Statistical methods for mass spectrometry-based clinical proteomics

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List of Publications

Alexia Kakourou, Werner Vach and Bart Mertens (2014). Combination approaches improve predictive performance of diagnostic rules for mass-spectrometry proteomic data. *Journal of Computational Biology 21* (12), 898–914.

Mar Rodríguez Girondo*, **Alexia Kakourou***, Perttu Salo Markus Perola, Wilma E. Mesker, Rob A. E. M. Tollenaa, Jeanine Houwing-Duistermaat and Bart J. A. Mertens (2016). On the Combination of Omics Data for Prediction of Binary Outcomes. *Statistical Analysis of Proteomics, Metabolomics, and Lipidomics Data Using Mass Spectrometry*, (pp. 301–322). Springer.

Alexia Kakourou, Werner Vach, Simone Nicolardi, Yuri van der Burgt and Bart Mertens (2016). Accounting for isotopic clustering in Fourier transform mass spectrometry data analysis for clinical diagnostic studies. *Statistical Applications in Genetics and Molecular Biology 15* (5), 415–430.

Alexia Kakourou, Werner Vach and Bart Mertens. (2016) Adapting censored regression methods to adjust for the limit of detection in the calibration of diagnostic rules for clinical mass spectrometry proteomic data. *Statistical Methods in Medical Research*, epub ahead of print.

Alexia Kakourou and Bart Mertens (2017). Bayesian variable dimension logistic regression with paired proteomic measurements. Submitted for publication.

* These authors contributed equally to this work.

Curriculum Vitae

Alexia Kakourou was born in 1 October 1986 in Athens, Greece. She completed her secondary education at Arsakeion School, in Athens. She studied Mathematics at the National and Kapodistrian University of Athens where she graduated as B.Sc. in 2010. She obtained her M.Sc. degree in Statistics in 2012 from Athens University of Economics and Business.

In 2013 she got awarded with a Marie-Curie scholarship and became a fellow in MEDIASRES (Novel Statistical Methodology for Diagnostic/Prognostic and Therapeutic Studies and Systematic Reviews), a research network funded by the European Commission in the context of which she pursued her PhD studies. The theme of her research was the development of novel statistical methods for the calibration of diagnostic rules using clinical mass-spectrometry proteomic data. She conducted her research under the supervision of Dr. Bart Mertens at the Department of Medical Statistics and Bioinformatics, Leiden University Medical Centre, and the co-supervision of Prof. Werner Vach at the Institute of Medical Biometry and Statistics, Freiburg University, where she spent three months as a visiting researcher during her fellowship. The results of her research are published in various scientific journals and constitute the content of this thesis.

In 2016, she joined Dr. Wima Mesker's research team in the Surgery Department of Leiden University Medical Centre, where she works as a statistical consultant in clinical research projects for the early detection and monitoring of different types of cancer.