

## Professional experience

- since 2017 **Lecturer**, *University of Sydney*.  
School of Mathematics and Statistics, Faculty of Science
- 2015–2017 **Lecturer**, *University of Newcastle*.  
School of Mathematical and Physical Sciences, Faculty of Science
- 2015 **Research Fellow**, *University of Sydney*.  
School of Mathematics and Statistics, Faculty of Science
- 2014–2015 **Postdoctoral Fellow**, *Australian National University*.  
Mathematical Sciences Institute, College of Physical & Mathematical Sciences
- 2013–2014 **Research Associate**, *University of Sydney*.  
School of Mathematics and Statistics, Faculty of Science
- 2011–2013 **Postgraduate Teaching Fellow**, *University of Sydney*.  
School of Mathematics and Statistics, Faculty of Science

## Visiting positions

- 2015–2017 **Honorary Lecturer**, *University of Sydney*.  
School of Mathematics and Statistics, Faculty of Science

## Education

- 2010–2014 **Doctor of Philosophy in Science (Mathematical Statistics)**, *University of Sydney*.  
Academic supervisors: Neville Weber and Samuel Müller
- 2003–2009 **Bachelor of Science (Advanced) Honours I**, *University of Sydney*.  
Financial Mathematics and Statistics
- 2003–2008 **Bachelor of Commerce**, *University of Sydney*.  
Econometrics and Finance

## Publications

### Refereed journal articles

1. **Tarr G**, Müller S and Welsh AH (2018). mplot: An R package for graphical model stability and variable selection procedures. *Journal of Statistical Software*. [arxiv.org/abs/1509.07583](https://arxiv.org/abs/1509.07583)
2. Konarska M, Kuchida K, **Tarr G** and Polkinghorne RJ (2017). Relationships between marbling across principal muscles. *Meat Science*, 123 67–78. DOI: 10.1016/j.meatsci.2016.09.005
3. **Tarr G**, Müller S and Weber NC (2016). Robust estimation of precision matrices under cellwise contamination. *Computational Statistics & Data Analysis*, 93 404–420. DOI: 10.1016/j.csda.2015.02.005
4. **Tarr G**, Weber NC and Müller S (2015). The difference of symmetric quantiles under long range dependence. *Statistics & Probability Letters*, 98 144–150. DOI: 10.1016/j.spl.2014.12.022
5. Dancer D, Morrison K and **Tarr G** (2015). Measuring the effects of peer learning on students' academic achievement in first year business statistics. *Studies in Higher Education*, 40(10) 1808–1828. DOI: 10.1080/03075079.2014.916671
6. **Tarr G**, Müller S and Weber NC (2012). A robust scale estimator based on pairwise means. *Journal of Nonparametric Statistics*, 24(1) 187–199. DOI: 10.1080/10485252.2011.621424

7. **Tarr G (2012)**. Small sample performance of quantile regression confidence intervals. *Journal of Statistical Computation and Simulation*, 82(1) 81–94. DOI: 10.1080/00949655.2010.527844

### Articles Under Review

8. Polkinghorne RJ, Philpott J, Perovic J, Lau J, Davies L, Mudannayake W, Watson R, **Tarr G** and Thompson, JM (2018). The effect of packaging on consumer eating quality of beef.
9. Wang KYX, Menzies A, Silva I, Wilmott J, Yan Y, Wongchenko M, Kefford R, Scolyer R, Long G, **Tarr G**, Mueller S and Yang J (2018). bcGST - an interactive bias-correction method to identify over-represented gene-sets in boutique arrays. *bioRxiv*, under review. DOI: 10.1101/240234

### Software

10. **Tarr G**, Müller S and Welsh AH (2016). mplot: Graphical model stability and model selection procedures. R package. [github.com/garhtarr/mplot](https://github.com/garhtarr/mplot)
11. **Tarr G (2016)**. StatStar: An interactive statistics education portal. [statstar.io](https://statstar.io)
12. **Tarr G (2015)**. pairsD3: D3 scatterplot matrices. R package. [github.com/garhtarr/pairsD3](https://github.com/garhtarr/pairsD3)
13. **Tarr G** and Patrick E (2015). edgebundleR: Circle plots with bundled edges. R package. [github.com/garhtarr/edgebundleR](https://github.com/garhtarr/edgebundleR)

### Other Articles

14. Pethick, McGilchrist, Polkinghorne, Warner, **Tarr**, Garmyn, Thompson and Hocquette (2018). Travaux de recherche internationaux sur la qualité sensorielle de la viande ovine et bovine (International research on beef and lamb eating quality). *Viandes et produits Carnés (Meat and meat products)*, in press.
15. Murad H and **Tarr G (2017)**. Visualising and interpreting interactions in binary logistic regression models. *Biometric Bulletin*, 34(3). International Biometric Society.
16. **Tarr G (2017)**. Interactive data analysis in R through the Shiny package. *Biometric Bulletin*, 34(2). International Biometric Society.
17. **Tarr G (2017)**. Model selection in R. *Biometric Bulletin*, 34(1). International Biometric Society.
18. **Tarr G (2017)**. Interactive data analysis in R. *International Biometric Society Australasian Region Newsletter*, 19. International Biometric Society.
19. **Tarr G (2016)**. Getting data into R. *Biometric Bulletin*, 33(3). International Biometric Society.
20. **Tarr G (2016)**. Parallel computation in R. *Biometric Bulletin*, 33(2). International Biometric Society.
21. **Tarr G (2015)**. Quantile based estimation of scale and dependence. *Bulletin of the Australian Mathematical Society*, 92(1), 173-175. DOI: 10.1017/S0004972715000283
22. Pethick, Thompson, Polkinghorne, Bonny, **Tarr**, Treford, Sinclair, Frette, Wierzbicki, Crowley, Gardner, Allen, Nishimura, McGilchrist, Farmer, Meng, Scollan, Duhem and Hocquette (2015). Prédiction de la qualité de la viande de ruminants (Prediction of the meat quality of ruminants). *Viandes et produits Carnés (Meat and meat products)*, November 2015.
23. Hendry GD, **Tarr G** and Morrison K (2015). The benefits of peer review versus peer observation: Facilitators' experiences in a peer assisted study program. Paper presented at *2015 International Business & Education Conferences*, June 7-11 London, UK. [cluteinstitute.com/proceedings](https://cluteinstitute.com/proceedings)
24. **Tarr G** and Müller S (2015). Much more than  $U$ -statistics: A symposium to celebrate Neville C. Weber. *Statistics Society of Australia Newsletter*, June 2015.

### Theses

25. **Tarr G (2014)**. *Quantile Based Estimation of Scale and Dependence*. PhD thesis. University of Sydney, Australia.
26. **Tarr G (2009)**. *Quantile Regression Confidence Intervals: Theoretical Exposition and Empirical Findings*. Honours thesis. University of Sydney, Australia.

## Workshops

1. Model selection with R.
  - *Australian National University*, Canberra, Australia, 10-11 April **2017** (29 participants)
  - *University of Western Australia*, Perth, Australia, 23-24 November **2015** (30 participants).
2. Fast algorithms and modern visualisations for feature selection. *International Society for Clinical Biostatistics and Australian Statistical Conference*, Melbourne, Australia, 26 August **2018**.
3. Analytics for industry.
  - *Meat and Livestock Australia*, Brisbane, Australia, 4-6 and 19-20 April **2018**.
  - *Teys Australia*, Brisbane, Australia, 24-26 July and 22-23 August **2017** (11 participants).
  - *Meat and Livestock Australia*, Brisbane, Australia, 15-19 May **2017** (8 participants).
  - *Australian Country Choice*, Brisbane, Australia, 7-11 November **2016** (11 participants).
4. Data visualisation, interactive data analysis and statistical programming. *BioInfoSummer*, Sydney, Australia, 11 December **2015** (90 participants).

## Teaching

### University of Newcastle

- STAT1070 Statistics for the Sciences, first year service course (2016 S1 and S2, 2017 Summer)
- STAT3010 Statistical Inference, third year statistics course (2017)
- STAT3170 Surveys and Experiments, third year statistics course (2017)

### University of Sydney

- MATH1905 Statistics (Advanced), first year statistics at an advanced level (2013)
- PHAR1811 Foundations of Pharmacy, statistics for first year pharmacy students (2011-13)
- PHAR2821 Drug Discovery and Design B, correlation and regression for second year pharmacy students (2012-13)

## Supervision

### Postgraduates

- since 2016 Associate supervision of Yu Xiang (Kevin) Wang, *TBD*. PhD, University of Sydney.
- since 2017 Associate supervision of Holly Cuthbertson, *Infra-red thermography and radio frequency identification for detection of stress in lairage*. PhD, University of Sydney.

### Summer scholars

- 2018 Supervision of Danielle Zhang, *Functional data analysis*, Denison Summer Scholar, University of Sydney
- 2018 Supervision of Cade Brennan, *Modelling consumer willingness to pay*. Denison summer scholar, University of Sydney
- 2015-16 Co-supervision of Lachlan O'Neil, *Observing and predicting trends in one day cricket*. Summer scholar, University of Newcastle.
- 2015-16 Co-supervision of Matthew Clapham and Charlotte Gooding, *Comparison of the standard and alternative odds ratios*. Summer scholar, University of Newcastle.
- 2014-15 Secondary supervision of Yu Xiang (Kevin) Wang, *Frequentist model selection and model averaging techniques*. Summer scholar, Australian National University.
- 2014-15 Secondary supervision of Timothy Bilton, *Model selection in linear mixed models using the lasso*. Summer scholar, Australian National University.

## Achievements

### Grants and funding

- Meat and Livestock Australia, Research and Development Grant. Advanced measurement technologies for globally competitive Australian meat value chains, **2017**. \$30,000
- Meat and Livestock Australia, travel grant to attend UNECE Workshop on Sustainable Meat Markets, Cross-border Trade and Eating Quality, **2017**. \$3,500
- NSW Department of Industry, Conference Sponsorship Program, **2017**. \$3,300
- University of Newcastle, CARMA funding, **2016-17**. \$4,000
- University of Newcastle, ECA Networking/Conference Grant, **2017**. \$2,000
- University of Newcastle, PVC Conference Assistance Grant, **2015-17** \$6,000
- International Biometric Society Australasian Region Travel Grant, **2016**. \$3,000
- University of Newcastle, New Staff Grant, **2016**. \$7,500
- Meat and Livestock Australia, travel grant for MLA project L.EQT.1605, International collaboration on beef and lamb carcass grading to underpin consumer satisfaction, **2015**. \$3,000
- Australian National University Early Career Researcher Travel Grant, **2015**. \$2,100
- Statistical Society of Australia Golden Jubilee Travel Grant, **2013**. \$1,000
- University of Sydney Statistics Research Group funding, **2011-13**. \$3,100
- University of Sydney Postgraduate Research Support Scheme funding, **2011-12**. \$2,900
- Australian Postgraduate Award, University of Sydney, **2010-13**. \$81,500
- University of Sydney, Widening Participation Grant. Student diversity: What do we know about our students and how does it affect our teaching? With Muir M, Drury H, Morison K and White F, **2012**. \$25,000
- University of Sydney, Small TIES Grant. Knowing your students: A faculty wide initiative to provide student demographic data to support curriculum change. With Morrison K, Riemer K, Clarkeburn H and Seltsikas P, **2010**. \$7,856

### Awards

- Vice-Chancellor's Award for Teaching Excellence and Contribution to Student Learning, University of Newcastle. With Renner I, **2016**.
- EJG Pitman Prize for the most outstanding talk presented by a young statistician at the Australian Statistical Conference, **2012**.
- First prize for the best oral presentation by a student at the Australian Young Statisticians Conference, **2013**.
- Vice-Chancellor's Award for Systems that Achieve Collective Excellence in Teaching and Learning, University of Sydney. With Morison K and Morr J, **2011**.
- Excellence in Tutoring Award, University of Sydney Business School, **2010**.
- Dean's Citation for Tutoring, University of Sydney Business School, **2010, 2011 and 2012**.

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## Presentations

### Keynote

1. Statistics for the sciences. *Science Teachers Association of NSW Annual Conference*, Sydney, Australia, February **2017**.

### Invited

2. Assessing selection stability in regularised regression models. *10th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2017)*, London, UK, December **2017**.
3. Are consumers willing to pay for eating quality? *UNECE Workshop on Sustainable Meat Markets, Cross-border Trade and Eating Quality*, Dublin, Ireland, August **2017**.
4. Robust regularised precision matrix estimation. *International Conference on Computational Statistics (COMPSTAT)*, Oviedo, Spain, August **2016**.
5. Estimating dependence structures under cellwise contamination. *Institute of Mathematical Statistics Asia Pacific Rim Meeting*, Hong Kong, June **2016**.
6. Visualising variable selection with mplot. *International Conference on Robust Statistics*, Kolkata, India, January **2015**.
7. Modelling, prediction and statistics with reference to MSA. *International meeting on beef and lamb carcase grading to underpin consumer satisfaction*, Paris, France, August **2015**.
8. Long range dependent. *Much more than U-statistics: A symposium to celebrate Neville C. Weber*, Sydney, Australia, January **2015**.

### Academic seminars

9. Model selection stability with mplot. *University of Sydney, School of Mathematics and Statistics*, Sydney, Australia, December **2016**.
10. Data visualisation, interactive data analysis and statistical programming. *University of Newcastle Statistics Seminar Series*, Newcastle, Australia, May **2016**.
11. Quantile based estimation of scale and dependence. *Australian National University, Mathematical Sciences Institute*, Canberra, Australia, February **2016**.
12. Visualising model selection stability. *Macquarie University Statistics Seminar*, Sydney, Australia, September **2015**.
13. Interactive and data adaptive model selection with mplot. *University of Newcastle Statistics Seminar Series*, Newcastle, Australia, October **2015**.
14. Robust methods and model selection. *CARMA Retreat – Priority Research Centre for Computer-Assisted Research Mathematics and its Applications*, Newcastle, Australia, September **2015**.
15. Shiny packages in R: the mplot experience. *The University of Sydney School of Mathematics and Statistics, Statistical Bioinformatics Meeting*, Sydney, Australia, January **2015**.
16. A stability based approach to model selection. *The University of Sydney Business School, Discipline of Business Analytics*, Sydney, Australia, January **2015**.
17. Visualising variable selection: the mplot package. *University of Wollongong, NIASRA Fellows Research Meeting*, Goulburn, Australia, November **2014**.
18. Robust estimation of scale and covariance with  $P_n$  and its application to precision matrix estimation. *University of Sydney, School of Mathematics and Statistics Seminar*, Sydney, Australia, September **2013**.
19. Robust estimation of scale and covariance with  $P_n$  and its application to PCA. *University of NSW, School of Mathematics and Statistics Seminar*, Sydney, Australia, April **2013**.

### Industry seminars

20. Generational trends in willingness to pay. *Meat Standards Australia Pathways Committee Meeting*, Brisbane, Australia, October **2017**.
21. Sensory results form the stress and transport trial. *Meat Standards Australia Pathways Committee Meeting*, Brisbane, Australia, October **2017**.
22. Keeping up with R – modern data processing tools and visualisation. *Statistical Society of Australia Seminar*, Canberra, Australia, April **2017**.
23. Preliminary results from the stress and transport trial. *Meat Standards Australia Pathways Committee Meeting*, Brisbane, Australia, September **2016**.
24. Accuracy of the MSA model. *Meat Standards Australia Taskforce Committee Meeting*, Brisbane, Australia, May **2016**.
25. Meat colour and packaging. *Meat Standards Australia Pathways Committee Meeting*, Melbourne, Australia, April **2016**.
26. Meat colour and packaging. *Teys Australia*, Brisbane, Australia, March **2016**.
27. Robust methods and model selection. *Meat Standards Australia Pathways Committee Meeting*, Sydney, Australia, September **2014**.

### **Contributed**

28. Visualising model selection stability in high-dimensional regression models. *Biometrics by the Border: The International Biometric Society Australasian Region Conference*, Kingscliff, Australia, November **2017**.
29. Model selection stability with mplot. *International Biometric Conference*, Victoria, Canada, July **2016**.
30. Interactive and data adaptive model selection with mplot. *International Biometric Society Australasian Region Conference*, Hobart, Australia, December **2015**.
31. A pairwise approach to estimating precision and covariance matrices under cellwise contamination. *Robust Statistics and Extremes*, Australian National University, Canberra, Australia, September **2014**.
32. Robust estimation of precision matrices under cellwise contamination. *International Conference on Computational Statistics*, Geneva, Switzerland, August **2014**.
33. Robust scale and autocovariance estimation. *European Meeting of Statisticians*, Budapest, Hungary, June **2013**.
34. Robust covariance estimation via quantiles of pairwise means and applications. *International Conference on Robust Statistics*, Saint Petersburg, Russia, July **2013**.
35. Robust scale estimation with extensions. *Young Statisticians Conference*, Melbourne, Australia, February **2013**.
36. Robust covariance estimation with  $P_n$ . *Australian Statistical Conference*, Adelaide, Australia, July **2012**.
37. Efficient and robust scale estimation. *International Conference on Robust Statistics*, Valladolid, Spain, June **2011**.
38. Quantile regression confidence intervals: theoretical exposition and empirical findings. *Young Statisticians Conference*, Sydney, Australia, September **2009**.

## Professional service

### Conference organisation

- Organiser of an invited paper session, International Conference on Econometrics and Statistics (EcoSta), June 19-21 **2018**, Hong Kong.
- Co-organiser of the International Conference on Robust Statistics (ICORS), July 3-7 **2017**, Wollongong, Australia.
- Member of the scientific program committee, International Biometrics Society Australasian Region Conference "Biometrics by the Border", November 26-30, **2017**, Kingscliff, Australia.
- Organiser of the invited paper session, 'Modelling complex data', International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics), December 16-18 **2017**, London, UK.
- Organiser of the invited paper session, 'Advanced Graphical and Computational Methods', International Conference on Econometrics and Statistics (EcoSta), June 15-17 **2017**, Hong Kong.
- Organiser of the invited paper session, 'Health analytics and informatics', International Congress on Modelling and Simulation (MODSIM), December 3-8 **2017**, Hobart, Australia.
- Organiser of 'Much more than  $U$ -statistics: A symposium to celebrate Neville C. Weber', January 30 **2015**, Sydney, Australia (jointly with Samuel Mueller).
- Member of the scientific program committee, SSAI Young Statisticians Conference, February 7-8 **2013**, Melbourne, Australia.
- Chair of the scientific program committee, SSAI Young Statisticians Conference, July 14-15 **2011**, Brisbane, Australia.

### Committees and boards

- 2018 Statistics seminar organiser, School of Mathematics and Statistics, University of Sydney
- 2017 ERA and EI cluster advisory group for cluster 6 – Mathematical, Information and Computing Sciences, University of Newcastle
- 2017 Vice-Chancellor's Awards Committee Member, University of Newcastle
- 2016-2017 Program convenor, Master of Data Science and Analytics, School of Mathematical and Physical Sciences, University of Newcastle
- 2016-2017 Strategic hires committee, School of Mathematical and Physical Sciences, University of Newcastle
- since 2015 Statistical and methodological advisor, Meat Standards Australia Beef Pathways Committee
- since 2017 Statistical and methodological advisor, Meat Standards Australia Lamb Pathways Committee

### Refereeing

Advances in Data Analysis and Classification; Computational Statistics and Data Analysis (2); Festschrift in Honour of Hannu Oja; International Congress on Modelling and Simulation (2); PLOS ONE; Sri Lankan Journal of Applied Statistics; Statistica Neerlandica; Statistics & Probability Letters; Studies in Higher Education (2); The R Journal; Australian Conference on Teaching Statistics (OZCOTS); PhD Theses (UMelb; UWA)

### Professional affiliations and societies

- since 2009 Statistical Society of Australia
- since 2011 Australian Mathematical Society
- since 2014 American Statistical Association
- since 2015 International Biometrics Society
- since 2015 Priority Research Centre for Computer-Assisted Research Mathematics and its Applications (CARMA)

January 17, 2018