

# Curriculum Vitae

March 6, 2015

## Samuel Müller

### Associate Professor and Director of Postgraduate Studies

School of Mathematics and Statistics F07  
University of Sydney, NSW 2006, AUSTRALIA

(w) +61 2 9036 7878, (f) +61 2 9351 4534, (e) samuel.mueller@sydney.edu.au

### Editorial appointments

2015, *Guest Editor*, Special Issue on ‘Robust Analysis of Complex Data’ for Computational Statistics and Data Analysis (CSDA)

2013 – ongoing, *Associate Editor*, Australian and New Zealand Journal of Statistics (ANZJS)

### Research interests

*Statistical model building* – focused but not restricted to robust selection methods for linear, generalized linear and partially linear regression models; mixed-models; using resampling schemes.

*Applied statistics* – such as on modeling omics, ecological, neurological or medical data.

*Robust methods* – estimation of spread, building of statistical models, fitting of shape-constraint curves.

*Extreme value theory* – particularly on tail-index and support estimation.

### External funding (total of \$1,219,943)

Grants:

- \$351,000, 2014-2016, *ARC DP140101259 Prediction, inference and their application to modelling correlated data*, with AH Welsh.
- \$38,892, 2014, *Faculties of Sciences Research Equipment and Infrastructure Scheme – Research server*, with J Yang U Keich J Ormerod N Armstrong E Patrick.
- \$390,000, 2013-2015, *ARC DP130100488 Vertically integrated statistical modelling in multi-layered omics studies*, with J Yang and G Mann.
- \$350,000, 2011-2013, *ARC DP110101998 Building models for complex data*, with AH Welsh.

Fellowships and partly funded research visits:

- \$1,200, 08/2015, *Visiting Professor* in the Department of Statistics, Stanford, USA.
- \$1,800, 07/2015, *Visiting Professor* in the Department of Statistics, UC Davis, USA.

- \$1,500, 11/2014, *Visiting Research Fellowship* in the Department of Epidemiology and Biostatistics, Texas A&M University, College Station, USA.
- \$5,000, 11/2011, *Visiting Research Fellowship* in the Department of Statistics, Texas A&M University, College Station, USA.
- \$8,500, 01/2009, *Visiting Research Fellowship* in the Department of Statistics, Texas A&M University, College Station, USA.
- \$650, 10/2007, *Small Travel Grant* from the European Commission (EC) for the Oberwolfach (Germany) conference ID 0743.
- \$4,400, 02/2006, *Visiting Research Fellowship* in the CMA, MSI, ANU.
- \$2,000, 04/2005, *Visiting Research Fellowship* in the CMA, MSI, ANU.
- \$65,000, 11/2003-10/2004, *Swiss National Foundation Research Fellowship*.

## Employment

Since 2015, *Associate Professor*, School of Mathematics and Statistics, University of Sydney (USyd), Australia.

2010-14, *Senior Lecturer*, School of Mathematics and Statistics, USyd.

2008-09, *Lecturer*, School of Mathematics and Statistics, USyd.

2006-07, *Lecturer*, School of Mathematics and Statistics, University of Western Australia (UWA), Australia.

2004-06, *Lecturer* (Oberassistent), Department of Mathematical Statistics and Actuarial Science, University of Bern (UNIBE), Switzerland.

2003-04, *Postdoctoral Researcher*, Mathematical Sciences Institute (MSI), The Australian National University (ANU), Canberra, Australia.

2002-03, *Research and Teaching Assistant*, Department of Mathematical Statistics and Actuarial Science, UNIBE.

1997-2002, *Assistant* (part time), Department of Mathematical Statistics and Actuarial Science, University of Bern, Switzerland.

2002, *Lecturer in Statistics* (three courses), Swiss College of Agriculture, Zollikofen, Switzerland.

1998-2000, *Biostatistician* (part time), Swiss Institute for Applied Cancer Research, Bern, Switzerland.

## Education

*PhD in Mathematics*, 11/2002, Department of Mathematical Statistics and Actuarial Science, UNIBE. Advisor: Prof. Jürg Hüsler

*Diploma (MSc) in Statistics*, 06/1998, Minors in Mathematics and Economics, respectively. Department of Mathematical Statistics and Actuarial Science, UNIBE. Advisor: Prof. Jürg Hüsler

## **Selected academic visits**

Since 2012, *Visiting Fellow* at MSI, ANU, Canberra, Australia, ongoing until 12/2016

2015, Department of Statistics, *Stanford*, USA, 1 week

2015, Department of Statistics, *UC Davis*, USA, 1 week

2014, Department of Epidemiology and Biostatistics, *Texas A&M University*, College Station, USA, 1 week

2011, Department of Statistics, *Texas A&M University*, College Station, USA, 5 weeks

2011, MSI, ANU, Canberra, Australia, 5 weeks

2011, IMSV, *UNIBE*, Switzerland, 4 weeks

2009, Department of Statistics, *Texas A&M University*, College Station, USA, 3 weeks

2007, IMSV, *UNIBE*, Switzerland, 1 week

2006, MSI, ANU, Canberra, Australia, 3 weeks

2005, MSI, ANU, Canberra, Australia, 3 weeks

2005, MODAL'X, *Université de Paris X*, Nanterre, France, 1 week

## **Teaching at USyd**

MATH1005 Statistics, 1st year service course (2008, 2012)

MATH1905 Statistics Advanced, 1st year service course (2009-10)

STAT3012 Applied Linear Models, 3rd year statistics course (2008-15)

MSH6 Robust Statistics, 4th year honours half-course (2009-2014)

MSH3 Model Selection, 4th year honours half-course (2014-15)

Postgraduate Seminar (2013-14)

## **Teaching at AMSI Summer School**

High Dimensional Data: Models, Model Selection, Variable Ranking and Sparsity (6-31 January 2014, Canberra, with A/Prof. Inge Koch)

## Teaching at other universities

Calculus, Statistics and Probability, 1st year service course at UWA (2006-07)

Elementary Statistics, 1st year service course at the Swiss College of Agriculture (2002)

Statistical Analysis of Experiments, 2nd year statistics course at UWA (2007)

Mathematical Statistics I & II, 3rd year two-semester statistics course at UNIBE (2006, 2005)

Computer Intensive Methods in Statistics, 4th year honours course at UWA (2007)

Exact Tests and the Bootstrap, postgraduate half-course at UNIBE (2003, 2005)

Introduction to Probability and Statistics, postgraduate course at UNIBE (2002, 2004)

## Research associates

2015-16, Francis Hui (Postdoc; jointly with AH Welsh, ANU).

2014, Chong You (Research associate).

2014, Diane Loo (Research associate; jointly with YH Yang, USyd).

2014-15, Garth Tarr (Postdoc; jointly with AH Welsh, ANU).

2013-15, Ellis Patrick (Postdoc; jointly with YH Yang, USyd).

2011-12, Tanya Garcia (Postdoc; jointly with RJ Carroll, Texas A&M).

2011-12, Janice Scealy (Postdoc; jointly with AH Welsh, ANU).

## Postgraduate and honours supervision

**PhD theses:** 4 ongoing, 4 descendants.

**Honours theses:** 0 ongoing, 9 descendants.

03/2013 – present, Secondary supervision of Thanakorn Nitithumbundit, *TBD*, PhD Thesis, USyd.

03/2013 – present, Secondary supervision of Thomas Porter, *Mixture Models*, PhD Thesis, USyd.

08/2011 – present, Secondary supervision of Kaushala Samudini Jayawardan, *Model Building for Clinical and Expression Data*, PhD Thesis, USyd.

07/2009 – present, Primary supervision of Kevin Murray, *Improved Monotone Polynomial Fitting with Applications and Variable Selection*, PhD Thesis, USyd.

2015, Chong You, *Model Selection and Estimating Degrees of Freedom in Bayesian Linear and Linear Mixed Effect Models*, PhD Thesis, USyd (joint supervision with JT Ormerod)

2014, Diane Loo, *Lasso Tuning through the Weighted Bootstrap*, Honours Thesis, USyd.

- 2014, Garth Tarr, *Quantile Based Estimation of Scale and Dependence*, PhD Thesis, USyd (joint supervision with NC Weber).
- 2012, Anna Campaign, *Challenges Associated with Clinical Studies and the Integration of Gene Expression Data*, PhD Thesis, USyd (joint supervision with YH Yang).
- 2012, Christopher Luke Mulcare, *Variable Selection in Linear Regression by Disturbing Explanatory Variables*, Honours Thesis, USyd.
- 2010, Chong You, *Model Selection for Presence and Absence Data*, Honours Thesis, USyd.
- 2010, Kristen Marie Feher, *Characterising the Correlation Structure of High Dimensional Genomic Datasets using a Random Matrix Theory Approach*, PhD Thesis, UWA (joint supervision with J Whelan).
- 2009, Houg (Leanne) Chhay, *Tail Index and Quantile Estimation for Small Samples*, Honours Thesis, USyd.
- 2009, Patrick Nathan Tang, *Optimal Selection of  $m$  in the  $m$ -out-of- $n$  Bootstrap for Regression Models*, Honours Thesis, USyd.
- 2006, Stéphanie Zeier, *Outlier Detection in Finance*, Honours Thesis, UNIBE.
- 2006, Thomas Reusch and Werner Zürcher, *Planning and Interim Analysis of a Fundraising Study*, Honours Thesis, UNIBE.
- 2005, Sabine Güsewell, *Variation Partitioning to Measure Confounded Effects in Ecological Data*, Honours Thesis, UNIBE.
- 2005, Roland Ammann, *Prediction of Fever in Neutropenia in Children with Cancer*, Honours Thesis, UNIBE.

## Publications

### Books

1. Hüsler J, Müller S (2001).  
Final report: [Swiss] national company survey 1995, multiple imputation of volumes of sales (in German only ‘Schlussbericht Betriebszaehlung 1995 (BZ 95). Mehrfach imputierte Umsatzzahlen’).  
*Bundesamt für Statistik: Methodenbericht 338-0002*, Neuenburg, 44 pages.

### Journal articles

2. Tarr G, Weber NC, Müller S (accepted on 8/02/2015).  
Robust Estimation of Precision Matrices under Cellwise Contamination.  
*Computational Statistics and Data Analysis*, 20 pages.
3. Käser SA, Froelicher J, Li Q, Müller S, Metzger U, Castiglione M, Laffer UT, Maurer CA (accepted on 14/08/2014).  
Adenocarcinomas of the Upper Third of the Rectum and the Rectosigmoid Junction Seem to

- Have Similar Prognosis as Colon Cancers even without Radiotherapy, SAKK 40/87.  
*Langenbeck's Archives of Surgery*, 8 pages (DOI: 10.1007/s00423-014-1243-1).
4. You C, **Müller S**, Ormerod JT, (**accepted on 23/06/2014**).  
On Generalized Degrees of Freedom and their Application in Linear Mixed Model Selection.  
*Statistics and Computing*, 12 pages.
  5. Jayawardana K, Schramm S-J, Haydu L, Thompson JF, Scolyer RA, Mann GJ, **Müller S**,  
Yang YH (**2015**).  
Determination of Prognosis in Metastatic Melanoma through Integration of Clinico-pathologic,  
Mutation, mRNA, microRNA, and Protein Information.  
*International Journal of Cancer*, **136**, 863-74.
  6. Tarr G, Weber NC, **Müller S** (**2015**).  
The Difference of Symmetric Quantiles under Long Range Dependence.  
*Statistics & Probability Letters*, **98**, 144-50.
  7. Garcia TP, **Müller S** (**2014**).  
Influence of Measures of Significance based Weights in the Weighted Lasso.  
*Journal of the Indian Society of Agricultural Statistics*, **68** (**2**), 131-44.
  8. Garcia TP, Carroll RJ, **Müller S**, Walzem RL (**2014**).  
Identification of Important Regressor Groups, Subgroups, and Individuals via Regularization  
Methods: Application to Gut Microfluora Data.  
*Bioinformatics*, **30**, 831-837.
  9. You C, Ormerod JT, **Müller S** (**2014**).  
On Variational Bayes Estimation and Variational Bayes Information Criteria for Linear Re-  
gression Models.  
*Australian & New Zealand Journal of Statistics*, **56**, 73-87.
  10. Garcia TP, **Müller S**, Carroll RJ, Dunn TN, Thomas AP, Adams SH, Pillai SD, Walzem RL  
(**2013**).  
Structured Variable Selection with q-Values.  
*Biostatistics*, **14**, 695-707.
  11. **Müller S**, Scealy J, Welsh AH (**2013**).  
Model Selection in Linear Mixed Models.  
*Statistical Science*, **28**, 135-167.
  12. Murray K, Heritier, S, **Müller S** (**2013**).  
Graphical Tools for Model Selection in Generalized Linear Models.  
*Statistics in Medicine*, **32**, 4438-4451.
  13. Murray K, **Müller S**, Turlach BA (**2013**).  
Revisiting Fitting Monotone Polynomials to Data.  
*Computational Statistics*, **28**, 1989-2005.

14. Oates J, Casikar I, Campain A, **Müller S**, Yang YH, Reid S, Condous G (2013).  
A Prediction Model for Viability at the End of the First Trimester after a Single Early Pregnancy Evaluation.  
*The Australian and New Zealand Journal of Obstetrics*, **53**, 51-57.
15. Sampson JN, Chatterjee N, Carroll RJ, **Müller S** (2013).  
Controlling the local False Discovery Rate in the Adaptive Lasso.  
*Biostatistics*, **14**, 653-666.
16. Feher K, Whelan J, **Müller S** (2012).  
Exploring Multicollinearity using a Random Matrix Theory Approach.  
*Statistical Applications in Genetics and Molecular Biology*, **11**, Iss. 3, Article 15, 34 pages.
17. Firmin L, **Müller S**, Rösler KM (2012).  
The Latency Distribution of Motor Evoked Potentials in Patients with Multiple Sclerosis.  
*Clinical Neurophysiology*, **123**, 2414-2421.
18. Tarr G, **Müller S**, Weber NC (2012).  
A Robust Scale Estimator Based on Pairwise Means.  
*Journal of Nonparametric Statistics*, **24**:187-199.
19. Feher K, Whelan J, **Müller S** (2011).  
Assessing Modularity using a Random Matrix Theory Approach.  
*Statistical Applications in Genetics and Molecular Biology*, **10**, Iss. 1, Article 44, 36 pages.
20. Firmin L, **Müller S**, Rösler KM (2011).  
A Method to Measure the Distribution of Latencies of Motor Evoked Potentials in Man.  
*Clinical Neurophysiology* **122**, 176-182.
21. Martinez JG, Carroll RJ, **Müller S**, Sampson JN, Chatterjee N (2011).  
Empirical Performance of Crossvalidation with Oracle Methods in a Genomics Context.  
*The American Statistician*, **65**, 223-228.
22. **Müller S**, Chhay H (2011).  
Partially Smooth Tail-Index Estimation for Small Samples.  
*Computational Statistics* **26**, 491-505.
23. Tuft KT, Crowther MS, Connell K, **Müller S**, McArthur C (2011).  
Predation Risk and Competitive Interactions Affect Foraging of an Endangered Refuge-Dependent Herbivore.  
*Animal Conservation* **14**, 447-457.
24. Martinez JG, Carroll RJ, **Müller S**, Chatterjee N, Sampson JN (2010).  
A Note on the Effect on Power of Score Tests via Dimension Reduction by Penalized Regression under the Null.  
*International Journal of Biostatistics*, **6**: Iss. 1, Article 12, 12 pages.
25. **Müller S**, Welsh AH (2010).  
On Model Selection Curves.  
*International Statistical Review*, **78**, 240-256.

26. **Müller S**, Rufibach K (2009).  
Smooth Tail Index Estimators.  
*Journal of Statistical Computation and Simulation*, **79**, 1155-1167.
27. **Müller S**, Vial C (2009).  
Partially Linear Model Selection by the Bootstrap.  
*Australian & New Zealand Journal of Statistics*, **51**, 183-200.
28. **Müller S**, Welsh AH (2009).  
Robust Model Selection in Generalized Linear Models (with online supplement).  
*Statistica Sinica*, **19**, 1155-1170.
29. **Müller S**, Rufibach K (2008).  
On the Max-Domain of Attraction of Distributions with Log-Concave Densities.  
*Statistics & Probability Letters*, **78**, 1440-1444.
30. **Müller S**, Bastos Conforto A, Z'Graggen WJ, Kaelin-Lang A (2006).  
Estimating the Number of Motor Units Using Random Sums with Independently Thinned Terms.  
*Mathematical Biosciences*, **202**, 29-41.
31. Hüsler J, Li D, **Müller S** (2006).  
Weighted Least Squares Estimation of the Extreme Value Index.  
*Statistics & Probability Letters*, **76**, 920-930.
32. **Müller S** (2005).  
Two-Stage Support Estimation.  
*Australian & New Zealand Journal of Statistics*, **47**, 463-472.
33. **Müller S**, Welsh AH (2005).  
Outlier Robust Model Selection in Linear Regression.  
*Journal of the American Statistical Association*, **100**, 1297-1310.
34. **Müller S**, Hüsler J (2005).  
Iterative Estimation of the Tail Index.  
*Methodology and Computing in Applied Probability*, **7**, 139-148.
35. Karoussis IK, **Müller S**, Slavi GE, Heitz-Mayfield LJA, Brägger U, Lang NP (2004).  
Association Between Periodontal and Peri-Implant Conditions: a 10-Year Prospective Study.  
*Clinical Oral Implants Research*, **15**, 1-7.
36. **Müller S** (2003).  
Tail Estimation Based on Numbers of Near  $m$ -Extremes.  
*Methodology and Computing in Applied Probability*, **5**, 197-210.
37. Borner MM, Dietrich D, Stupp R, Morant R, Honegger H, Wernli M, Hermann R, Pestalozzi BC, Saletti P, Hanselmann S, **Müller S**, Brauchli P, Castiglione-Gertsch M, Goldhirsch A, Roth AD (2002).

Phase II Study of Capecitabine and Oxaliplatin in First- and Second-Line Treatment of Advanced or Metastatic Colorectal Cancer.  
*Journal of Clinical Oncology*, **20**, 1759-1766.

38. Wittwer M, Flück M, Hoppeler H, **Müller S**, Deplanches D, Billeter R (**2002**).  
Prolonged Unloading of Rat Soleus Muscle Causes Distinct and Co-ordinated Adaptations of the Gene Profile.  
*The FASEB Journal, Express Article*, 10.1096/fj.01-0792fje.
39. Aeberli D, **Müller S**, Schmutz R, Schmid H-P (**2001**).  
Predictive Value of Radiological Criteria for Disintegration Rates of Extracorporeal Shock Wave Lithotripsy.  
*Urologia Internationalis*, **66**, 127-130.
40. Glaus A, **Müller S** (**2001**).  
Messung der Müdigkeit bei Krebskranken im Deutschen Sprachraum: Die Entwicklung des Fatigue Assessment Questionnaires.  
*Pflege* **14**, 161-170.
41. Glaus A, **Müller S** (**2000**).  
Hämoglobin und Müdigkeit bei Tumorpatienten: Untrennbare Zwillinge?  
*Schweizerische Medizinische Wochenschrift*, **130**. 471-477.
42. Schmid J, Ambühl M, Decrouez D, **Müller S**, Ramseyer K (**1999**).  
A Quantitative Fabric Analysis Approach to the Discrimination of White Marbles.  
*Archaeometry*, **41**, 239-252.
43. Wüthrich M, **Müller S**, Kunz S, Potterat J, Kern O (**1998**).  
Analyse der Struktur und der Entwicklung der Bruttolöhne in Vorsorgeeinrichtungen.  
*Mitteilungen der Schweizerischen Aktuarvereinigung, Heft 1*, 55-82.

### Conference proceedings

44. You C, **Müller S**, Ormerod JT (**2013**).  
On Generalized Degrees of Freedom and their Application in Linear Mixed Model Selection.  
*Proceedings of the 59th World Statistics Congress of the International Statistical Institute, Hong Kong, China, 25-30 August 2013*, 3851-3856.
45. **Müller S**, Garcia TP, Carroll RJ (**2013**).  
Informative Measures of Significance for Constructing Intelligent Feature Weights.  
*Proceedings of the 59th World Statistics Congress of the International Statistical Institute, Hong Kong, China, 25-30 August 2013*, 3833-3838.
46. Jayawardana K, **Müller S**, Schramm S-J, Mann GJ, Yang J (**2013**).  
Vertical Data Integration for Melanoma Prognosis.  
*Proceedings of the 59th World Statistics Congress of the International Statistical Institute, Hong Kong, China, 25-30 August 2013*, 3599-3604.

47. **Müller S, Welsh AH (2007).**  
Robust Model Selection in Generalized Linear Models. *In: Oberwolfach Report 50/2007. Re-assessing the Paradigms of Statistical Model-Building.* (Gather U, Hall P, Künsch H-R) 42-43. Available at [http://www.mfo.de/programme/schedule/2007/43/OWR\\_2007\\_50.pdf](http://www.mfo.de/programme/schedule/2007/43/OWR_2007_50.pdf).
48. **Müller S, Welsh AH (2005).**  
Robust Model Selection in Linear Regression Models. *In: Bulletin of the International Statistical Institute 55th Session*, ISBN 1877040282 (CD), 2 pages.
49. **Müller S (2003).**  
Iterated Tail Index Estimation. *In: Bulletin of the International Statistical Institute 54th Session (cd)*, 2 pages.
50. Schmid J, Ambühl M, Decrouez D, **Müller S**, Ramseyer K (2000).  
The use of Quantitative Fabric Analysis for a Better Discrimination of White Marbles. *In: Proceedings of the First International Conference on the Archaeology of Paros and the Cyclades Paros.* Paria Lithos: Parian Quarries, Marble and Workshop of Sculpture. (Schilardi, D. U., Katsonopoulou, D.), 569-575.

#### Non-refereed journal articles

51. **Müller S (2011).**  
Solution to Puzzle Corner 19: Serious Summation.  
*Gazette of the Australian Mathematical Society* **38**, 20-20.
52. **Müller S (2010).**  
Solution to Puzzle Corner 15: Fair Game.  
*Gazette of the Australian Mathematical Society* **37**, 71-71.
53. **Müller S (2009).**  
Solution to Puzzle Corner 9: Lucky Lottery Problem.  
*Gazette of the Australian Mathematical Society* **36**, 13-13.

#### Reports

54. **Müller S, Rufibach, K (2006).**  
Smoothed Semi-Parametric Tail Index Estimation.  
*Institute of Mathematical Statistics, University of Bern, Technical Report*, **58**, 1-20.
55. **Müller S, Rufibach K (2006).**  
A Comparison of Human and Pseudo-Uniform Random Numbers.  
*Institute of Mathematical Statistics, University of Bern, Technical Report*, **55**, 1-14.
56. Assoulin D, Dietrich D, **Müller S**, Schaller M (2001).  
Der Grundwasserspiegel und seine Abhängigkeit vom Niederschlag.  
*Universität Bern, Institut für mathematische Statistik und Versicherungslehre*, 75 pages.

## Theses

57. **Müller S (2002)**.  
Endpoint, tail index, and support estimation in extreme value theory.  
*PhD Thesis in Mathematics, Faculty of Science, University of Bern*, 117 pages.
58. **Müller S (1998)**.  
The robustness of the Friedman test.  
*MSc Thesis in Statistics, Faculty of Science, University of Bern*, 33 pages.

## Software

59. Rufibach K, **Müller S (2007)**.  
smoothtail: Smooth estimation of GPD shape parameter.  
*R package version 1.1.2*.

## Presentations (57 since 2001)

- January 11-16, **2015**, ICORS 2015 – International Conference on Robust Statistics, Kolkata, India.  
*Fitting robust monotone polynomials* in Invited Session “Robust Methods for Complex Data”.
- November 12, **2014**, Departmental Colloquia, Department of Epidemiology & Biostatistics, Texas A&M University, USA. *Single- and multi-layered data classification for biomarker discovery*. Joint work with Ellis Patrick and Jean Yang.
- August 19-22, **2014**, Compstat 2014 – Geneva, Switzerland. *Structural and hierarchical variable selection using weighted regularization methods*. Joint work with Raymond Carroll and Tanya Garcia.
- August 2-7, **2014**, JSM 2014 – Boston, USA. *Multi-layered data classification for biomarker discovery*. Joint work with Ellis Patrick and Jean Yang.
- July 7-10, **2014**, ASC/IMS 2014 Conference – Sydney, Australia. *Identification of important regressor groups, subgroups, and individuals via regularization methods* in Invited Session “Prediction, inference and their application to modelling structural or correlated data”. Joint work with Tanya Garcia, Raymond Carroll and Rosemary Walzem.
- September 20, **2013**, Statistics Seminar, School of Mathematics and Statistics, University of New South Wales, Australia. *Informative measures of significance for constructing Lasso weights*.
- August 25-30, **2013**, 59th World Statistics Congress – Hong Kong, China. *Informative measures of significance for constructing intelligent feature weights*. Joint work with Tanya Garcia and Raymond Carroll.
- August 25-30, **2013**, 59th World Statistics Congress – Hong Kong, China. *On generalised degrees of freedom and their application in linear mixed model selection*. Joint work with Chong You (speaker) and John Ormerod.
- August 25-30, **2013**, 59th World Statistics Congress – Hong Kong, China. *Vertical data integration for melanoma prognosis*. Joint work with Kaushala Jayawardana (speaker), Sarah-Jane Schramm, Graham J Mann and Jean Yang.

August 3-8, **2013**, JSM 2013 – Montreal, Canada. *Integrating multi-layered data for biomarker discovery*. Joint work with Jean Yang (speaker) and Kaushala Jayawardana.

August 3-8, **2013**, JSM 2013 – Montreal, Canada. *Controlling the local False Discovery Rate in the Adaptive Lasso*. Joint work with Joshua Sampson (speaker), Nilanjan Chatterjee and Raymond Carroll.

July 20 - 25, **2013**, 29th European Meeting of Statisticians, Budapest, Hungary. *Robust Scale and Autocovariance Estimation*. Joint work with Garth Tarr (speaker) and Neville Weber.

July 8 - 12, **2013**, ICORS 2013 – International Conference on Robust Statistics, St. Petersburg, Russia. *Robust Scale Estimation and Associated Methods*. Joint work with Garth Tarr (speaker) and Neville Weber.

October 30, **2012**, SSAI Seminar, Australian National University. *Structured variable selection*.

July 9-12, **2012**, ASC 2012 – Australian Statistical Conference, Adelaide, Australia. *Structural variable selection with q-values*. Joint work with Tanya Garcia and Raymond Carroll.

July 1-4, **2012**, The 2nd Institute of Mathematical Statistics Asia Pacific Rim Meeting, Tsukuba, Japan. *Structural variable selection with q-values and the Lasso*. Joint work with Tanya Garcia and Raymond Carroll.

May 29, **2012**, Statistics Seminar, School of Mathematics and Statistics, Macquarie University, Australia. *Structured variable selection*.

December 28-30, **2011**, Statistical Concepts and Methods for the Modern World, Colombo, Sri Lanka. *Graphical Tools for Model Selection* in Invited Session 1 “Dimension Reduction and Variable Selection Methods”.

November 17, **2011**, Departmental Colloquia, Department of Statistics, Texas A&M University, USA. *Graphical Tools for Model Selection*.

July 8, **2011**, Statistics Seminar, Institute of Mathematical Statistics and Actuarial Science, University of Bern, Switzerland. *Graphical Tools for Model Selection*.

June 28, **2011**, Statistics Seminar, National University of Singapore, Singapore. *Graphical Tools for Model Selection*.

June 27 - July 1, **2011**, ICORS 2011 – International Conference on Robust Statistics, Valladolid, Spain. *Efficient and Robust Scale Estimation*. Joint work with Garth Tarr (speaker) and Neville Weber.

March 3, **2011**, Statistics Seminar, George Institute for Global Health, University of Sydney, Australia. *Diagnostic Tables and Plots for Model Selection*.

December 6 - 10, **2010**, ASC 2010 – Australian Statistical Conference, Fremantle, Australia. *Estimating Inflection Points of Motor Evoked Potential Measurements: An Application of Monotone Smoothing Splines*.

August 27, **2010**, Statistics Seminar, School of Mathematics and Statistics, University of New South Wales, Australia. *Model Selection Curves*.

June 28 - July 2, **2010**, ICORS 2010 – International Conference on Robust Statistics, Prague, Czech Republic. *Robust Model Selection Curves*.

November 29 - December 3, **2009**, Biometrics on the Lake – Australasian Region Conference, Taupo, New Zealand. *Visualising Model Selection Criteria for Presence and Absence Data in Ecology*.

November 29 - December 3, **2009**, Biometrics on the Lake – Australasian Region Conference, Taupo, New Zealand. *Building a More Stable Predictive Logistic Regression Model*. Joint work with Anna Campain (speaker) and Jean Yang.

November 19, **2009**, Mathematics Day, Thomas Hassall Anglican College, Australia. *Mathematics in Real Life*.

August 20, **2009**, Statistics Seminar, School of Mathematics and Applied Statistics, University of Wollongong, Australia. *Model Selection in Regression Models*.

June 28 - July 1, **2009**, The 1st Institute of Mathematical Statistics Asia Pacific Rim Meeting, Seoul. *Smooth Tail Index Estimation*. Joint work with Kaspar Rufibach & Houngh Chhay.

April 24, **2009**, Statistics Seminar, School of Mathematics and Statistics, University of Sydney, Australia. *Smooth Extreme Value Estimation for Densities with Log-Concave Tails*. Joint work with Kaspar Rufibach.

November 1-5, **2008**, 33rd ESA Annual Conference, University of Sydney, Australia. *Predicting Resource Selection by a Semi-Aquatic Mammal at Multiple Scales*. Joint work with: Kristin Connell (speaker), Mathew Crowther, and Clare Mc Arthur.

October 10, **2008**, Statistics Seminar, School of Mathematics and Statistics, University of New South Wales, Australia. *Consistent Model Selection in Regression Type Models*.

July 14-19, **2008**, 7th World Congress in Probability & Statistics, Singapore. *Partially Linear Model Selection by the Bootstrap*. Joint work with Céline Vial.

May 30, **2008**, Statistics Seminar, School of Mathematics and Statistics, University of Sydney, Australia. *Partially Linear Model Selection by the Bootstrap*. Joint work with Céline Vial.

October 21-27, **2007**, Workshop on ‘Reassessing the Paradigms of Statistical Model Building’, MFO Oberwolfach, Germany. *Robust Model Selection in Generalized Linear Models*. Joint work with: Alan H. Welsh.

May 18, **2007**, Colloquium, School of Mathematics and Statistics, University of Sydney, Australia. *On (Generalized) Linear Model Classification and Penalization*.

February 16, **2007**, Colloquium, Institute of Mathematical Statistics and Actuarial Science, University of Bern, Switzerland. *On (Generalized) Linear Model Penalization and Classification*.

- May 24, **2006**, Colloquium, Institute for Mathematical Stochastics, University of Göttingen, Germany. *Model Selection in Regression Type Models*.
- April 12, **2006**, Institutsseminar, Department of Mathematical Statistics, University of Bern, Switzerland. *Least Angle Regression*. Joint work with: Lutz Dümbgen.
- March 14-17, **2006**, German Open Conference on Probability and Statistics, Frankfurt am Main, Germany. *Semi-Parametric Tail Index Estimation and Max-Domain of Attraction for Log-Concave Densities*. Joint work with: Kaspar Rufibach (speaker).
- March 13, **2006**, Statistics Seminar, School of Mathematics & Statistics, University of Western Australia, Perth, Australia. *Model Selection in Regression Type Models*.
- March 2, **2006**, Statistics Seminar, Mathematical Sciences Institute, The Australian National University, Canberra, Australia. *Smoothed Semi-Parametric Tail Index Estimation and Max-Domain of Attraction for Log-Concave Densities*. Joint work with: Kaspar Rufibach.
- January 25, **2006**, Institutsseminar, Department of Mathematical Statistics, University of Bern, Switzerland. *Semi-Parametric Tail Index Estimation and Max-Domain of Attraction for Log-Concave Densities*. Joint work with: Kaspar Rufibach.
- May 20, **2005**, Swiss Statistics Seminar, Bern, Switzerland. *Linear and Partially Linear Model Selection*.
- April 5-12, **2005**, 55th Session of the International Statistical Institute (ISI 2005), Sydney, Australia. *Robust Model Selection in Linear Regression Models*. Joint work with: Alan H. Welsh.
- January 19, **2005**, Institutsseminar, Department of Mathematical Statistics, University of Bern, Switzerland. *Maximum Likelihood and Complex Survey Data*.
- January 12, **2005**, Institutsseminar, Department of Mathematical Statistics, University of Bern, Switzerland. *Nonconcave Penalized Likelihood Estimation*. Joint work with: Kaspar Rufibach.
- November 10, **2004**, Institutsseminar, Department of Mathematical Statistics, University of Bern, Switzerland. *Robust Variable Selection in Linear Models*.
- July 12-16, **2004**, International Conference on Robust Statistics (ICORS 2004), Beijing, China. *Outlier Robust Model Selection*. Joint work with: Alan Welsh (speaker).
- July 11-16, **2004**, XXIInd International Biometric Conference (IBC 2004), Cairns, Australia. *Estimating the Number of Motor Units Using Random Sums with Independently Thinned Terms*. Joint work with: Adriana Bastos Conforto, Werner J. Z'Graggen, and Alain Kaelin-Lang.
- March 12, **2004**, Applied Statistics Seminar, Canberra, Australia. *Estimating the Number of Motor Units in a Muscle*.
- August 13-20, **2003**, 54th Session of the International Statistical Institute (ISI 2003), Berlin, Germany. *Iterated Tail Index Estimation*. Joint work with: Jürg Hüsler.
- July 21-26, **2002**, XXIst International Biometric Conference (IBC 2002), Freiburg, Germany. *An L1 Approach to Detect Candidate Genes*. Joint work with: Michael Vock, Matthias Wittwer.

January 14-17, **2002**, International Workshop in Applied Probability (IWAP 2002), Caracas, Venezuela. *Robust Tail Estimation based on Near Extremes*.

September 23-27, **2001**, ROeS-Seminar, Mayrhofen, Austria. *Robustness for Tests in Randomized Complete Block Designs*.

## Posters

November 19, **2008**, 4th Meeting of the Clinical Neuroscience Bern, University Hospital of Psychiatry Bern, Switzerland. *A method to measure the distribution of central motor conduction times in man*. Joint work with: Lea Firmin, Kai Michael Rösler.

November 12, **2003**, Day of Clinical Research, Bern, Switzerland. *A new statistical model for estimating the number of motor units in neurophysiological studies: the random sums with independently thinned terms*. Joint work with: Adriana Conforto, Werner Z'Graggen, Alain Kaelin-Lang.

July 21-26, **2002**, XXIst International Biometric Conference (IBC 2002), Freiburg, Germany. *An L1 Approach to Detect Candidate Genes*. Joint work with: Michael Vock, Matthias Wittwer.

November 8-9, **2000**, Statistiktage, St. Gallen, Switzerland. *Using discriminant analysis to determine the provenance of white marble specimens*. Joint work with: Jacqueline Schmid, Mathias Ambühl.

## Conference organization

August 8-13, **2015**, JSM 2015, Seattle, USA, *Organiser of the invited paper session 'New Techniques for Confident Model Selection'*.

January 30, **2015**, Symposium, Sydney, Australia. *Organiser of 'Much More than U-Statistics: A Symposium to Celebrate Neville C Weber' (jointly with Garth Tarr)*.

July 7-10, **2014**, ASC/IMS 2014, Sydney. *Organiser of the invited paper session 'Prediction, Inference and their Application to Modelling Structural or Correlated Data'*.

June 15-18, **2014**, WNAR, Honolulu, USA. *Chair of the contributed paper session 'Case Studies'*.

September 30 - October 3, **2013**, 57th AustMS, Sydney. *Organiser of the special session 'Probability and Statistics' (jointly with John Ormerod)*.

July 1-4, **2012**, 2nd IMS APRM, Tokio. *Organiser of the invited paper session 'Mixed Models' (jointly with Alan H Welsh)*.

December 28-30, **2011**, Statistical Concepts and Methods for the Modern World, Colombo, Sri Lanka. *Organiser of the invited paper session 'Model Building for Complex Data'*.

December 6-10, **2010**, ASC 2010, Fremantle, Australia. *Chair of contributed paper session 'Inference'*.

July 14-19, **2008**, 7th World Congress in Probability & Statistics, Singapore. *Chair of contributed paper session 'Goodness of Fit'*.

## Refereeing for 21 journals

Annals of Statistics, Australian & New Zealand Journal of Statistics, Bernoulli, Biometrical Journal, Biometrika, Computational Statistics & Data Analysis, Extremes, Hacettepe Journal of Mathematics and Statistics, International Journal of Biostatistics, International Statistical Review, Journal of the American Statistical Association, Journal of Computational and Graphical Statistics, Journal of the Indian Society of Agricultural Statistics, Journal of the Korean Statistical Society, Journal of the Royal Statistical Society: Series A, Journal of Statistical Computation and Simulation, Journal of Statistical Planning and Inference, Methodology and Computing in Applied Probability, Reinvention, Statistics, Statistics in Medicine.

## Examination of 3 higher degree research candidates

2014, PhD thesis examiner report for William Aeberhard from the University of Geneva on ‘*Contributions to overdispersed count data modeling: Robustness, small samples and other extensions*’.

2014, Masters thesis examiner report for Wenli Hu from Macquarie University on ‘*Statistical models for speech recognition tests*’.

2013, PhD thesis examiner report for Lin Bingqin from Nanyang Technological University on ‘*Variable selection in parametric and semiparametric models*’.

## Professional service

Since 2012, Postgraduate Director.

Since 2012, Member of the Research Committee (School of Mathematics & Statistics, USyd)

Since 2011, Assessor for the ARC. 5 assessments since 2011.

Since 2009, Reviewer for Mathematical Reviews (MR). 4 reviews since 2009.

2012, Deputy Postgraduate Director.

2008-11, 3rd year student advisor for statistics (School of Mathematics & Statistics, USyd)

2009-10, Member (Level A-C Representative) of the School Management Committee (School of Mathematics & Statistics, USyd)

2007, Member of the School Teaching and Learning Committee (School of Mathematics & Statistics, UWA)

2006-07, 2nd/3rd year student advisor for statistics (School of Mathematics & Statistics, UWA)

2006-07, Treasurer of the Austrian–Swiss Region of the International Biometric Society

## Honors and awards

Nominated in the ‘Individual Teaching’ category for the Faculty Teaching Award 2007, Faculty of Engineering, Computing and Mathematics, University of Western Australia.

Faculty Award in Mathematics, 1999, University of Bern, Switzerland.

**Professional memberships**

International Biometric Society (IBS) – Australasian Region

Institute of Mathematical Statistics (IMS)

Statistical Society of Australia Incorporated (SSAI).

Australian Mathematical Society

**Confidential referees**

Available upon request.