects with other projects across the CRC. Each seminar will feature an open Q&A session. A talk title and short description will be available closer to the time.

Workshop: Approaching uncertainty from the foundations

July 04, 2025

"In this workshop we approach uncertainty in various tasks from the exploratory viewpoint – on the one side we want to gather problems and questions in the small data setting with inherent uncertainty, offering you the possibility to show your questions and research. And on the other side, we want to present already existing approaches and methodologies to help you solve your problems."

SmallData Seminar Series: Dealing with heterogeneity and low signal to noise ratio when extracting information from biomedical textual data

July 09, 2025

"A lack of structure and heterogeneity poses problems when little information is hidden in a large text, which is the case for literature on rare diseases, or when large heterogeneity is observed, such as in doctors' reports. In this workshop we want to develop approaches which address these challenges and quantify the uncertainty of the extracted information."

Workshop: Synthetic data generation and synthetic expert opinions

July 25, 2025

"[...] We will focus on data types such as temporal and longitudinal data, data with a hierarchical structure, and disease gene prioritization. In addition to discussing whether synthetic data underestimates uncertainty and how to use synthetic experts to assess the quality of generated data, we will demonstrate the models and tools currently in use to generate these data types."

SMART Master Lab 2.0

Aug 04 - Oct 2, 2025

Registrations: May 04 - 31, 2025. Link [here](#).

SmallData offers a unique opportunity to establish a shared language across all disciplines and to cross disciplinary boundaries through interdisciplinary training and collaboration. Here you will find everything you need to know to start your journey towards achieving your academic goals.

More information [here](#).

CRC 1597 Small Data Office

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