

# Student Supervision & Teaching

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## THESIS AND INTERN SUPERVISION:

Vazquez Rabunal, M. (2023). *Improved treatment effect estimation in subgroups displayed in forest plots based on Bayesian shrinkage priors*. Four month full-time internship with Roche Biostatistics, Basel. Co-supervised with Marcel Wolbers and Daniel Sabanés Bové.

Sawant, A. (2022). *Truncation by death for longitudinal continuous data: estimands and estimation methods*. Four month full-time internship with Roche Biostatistics, Basel.

Chen, X. (2019). *Sample size for prediction models*. Three month full-time internship with Roche Biostatistics, Basel. Co-supervised with Markus Elze and Gian Thanei.

Li, K. (2018). *Optimism-corrected treatment effect estimates in subgroups displayed in forest plots for time-to-event outcomes*. Master thesis to obtain Master in Biostatistics, University of Zurich. Initiated within three month full-time internship with Roche Biostatistics, Basel. Co-supervised with Marcel Wolbers. Academic supervisor: Prof. Torsten Hothorn, University of Zurich.

Meller, M. (2016). *Joint Modelling of Overall Survival and Progression Free Survival*. Master thesis to obtain Master in Biostatistics, University of Ulm. Initiated within four month full-time internship with Roche Biostatistics, Basel. Academic supervisor: Prof. Jan Beyersmann, University of Ulm. Winner of the Bernd Streitberg Award 2018 of the German Region of the International Biometric Society.

Hebeisen, M. (2014). *Estimation from Interval-censored Time-to-event Data: Method Comparison by Simulation based on GALLIUM Study for Follicular Lymphoma*. Master thesis to obtain Master in Biostatistics, University of Zurich. Prepared within seven month full-time internship with Roche Biostatistics, Basel. Academic supervisor: Prof. Torsten Hothorn, University of Zurich. download thesis

Hubeaux, S. (2013). *Analysis of time-to-event data with interval- or left-censored covariates*. Six month full-time internship with Roche Biostatistics, Basel.

Boutellier, P. (2013). *What does a PSA bounce look like? A numerical and graphical description of the prostate-specific antigen (PSA) bounce phenomenon in patients treated for prostate cancer with brachytherapy only*. Master thesis to obtain Master in Medicine, University of Zurich.

Loiero, D. (2012). *Inter- and Intrareader variability of Ratingen score in the Swiss Clinical Quality Management database*. Master thesis to obtain Master in Medicine, University of Zurich.

Scherer, A. (2011). *Determinants of TNFa inhibitor prescription in the Swiss Clinical Quality Management cohort of axial Spondylarthropathy patients*. Semester thesis in Master of Biostatistics program, University of Zurich.

Achermann, R. (2008). *Netrin-1 und DCC Expression bei Hirntumoren*. Semester thesis in Master of Biostatistics program, University of Zurich.

Lanz, K., Weber M. (2005). *Sehleistung unter körperlicher Anstrengung*. Swiss Technical School for Optometrics, Olten, Switzerland.

#### TEACHING LEADERSHIP

- I lead the official roll-out of the ICH E9 addendum within Roche, for statisticians and partner functions (such as clinical science, regulatory, biometrics, early research).
- A full-day introductory biostatistics course that I have given together with Marcel Wolbers has been selected as part of the official training program for all Roche affiliates globally.

#### SHORT COURSES FOR STATISTICALLY TRAINED AUDIENCES

- 09/2023 *Advanced group-sequential and adaptive confirmatory clinical trial designs, with R practicals using rpact.* (Pre-conference course at 5th Conference of the Central European Network, Basel, Switzerland, with Gernot Wassmer [rpact], Marc Vandemeulebroecke [Novartis], Marcel Wolbers [Roche].)
- 08/2023 *Causal Inference in Randomized Controlled Trials.* (Pre-conference course at Joint Statistical Meetings in Toronto, with Mouna Akacha, Robin Dunn, Tianmeng Lyu [all Novartis], Shanti Gomatam [FDA].)
- 08/2023 *Basic methods for group-sequential trials.* (Roche internal course for biostatisticians, Mississauga, Canada.)
- 03/2023 *Courses on basics of clinical trials, group-sequential designs, estimands, subgroup analysis.* (Within MSc program "Master of Pharmaceutical Sciences in Drug Development and Regulatory Affairs", University of Innsbruck, Austria.)
- 02/2023 *Some challenges with implementing estimands in real life.* (Recording for online training for *The Effective Statistician Academy*, Butzbach, Germany.)
- 02/2023 *Basic and advanced methods for group-sequential trials.* (Roche internal course for biostatisticians. With Marcel Wolbers.)
- 09/2022 *Advanced group-sequential and adaptive confirmatory clinical trial designs, with R practicals using rpact.* (Organized by the Basel Biometrics Section, Basel. With Gernot Wassmer [rpact], Marc Vandemeulebroecke [Novartis], Marcel Wolbers [Roche], full-day course)
- 02/2022 *"Confirmatory adaptive designs" for drug developers.* (Two half-days course for drug development functions at Roche, run 3 times with in total >650 participants)
- 12/2021 *Adaptive Design in Clinical Trials.* (Two half-days course in collaboration with DIA)
- 05/2021 *successR: comprehensive resource for training, methodology, and computational tools around success probabilities.* (Five 2.5-hour shortcourses for all Roche biostatisticians)
- 05/2021 *Stop the abuse: A plea for a more principled approach to the analysis of time-to-event endpoints with competing risks, with a focus on analysis of AEs.* (Two 2.5-hour shortcourses for all Roche biostatisticians, with Marcel Wolbers)
- 01/2021 *Answering Old Questions with New Tools: Application of the ICH E9 Addendum in Oncology.* (Two 2.5-hour shortcourses for all Roche biostatisticians, with Godwin Yung)
- 12/2020 *Answering Old Questions with New Tools: Application of the ICH E9 Addendum in Oncology.* (Half-day shortcourse at 76th Annual Deming Conference on Applied Statistics, with Evgeny Degtyarev)

06/2020 – 12/2020	<i>A Toolbox for Innovative Confirmatory Trial Designs. Four 2h modules on group-sequential, adaptive, and multiarm multistage designs.</i> (Virtual course for all Roche biostatisticians, with Marcel Wolbers)
10/2019	<i>Advanced methods for group-sequential and adaptive trials.</i> (Summer school organized on behalf of the German Region of the IBS, Lambrecht, Germany. With Marc Vandemeulebroecke, Gernot Wassmer, and Marcel Wolbers, 3-day course)
07/2019	<i>Advanced methods for group-sequential trials.</i> (ISCB40, Leuven, Belgium. With Marcel Wolbers. Half-day pre-conference course)
03/2019	<i>Group-sequential clinical trial designs, advanced topics.</i> (Roche, Basel. With Marcel Wolbers. Half-day course)
03/2018	<i>Group-sequential and adaptive clinical trial designs, with R practicals.</i> (Organized by the Basel Biometrics Section, Basel. With Daniel Sabanés Bové, Marc Vandemeulebroecke, Marcel Wolbers, full-day course)
06/2013	<i>Analysis of Longitudinal data.</i> (Roche, Basel. 8-hour course)
01/2011	<i>Analysis of Longitudinal data.</i> (Institut für Medical Biometry, Epidemiology, and Informatics, University of Mainz. 3-day course, with Leo Held)
06/2010	<i>Analysis of Longitudinal data, as part of Master in Medical Biometry.</i> (Department of Medical Biometry, University of Heidelberg, Heidelberg. 3-day course, with Leo Held)

## GRADUATE LEVEL TEACHING FOR STATISTICIANS

Preparing and teaching lecture to Master students, preparing and discussing exercises (blackboard and with R), preparing and grading exams.

12/2019	<i>Introduction to Applied Mathematics and Informatics in Drug Discovery (AMIDD), one session: Interim look into pivotal clinical trials - why it matters and how to do it</i> (Graduate level, University of Basel)
11/2013	<i>Statistical Methods for Clinical Research, one session on group-sequential designs in clinical research</i> (Graduate level, University of Zurich)
11/2012 – 12/2012	<i>Statistical Methods for Clinical Research, two sessions: group-sequential designs in clinical research and measures of agreement</i> (Graduate level, University of Zurich)
09/2011 – 12/2011	<i>Statistical Methods for Clinical Research</i> (Graduate level, University of Zurich)
02/2010 – 06/2010	<i>Longitudinal data analysis</i> (joint with Prof. L. Held, graduate level, University of Zurich)
09/2009 – 12/2009	<i>Biostatistical methods, Part II: Statistical methods for clinical trials</i> (graduate level, University of Zurich)
02/2009 – 05/2009	<i>Likelihood inference</i> (joint with Prof. L. Held, graduate level, University of Zurich)
10/2005 – 02/2006	<i>Introduction to Statistics</i> (undergraduate level, University of Bern)

## SHORT COURSES FOR NON-STATISTICAL AUDIENCES

05/2023 – 10/2022	<i>Multiplicity</i> (2h course for Pharmacometrics department, Roche, Basel)
09/2022 – 10/2022	<i>Introduction to statistics, survival analysis, interpretation of subgroups in clinical trials, interim analyses</i> (2 days for swiss health quality association, Zug)
09/2022	<i>The Concept of Estimands / Group-Sequential Designs and Interim Analyses in Drug Development / Survival Analysis</i> (European Center of Pharmaceutical Medicine Course, Basel)
06/2022	<i>Basic Statistical Concepts</i> (European Center of Pharmaceutical Medicine Course, Basel)
06/2022	<i>Estimands in Multiple Sclerosis</i> (1-hour course for Roche's MS clinical science community, virtual event)
04/2022	<i>Platform trials in drug development</i> (1-hour course for Roche's Nordic commercial organization, virtual event)
11/2021	<i>The final word on interim analyses</i> (2-hour courses for all product development colleagues, Roche, Basel, virtual event)
10/2021	<i>How to survive survival analysis?</i> (2-hour courses for all product development colleagues, Roche, Basel, virtual event)
05/2021	<i>Introduction to statistics.</i> (2-hour courses for all product development colleagues, Roche, Basel, virtual event)
05/2021	<i>2-hour training for clinical reviewers: Implications of the ICH E9 estimand addendum on how we develop, run, and analyse clinical trials</i> (Agência Nacional de Vigilância Sanitária (ANVISA, virtual event))
05/2021	<i>Introduction to statistics.</i> (2-hour courses for all product development colleagues, Roche, Basel, virtual event)
01/2021	<i>Introduction to statistics.</i> (Two 2-hour courses for all Medical Science Liaison colleagues within Roche Medical Affairs, Roche, Basel, virtual event)
12/2020	<i>Survival analysis in rheumatology.</i> (1-hour course for medical doctors, organized by Roche Switzerland at St. Gallen Hospital, virtual event)
11/2020	<i>Introduction to statistics.</i> (Two 2-hour courses for all product development colleagues, Roche, Basel, virtual event)
09/2020	<i>Introduction to survival and interim analyses.</i> (Half-day course for Regulatory Documentation Department, Roche, Basel & Welwyn, virtual event)
08/2020	<i>Introduction to statistics.</i> (Half-day course for Regulatory Documentation Department, Roche, Basel & Welwyn, virtual event)
01/2020	<i>Introduction to survival and interim analyses.</i> (Half-day course for Regulatory Documentation Department, Roche, Basel)
01/2020	<i>How to interpret subgroup analyses in clinical trials?</i> (2-hour course for medical doctors, organized by Roche Switzerland at University Hospital Zurich.)
11/2019 – 01/2020	<i>Design of Experiments &amp; Effective Statistical Practices.</i> (Three two-hour courses for early development organization, Roche, Basel)
10/2019	<i>Introduction to statistics.</i> (Half-day course for Regulatory Documentation Department, Roche, Basel)
01/2019	<i>Introduction to statistics in clinical trials.</i> (2-hour course for Medical Science Liaison group, Roche Swiss Affiliate, Reinach)
01/2019	<i>Introduction to survival analysis and clinical trial designs, Part II.</i> (2-hour course for medical doctors, organized by Roche Switzerland at Baden Hospital.)

01/2019	<i>Estimands and real-world data in drug development.</i> (Half-day course for early development Neuroscience, Ophthalmology and Rare Disease scientists, Roche, Basel)
11/2018	<i>Introduction to survival analysis and clinical trial designs.</i> (Half-day course for early development Neuroscience, Ophthalmology and Rare Disease scientists, Roche, Basel)
03/2018	<i>Introduction to survival analysis and clinical trial designs.</i> (3-hour course for medical doctors, organized by Roche Switzerland at Baden Hospital.)
02/2018	<i>Introduction to survival analysis and clinical trial designs.</i> (Half-day course for Regulatory Documentation Department and Global Project Managers, Roche, Basel)
11/2017	<i>Introduction to statistics.</i> (Half-day course for Regulatory Documentation Department and Global Project Managers, Roche, Basel)
07/2017	<i>Sample size planning and survival analysis in clinical trials.</i> (Full-day course for Medical Affairs and Clinical Science Departments, Roche, Basel, jointly with Marcel Wolbers)
04/2017	<i>Introduction to statistics.</i> (Half-day course for Competitive Intelligence Group, Roche, Basel)
03/2017	<i>Introduction to statistics.</i> (2-hour course for Finance Department, Roche, Basel)
11/2016	<i>Introduction to statistics.</i> (Half-day course for Regulatory Documentation Department, Roche, Mississauga)
10/2016	<i>Introduction to statistics.</i> (Half-day course for Regulatory Documentation Department, Roche, Basel)
08/2016	<i>Introduction to statistics.</i> (3-hour course for Media Group Roche, Basel)
03/2016 – 11/2016	<i>Five workshops on specific biostatistical topics in clinical trials.</i> (3-hour courses for medical doctors, organized by Roche Switzerland at hospitals in Sion, St. Gallen, Frauenfeld, Aarau, Zürich.)
05/2016	<i>Introduction to statistics.</i> (Half-day course for Regulatory Documentation Department, Genentech, South San Francisco and Roche, Basel)
02/2016	<i>Introduction to statistics in clinical trials.</i> (Half-day course for Medical Science Liaison group, Roche Swiss Affiliate, Reinach)
01/2016 – 02/2016	<i>Introduction to statistics. Certificate of Advanced Studies (CAS) course, as part of the Master of Advanced Studies in Managed Health Care.</i> (2-day course, ZHAW Zurich University of Applied Sciences, School of Management and Law, Winterthur Institute for Health Economics, Winterthur)
11/2015	<i>Introduction to statistics.</i> (1-day course for Statistical Programming and Analysis Department, Roche Basel)
10/2015	<i>Introduction to statistics.</i> (Two 1-day courses for Regulatory Documentation Department, Roche Basel & Welwyn)
05/2015	<i>Introduction to statistics.</i> (1-day course for Product Development Department, Roche Basel)
02/2015	<i>Introduction to statistics. Certificate of Advanced Studies (CAS) course, as part of the Master of Advanced Studies in Managed Health Care.</i> (2-day course, ZHAW Zurich University of Applied Sciences, School of Management and Law, Winterthur Institute for Health Economics, Winterthur)
06/2014 – 11/2014	<i>Four workshops on specific biostatistical topics in clinical trials.</i> (3-hour courses for medical doctors, organized by Roche Switzerland at hospitals in Zürich, Lausanne, Basel, Baden.)

- 01/2014 – 03/2014 *Introduction to statistics. Certificate of Advanced Studies (CAS) course, as part of the Master of Advanced Studies in Managed Health Care.*  
(3-day course, ZHAW Zurich University of Applied Sciences, School of Management and Law, Winterthur Institute for Health Economics, Winterthur)
- 11/2013 *Workshop on survival analysis in oncology.* (3-hour course for Roche Oncology sales force, Reinach)
- 06/2013 – 04/2014 *Seven workshops on survival analysis in oncology.* (3-hour courses for medical doctors organized jointly by Roche Switzerland and Novartis Switzerland at hospitals in Basel, Zürich, Bern, Luzern, Lausanne, Lugano, Olten.)
- 01/2012 – 03/2012 *Introduction to statistics. Certificate of Advanced Studies (CAS) course, as part of the Master of Advanced Studies in Managed Health Care.*  
(3-day course, ZHAW Zurich University of Applied Sciences, School of Management and Law, Winterthur Institute for Health Economics, Winterthur)
- 09/2011 *Statistics in oncology.*  
(1-day course, cancer biology PhD program, University of Zurich)
- 04/2011 *How to write a scientific paper – statistical aspects.*  
(4-hour course as part of medical curriculum, University Hospital, Zurich)
- 02/2011 *Introduction to biostatistics.*  
(3-hour course, continuing education for radiologists, University Hospital, Bern)
- 03/2010 *Samples, confidence intervals, statistical tests, and p-values.*  
(1-hour talk, Medical radiology department, University Hospital Zurich, Zurich)
- 01/2010 – 05/2010 *Introduction to statistics. Certificate of Advanced Studies (CAS) course, as part of the Master of Advanced Studies in Managed Health Care.*  
(3-day course, ZHAW Zurich University of Applied Sciences, School of Management and Law, Winterthur Institute for Health Economics, Winterthur)
- 09/2010 *Statistics in oncology.*  
(1-day course, cancer biology PhD program, University of Zurich)
- 09/2009 *Statistics in oncology.*  
(1-day course, cancer biology PhD program, University of Zurich)
- 09/2009 *Assessment of agreement between continuous variables.* (1-hour talk, Waid Hospital, Zurich)
- 02/2009 *Introduction to biostatistics.* (1-hour talk, Triemli Hospital, Zurich)
- 01/2009 *Introduction to biostatistics.*  
(1-day course, continuing studies for researchers, University of Zurich)
- 09/2008 *Statistics in oncology.*  
(1-day course, cancer biology PhD program, University of Zurich)
- 02/2008 *Linear models.*  
(1-day course, continuing studies for researchers, University of Zurich)
- 04/2005 – 05/2005 *Introduction to R.* (2-day course, continuing studies, University of Bern)

#### FURTHER SHORT COURSES

- 09/2011 *Optimization.*  
(2-hour course, Energy trading academy, BKW FMB Energie AG)