

# Michael Seo

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## EDUCATION

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- **University of Bern** Bern, Switzerland  
*Ph.D. Biostatistics and Epidemiology* 2019 - 2022
  - **Stanford University** Stanford, CA  
*M.S. Statistics; GPA: 3.7/4.0* 2012 - 2014
  - **Duke University** Durham, NC  
*B.S. Statistics, Graduation with High Distinction; GPA: 3.7/4.0* 2007 - 2011

## EXPERIENCE

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- **Institute of Social and Preventive Medicine, University of Bern** Bern, Switzerland  
*Ph.D. Student in Biostatistics and Epidemiology* 2019 - 2022
    - **Variable selection and shrinkage:** Compared variable selection and shrinkage methods for estimating patient-specific treatment effects in individual patient data meta-analysis.
    - **Real-world effectiveness:** Developed models that combine individual patient data from randomized controlled trials and observational studies when aiming to predict outcomes for a set of treatments.
    - **Missing data:** Explored methods of addressing the systematically missing predictors problem, when the aim is to build a prediction model using data from multiple studies.
  - **LLX Solutions** Boston, MA  
*Biostatistician* 2018 - 2019
    - **Study design:** Drafted statistical analysis plans for Phase I trials which address study designs and methods on how to evaluate safety of the new drug in development.
    - **Data manipulation:** Transformed raw clinical data into datasets that meet FDA standards using PROC SQL.
  - **Center for Evidence Synthesis in Health, Brown University** Providence, RI  
*Ph.D. Student in Biostatistics* 2015 - 2018
    - **Network meta-analysis:** Developed an R package for Bayesian network meta-analysis which allows simultaneous comparison of multiple treatments.
    - **N-of-1 clinical trial:** Developed a Bayesian statistical tool to analyze single patient trials with crossover design and applied it to give individualized recommendations of carbohydrate diet for patients with inflammatory bowel disease.

## PUBLICATIONS

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- **Research Publication:** Seo M, Furukawa TA, Karyotaki E, Efthimiou O (Submitted). Developing prediction models when there are systematically missing predictors in individual patient data meta-analysis.
  - **Research Publication:** Seo M, Debray TPA, Ruffieux Y, Gsteiger S, Bujkiewicz S, Finckh A, Egger M, Efthimiou O (2022). Combining individual patient data from randomized and non-randomized studies to predict real-world effectiveness of interventions. *Statistical Methods in Medical Research*, To appear.
  - **Research Publication:** Seo M, White IR, Furukawa TA, Imai H, Valgimigli M, Egger M, Zwahlen M, Efthimiou O (2021). Comparing methods for estimating patient-specific treatment effects in individual patient data meta-analysis. *Statistics in Medicine*, 40, 1553-1573.
  - **Research Publication:** Seo M, Furukawa TA, Veroniki AA, Pillinger T, Tomlinson A, Salanti G, Cipriani A, Efthimiou O (2021). The Kilim plot: A tool for visualizing network meta-analysis results for multiple outcomes. *Research Synthesis Methods*, 12, 86-95.
  - **R Package:** Michael Seo (2022). bipd: Bayesian Individual Patient Data Meta-Analysis using 'JAGS'. R package version 0.1. <https://CRAN.R-project.org/package=bipd>.
  - **R Package:** Michael Seo and Christopher Schmid (2020). bnma: Bayesian Network Meta-Analysis using 'JAGS'. R package version 1.5.0. <https://CRAN.R-project.org/package=bnma>.
  - **R Package:** Robert Tibshirani, Michael Seo, Gil Chu, Balasubramanian Narasimhan, and Jun Li (2018). samr: Significance Analysis of Microarrays. R package version 3.0. <https://CRAN.R-project.org/package=samr>.

## SKILLS

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- **Programming:** R, Python, SAS, SQL, C++, Java, LaTeX
  - **Statistics:** Bayesian Methods, (Network) Meta-Analysis, Machine Learning