

# Curriculum Vitae

Kaspar Rufibach, PhD  
Biostatistician

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## CONTACT:

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## PERSONAL DATA:

Date of birth: April 23, 1977  
Citizenship: Swiss

## PROFESSIONAL EXPERIENCE:

02/2012 – Founder and owner, Rufibach rePROstat - consulting and education in biostatistics, Bern, Switzerland.  
11/2007 – 12/2011 Lecturer in Biostatistics, Division of Biostatistics, Institute of Social- and Preventive Medicine (ISPMZ), University of Zurich, Switzerland.  
09/2006 – 08/2007 Postdoctoral scholar, Department of Statistics, Stanford University, Palo Alto, United States (Swiss National Science Foundation fellowship).  
03/2002 – 04/2006 Biostatistician (40%–50%), Swiss Group for Clinical Cancer Research (SAKK), Bern, Switzerland.  
11/2000 – 08/2006 Research and Teaching Assistant (25–50%), Department of Mathematical Statistics and Actuarial Science (IMSV), University of Bern, Switzerland.

## INTERNSHIPS AND TEMPORARY EMPLOYMENTS:

09/2005 – 04/2006 Lecturer (20%), Institute for Sport Science (ISSW), University of Bern, Switzerland.  
11/2001 – 02/2002 Statistical consultant, UBS Switzerland, Bern, Switzerland.  
07/2000 – 10/2000 Internship, UBS Switzerland, Bern, Switzerland.  
07/1999 – 09/1999 Internship, UBS Switzerland, Bern, Switzerland.

## EDUCATION:

- 09/2006 – 08/2007 Postdoctoral scholar, Department of Statistics, Stanford University, Palo Alto, United States.  
Project: *Quantifying heterogeneity in flow cytometry measurements and applications of log-concave density estimation.*  
Collaborator: Prof. Günther Walther.
- 04/2002 – 05/2006 PhD in Mathematics (magna cum laude), Department of Mathematical Statistics and Actuarial Science, University of Bern, Switzerland and Institute of Mathematical Statistics, Georg-August-University, Göttingen, Germany. Thesis: *Log-concave density estimation and bump hunting for i.i.d. observations.*  
Advisors: Prof. Lutz Dümbgen (Bern) and Prof. Axel Munk (Göttingen).
- 10/1997 – 11/2001 Diploma in Statistics (cum laude), Minors in Mathematics and Economics, Department of Mathematical Statistics and Actuarial Science, University of Bern, Switzerland.  
Thesis: *Phase reconstructions for uniform distributions in  $\mathbb{R}^d$  (in German).*  
Advisor: Prof. Henri Carnal.

## AWARDS:

- 01/08/11 Certificate of Distinction. Awarded by the journal “Skeletal Radiology” for that the quantity, timeliness, and quality of referee reports during 2010 was above and beyond the call of duty.
- 10/08/10 Certificate of Distinction. Awarded by the journal “Skeletal Radiology” to top 15% of referees for quality of referee reports during 2009.
- 04/12/06 Moser-Prize of the Institute of Mathematical Statistics and Actuarial Science, University of Bern. Awarded for the best Diploma or PhD thesis of the year 2006. SFr 1,000.
- 18/07/05 – 23/07/05 Participation in European young statisticians training camp, Oslo (50 participants selected out of 120). All expenses covered.

## GRANTS:

- 06/06/10 NSF support to travel to the conference “From Probability to Statistics and Back: High-Dimensional Models and Processes” in honor of Jon Wellner’s 65<sup>th</sup> birthday. US\$ 700.
- 05/11/06 – 11/11/06 Swiss National Science Foundation grant to travel to Oberwolfach Workshop. SFr 880.
- 01/09/06 – 31/08/07 Swiss National Science Foundation research fellowship for prospective researcher. SFr 54,690.

## CONSULTING:

### University external:

02/2012 –	Founder and owner of Rufibach rePROstat. Consulting and education in biostatistics.
11/2009 – 04/2010	Swiss Federal Office of Public Health, Zurich, Switzerland. Planning of a national nutrition survey.
05/2009 – 08/2009	Rules Based Medicine Inc., Austin, Texas. Perform contract research. Field of statistical application: High-dimensional statistics, regularization in GLMs.
12/2008 – 01/2009	Satoris Inc., Redwood City, California. Perform contract research. Field of statistical application: High-dimensional statistics, regularization.
2002	UBS AG, Bern, Switzerland. Analyzed the impact of new customer strategies on the revenue via multivariate statistical methods.
1999, 2000, 2001	UBS AG, business controlling unit, Bern, Switzerland. Evaluated performance differences of single branches via multivariate statistical methods.

### University internal:

11/2007 – 12/2011	Consulting for researchers from various medical disciplines at the University of Zurich (2007: 10 cases, 2008: 52 cases, 2009: 67 cases, 2010: 45 cases, 2011: 62 cases).
11/2000 – 7/2006	Consulting for researchers from economy, biology, educational research, chemistry, and several medical disciplines at the University of Bern.

## COLLABORATIVE RESEARCH:

Extensive experience in collaborations with medical and biological scientists, proven by numerous publications in medical and biological journals.

## TEACHING

### Full lectures

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

09/2011 – 12/2011	Statistical Methods for Clinical Research (Graduate level, University of Zurich)
02/2010 – 06/2010	Longitudinal data analysis (joint with Prof. L. Held, graduate level, University of Zurich)
09/2009 – 12/2009	Biostatistical methods, Part II: Statistical methods for clinical trials (graduate level, University of Zurich)
02/2009 – 05/2009	Likelihood inference (joint with Prof. L. Held, graduate level, University of Zurich)
10/2005 – 02/2006	Introduction to Statistics (undergraduate level, University of Bern)

### Tutorials

Preparing and discussing exercises (blackboard and with R), grading exams. Tutorials for the following lectures: introduction to statistics (Bern), statistics for medical doctors (Zurich, 9x), bayesian statistics (Zurich), likelihood inference (Zurich, 2x), optimization (Bern), statistical learning (Bern), linear regression (Bern, 2x).

### Short courses for statistically trained audiences

- 01/2011            Analysis of Longitudinal data. 3 day course, given jointly with Prof. Leo Held. (Institut for Medical Biometry, Epidemiology, and Informatics, University of Mainz)
- 06/2010            Analysis of Longitudinal data, as part of Master in Medical Biometry. 3 day course, given jointly with Prof. Leo Held. (Department of Medical Biometry, University of Heidelberg, Heidelberg)

### Short courses for medical audiences

- 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)

## RESEARCH TALKS:

### Invited:

- 12/05/2010 Research Section Meeting Royal Statistical Society, London. *Proposal of the vote of thanks in discussion of Cule, M., Samworth, R., and Stewart, M.: Maximum likelihood estimation of a multidimensional logconcave density.*
- 26/01/2010 Workshop “Statistical Issues in Prediction: What can be Learned for Individualized Predictive Medicine?”, Oberwolfach, Germany. *Score regression: a new approach to assess calibration of continuous probabilistic predictions.*
- 12/01/2010 Seminar, Basel Biometric Section of the IBS, Roche, Basel. *Ordered monotone regression.*
- 11/02/2009 Department of Neurology and Neurological Sciences, Stanford University School of Medicine, Palo Alto, CA, USA. *Regularized regression models in R.*
- 17/01/2008 Seminar, Basel Biometric Section of the IBS, Roche, Basel. *A general criterion for multiscale inference.*
- 18/12/2007 Seminar, Institute for Stochastics, University of Karlsruhe, Germany. *Nonparametric Estimation of Log-Concave Densities.*
- 28/09/2007 Seminar, Institute for mathematical statistics and actuarial science, University of Bern, Switzerland. *A general criterion for multiscale inference.*
- 13/09/2007 Basel Institute for Clinical Epidemiology, University of Basel, Switzerland. *Predicting Alzheimer from proteomic blood markers.*
- 31/07/2007 Seminar, Statistics Department, Stanford University, United States. *Max-domain of attraction for log-concave densities and smooth tail index estimation.*
- 11/11/2006 Workshop “Qualitative Assumptions and Regularization in High-Dimensional Statistics”, Oberwolfach, Germany. *The log-concave density estimator as a smoother.*
- 23/08/2005 Seminar, Statistics Department, Stanford University, United States. *Log-concave density estimation.*

### Contributed conference talks:

- 13/09/2011 Conference of the Central European Network of the International Biometric Society (CEN 2011), Zurich, Switzerland. *A smooth ROC curve estimator based on log-concave density estimates.*
- 21/06/2011 Methods in Meta Analysis Meeting, London, UK. *Selection models with monotone weight functions in meta analysis.*
- 03/08/2010 Joint Statistical Meetings, Vancouver, Canada. *Ordered Monotone Regression.*
- 02/03/2010 German Open Conference on Probability and Stochastics, Leipzig, Germany. *Ordered Monotone Regression.*
- 12/03/2008 Conference of the Central European Network of the International Biometric Society (Lifestat 2008), Munich, Germany. *On a new approach to regression models with ordinal explanatory variables.*
- 11/09/2007 ROeS Seminar 2007, Bern, Switzerland. *On a new approach to regression with ordered explanatory variables.*
- 15/03/2006 German Open Conference on Probability and Stochastics, Frankfurt, Germany. *Smoothed semi-parametric tail index estimation and max-domain of attraction for log-concave densities.*
- 27/07/2005 European Meetings of Statisticians, Oslo, Norway. *Log-concave density estimation.*
- 19/07/2005 European Young Statisticians Training Camp, Oslo, Norway. *Log-concave density estimation and bump hunting.*

- 26/03/2004 German Open Conference on Probability and Stochastics, Karlsruhe, Germany. *Log-concave density estimation and uniform rate of convergence.*
- 06/08/2003 Joint Statistical Meetings, San Francisco, United States. *Computing maximum likelihood estimators of log-concave densities.*

#### University internal talks:

- 27/01/2011 Categorization of continuous covariates (Zurich).
- 03/12/2009  $p$ -values in high-dimensional regression (Zurich).
- 04/06/2009 Estimation and computation of the median for right-censored data (Zurich).
- 12/01/2009 Consulting and reproducible research (Zurich).
- 06/11/2008 Exact logistic regression (Zurich).
- 06/03/2008  $L_1$  and Least angle regression (Zurich).
- 06/12/2007 On a new approach to regression with ordinary explanatory variables (Zurich).
- 25/01/2006 Semi-parametric tail index estimation and max-domain of attraction for log-concave densities (Bern).
- 04/05/2005 Local asymptotic normality and Le Cam's third lemma (Bern).
- 11/01/2005 Penalized estimators (Bern).
- 01/12/2004 Asymptotics for Lasso-Type Estimators (Bern).
- 28/04/2004 Estimation of a Proportion in Group Sequential Trials (Bern).
- 26/11/2003 Density Estimation under Qualitative Assumptions (Bern).
- 07/01/2003 Convex Programming (Bern).

#### CONTINUING EDUCATION AND WORKSHOPS:

- 12/11/10 Supervising students - dealing with roles and relationships. Institute for University Didactic, ETH, Zurich (1 day course).
- 08/10/09 – 09/10/09 Didactical training for university level teaching. Institute for University Didactic, ETH, Zurich (2 day course).
- 20/03/09 Fitting and judging models for high-dimensional biomedical data (1 day course). Organized by the Institute of Medical Biometry and Medical Informatics, University of Freiburg i.B.
- 30/10/08 – 31/10/08 Adaptive designs for complex studies in oncology (2 day course). Organized by Tim Friede and Ulrich Mansmann.
- 09/09/07 Introduction to adaptive designs. Organized by Frank Bretz, Werner Brannath and Gernot Wassmer (1 day course).
- 05/11/02 – 11/11/02 Analyzing mixed-effect models. Instructor: Jose Pinheiro (1 week course).

#### REFEREEING:

##### Reviewer for statistical journals

Annals of Applied Statistics (2011: 1), Annals of Statistics (2006: 1), Biometrical Journal (2008: 1, 2010: 2), Biometrika (2010: 1), Computational Statistics and Data Analysis (2010: 1), Electronic Journal of Statistics (2010: 1, 2012: 1), Journal of Nonparametric Statistics (2008: 1), Journal of Statistical Software (2011: 1), Scandinavian Journal of Statistics (2005: 1), Statistica Neerlandica (2009: 1), Statistica Sinica (2011: 1). Statistics in Medicine (2011: 1).

**Reviewer for Mathematical Reviews**

Since 06/2009. 2009: 1 review. 2010: 1 review.

**External statistical expert for Skeletal Radiology (2008 - 2011)**

Since 05/2008. 2008: 7 expertises. 2009: 10 expertises. 2010: 7 expertises. 2011: 2 expertises.

**Reviewer for medical journals**

Contemporary Clinical Trials (2008: 1), Critical Care Medicine (2008: 1).

**Reviewer for funding agencies**

Netherlands Organisation for Scientific Research (2008: 1).

**PROFESSIONAL SERVICE:**

Member of organizing committee Swiss Statistics Meeting 2009, Geneva.

**SKILLS:**

Trained in statistics, mathematics, computing, cryptology and economics.

- languages: german (native), english (fluent), french (intermediate)
- software: R, SAS, SPSS
- programming: R (incl. building own packages), L<sup>A</sup>T<sub>E</sub>X (incl. Sweave), SAS, MatLab
- computing: WINDOWS

**PERSONAL INTERESTS:**

- mountain biking, running, floorball, hiking, backcountry skiing
- badminton: played more than 10 years on national elite level, member of the board Badminton Club Thun-Uetendorf-Steffisburg 2003 – 2006
- reading newspapers, politics

**REFERENCES:**

Available upon request.