

# Karl Oskar Ekvall

Assistant Professor in Biostatistics

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## Employment

*Karolinska Institutet*

Assistant Professor 2021 - today

Postdoctoral Researcher 2020 - 2021

*TU Wien*

Postdoctoral Researcher 2019 - 2020

## Education

*University of Minnesota – Twin Cities*

Ph.D. Statistics 2019

M.S. Statistics 2017

*University of Gothenburg*

M.Sc. Finance 2012

B.Sc. Economics 2011

## Publications

### JOURNAL ARTICLES

Ekvall and Bottai, 2022, “Confidence regions near singular information and boundary points with applications to mixed models”. *Annals of Statistics* 50(3): 1806–1832.

Ekvall, 2022, “Targeted principal components regression”. *Journal of Multivariate Analysis* 190: 104995.

Ekvall and Molstad, 2022, “Mixed-type multivariate response regression with covariance estimation”. *Statistics in Medicine* 41(15): 2768–2785.

Ekvall and Jones, 2021, “Convergence analysis of a collapsed Gibbs sampler for Bayesian vector autoregressions.” *Electronic Journal of Statistics* 15(1): 691–721.

Ekvall and Jones, 2020, “Consistent maximum likelihood estimation using subsets with applications to multivariate mixed models.” *Annals of Statistics* 48(2): 932–952.

Ekvall and Jones, 2019, “Markov chain Monte Carlo.” *Wiley StatsRef*.

## Presentations

“Reliable inference on small scale and variance parameters in mixed models”. 2021  
MEB biostatistics seminar. Stockholm, Sweden.

“Confidence intervals for small scale parameters”. IMM research day. Stockholm, Sweden 2020

“Consistent maximum likelihood estimation in mixed models using subsets”. Joint Statistical Meetings. Philadelphia, PA, U.S.	2020
“Convergence analysis of a collapsed Gibbs sampler for Bayesian vector autoregressions”. CMStatistics. London, U.K.	2019
“Consistent maximum likelihood estimation in mixed models using subsets”. University of Vienna seminar. Vienna, Austria	2019
“Convergence analysis of a collapsed Gibbs sampler for Bayesian vector autoregressions”. TU Wien colloquium. Vienna, Austria	2019
“A multivariate linear model with separable correlation”. International Chinese Statistical Association, applied statistics symposium. Chicago, IL, U.S.	2017

## Teaching

### *Karolinska Institutet*

Undergraduate biostatistics in bachelor’s program in biomedicine, approx. 150h	2020 - 2021
Interprofessional learning day, 3h	2021

### *University of Minnesota – Twin Cities*

Introduction for new teaching assistants, approx. 12h	2018 - 2019
Theory of statistics for advanced undergraduate students, approx. 84h	2017 - 2018
Statistical computing for undergraduate students, approx 84h	2018
Introductory statistics for undergraduate students*, approx. 252h	2014 - 2016

\*as teaching assistant

## Collaborative and applied work

Gustin, Ekval, Barman, Jacobsson, Sandin, Sandberg, Wold, Vahter, and Kippler. 2022+. “Mediation by thyroid hormone in the relationships between maternal exposure to methylmercury and birth size”.

## Service

REVIEWER

National Science Foundation

Electronic Journal of Statistics

Journal of Computational and Graphical Statistics

Computational Statistics and Data Analysis

Annales de l’Institut Henri Poincaré

## Consulting

University of Minnesota, School of Statistics consulting clinic, approx. 70h	2017
U.S. Geological Survey, estimating monotonic trends in multivariate time series, 339 h	2016

## Software

`lmmstest` R package for implementing a modified score test for scale parameters in linear mixed models. <https://github.com/koekvall/lmmstest>

`mmrr` R package for estimating mixed-type multivariate response regressions. <https://github.com/koekvall/mmrr>

`tpcr` R package for estimating targeted principal components regressions. <https://github.com/koekvall/tpcr>

## Awards

### *Miscellaneous*

The American–Scandinavian foundation fellowship	2016
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Fulbright foreign student program	2014
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Tom Hedelius foundation scholarship	2014
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Sixten Gemzéus foundation scholarship	2014
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Malmsten award for best thesis in M.Sc. in Finance program	2014
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### *University of Minnesota – Twin Cities*

Graduate research partnership program fellowship	2017
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Lynn Y.S. Lin fellowhsip for statistical consulting	2016
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School of Statistics first year scholarship	2014
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## Student supervision

Jonatan Risberg (M.Sc. in applied mathematics). Six week summer research project.	2021
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