

# Sebastian Persson

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## Education

- 2020–2025 **PhD studies in Systems Biology**, *University of Gothenburg*.
- 2018–2020 **Master of Engineering Mathematics and Computational Science**, *Chalmers University of Technology*.
- 2015–2018 **Bachelor of Bioengineering**, *Chalmers University of Technology*.

## Published papers

Braam, S., Österberg, L., Tripoi, F., **Persson, S.**, Welkenhuysen, N., Coccetti, P., Cvijovic, M. (2024) Exploring Carbon Source related Localization and Phosphorylation in the Snf1/Mig1 Network using Population and Single Cell-based Approaches. To appear in *Microbial Cell*.

**Persson, S.**, Shashkova, S., Österberg, L., Cvijovic, M. (2022) Modelling of glucose repression signalling in yeast *Saccharomyces cerevisiae*. *FEMS Yeast Research*, 22(1).

**Persson, S.**, Welkenhuysen, N., Shashkova, S., Wiqvist, S., Reith, P., Schmidt, GW., Picchini, U., Cvijovic, M. (2022) Scalable and flexible inference framework for stochastic dynamic single-cell models. *PLOS Computational Biology* 18.5.

**Persson S.**, Welkenhuysen, N., Shashkova, S., Cvijovic, M. (2020). Fine-tuning of energy levels regulates *SUC2* via a SNF1-dependent feedback loop. *Frontiers in physiology*, 11:953.

## Papers under review

**Persson, S.**, Fröhlich, F., Grein, S., Loman, T., Ognissanti, D., Hasselgren, V., Hasenauer, J., Cvijovic, M. (2024) A Comprehensive Benchmark Evaluating the Julia Ecosystem for Dynamic Modelling in Biology. Under revision *Cell Systems*.

## Manuscript under preparation (late phase)

**Persson, S.**, Kukhtevich, I., Padovani, F., Schneider, R., Schmoller, K., Cvijovic, M. (2024) Disruption of F-actin cables in *BNI1* mutants results in diffused exocytosis and enlarged septin ring in budding yeast.

## Commissions of trust

- 2024 - 2026 **PEtab editorial board**, I was recently elected to the editorial board for the PEO standard <https://petab.readthedocs.io>.
- 2022, 2023 **Arranged MBM workshop**, Modelling in Biology and Medicine workshop with around 30-40 participants each year I organised twice with PhD students from University of Linköping.

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## Research visits

- April 2023 **Computational Life Sciences, Bonn**, I spent one month at the lab of Prof. Jan Hasenauer working with method development for dynamic models.
- Summer 2022 **The System Biology Institute, Tokyo**, I spent two months at the institute of Prof. Hiroaki Kitano-san studying RNA-seq data to deduce the effect of NMN on ageing.

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## Workshops and conferences

- July 2024 **JuliaConn, (Eindhoven Netherlands)**, PEtab.jl - Fast and efficient parameter estimation for ODE models (accepted for a talk).
- June 2024 **Society for Mathematical Biology conference, (Seoul South Korea)**, Positive feedback and exocytosis regulate the size of self-assembled structures in budding yeast (accepted for a talk).
- August 2023 **Yeast Meeting, (Gothenburg Sweden)**, Understanding septin ring formation in budding yeast by combining experiments and modelling (talk).
- April 2023 **Mathematics and Life Sciences conference, (Bonn Germany)**, PEtab.jl - Fast and efficient parameter estimation for ODE models (talk).
- October 2022 **International Conference on Systems Biology, (Berlin Germany)**, Efficient inference for single-cell dynamic modelling (talk and poster).
- Nov 2021 **Advanced Lecture Course on Computational Systems Biology, Aussois France**, Efficient inference for single-cell dynamic modelling (poster).
- Jun 2021 **International Society for Bayesian Analysis conference, (online)**, Efficient inference for single-cell dynamic modelling (talk).
- Jun 2021 **INtegrative COllaborative modeling in systems MEdicine conference, (online)**, Fine-tuning of energy levels regulates *SUC2* via a SNF1-dependent feedback (talk).

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## Travel Grants

- 2023, 2024 **Swefum foundation, Scholarship**, 36 000SEK ( $\approx$  2600£).
- 2022 **Donationsnämndens foundation, Scholarship**, 15 000SEK ( $\approx$  1100£).
- 2022 **Japan Society for the Promotion of Science summer internship, Scholarship**, 58 000SEK  $\approx$  4400£).
- 2020 - 2023 **Adlerbertska foundation, Scholarship**, Total 58 700SEK ( $\approx$  4400£).
- 2020 **Knut and Alice Wallenbergs foundation, Scholarship**, 4000SEK ( $\approx$  300£).
- 2020 **GS Magnusson foundation, Scholarship**, 13 000SEK ( $\approx$  1000£).

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## Teaching Experience

- 2022–present **Lecturer Scientific Visualisation, Chalmers University of Technology**, I designed the lectures, homework, and exam for course on 2d visualisation. In the course I was the lecturer and course responsible.
- 2020–present **Supervision of Theses, Chalmers University of Technology**, Have supervised 3 Master student and 5 groups of Bachelor students with four students each.

2020–present **Graduate Teaching Assistant**, *Chalmers University of Technology*, Three courses: High Performance Computing, Statistical Learning for Big Data, and Applied Mathematics (PDE course).

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## Software

2023–present **SBMLImporter.jl**, <https://github.com/sebapersson/SBMLImporter.jl>, Julia package for importing models in the SBML standard format.

2023–present **PEtab.jl**, <https://github.com/sebapersson/PEtab.jl>, Julia package for parameter estimating ODE-models.

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## Computer skills

**Julia**, Advanced level. Lead developer for two Julia packages.

**R**, Advanced level. Proficient in data handling and visualisation.

**Python**, Intermediate level. Proficient in data handling and solving PDE:s (FeniCS).

**C**, Intermediate level. Been teaching assistant in C based high-performance computing course.

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## Awards

2021 **John Erikson Medal**, *Chalmers University of Technology*, For completing my Bachelor's and Master's with top grades (only 5 of  $\approx$  1000 students achieve this).

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## Languages

Swedish Native tongue

English Fluent in reading, writing and speaking