

Robert Graham Clark

Personal Details

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Current Position: Principal, Statistics Adding Value (Australian Business Number 33591337395)

Education

2002 Ph.D in Statistics, University of Wollongong. *Sample Design and Estimation for Household Surveys*.
1995 Master in Statistics, Australian National University.
1990 B.Sc with First Class Honours in Mathematics, University of Queensland.

Career Highlights

22 papers in peer reviewed journals and co-authorship of a major textbook on the model-based approach to sample surveys (pages 5-6).

Substantial consulting projects making a difference to numerous organisations in Australia and New Zealand (page 3).

Successful teaching of statistics to public servants, short course participants, statistics majors and psychology students over 24 years (page 4).

Primary supervisor of 3 completed PhD students.

Academic leadership as an Academic Integrity Officer, the director of a statistical consulting unit and a research centre, and an active member of curriculum review and Excellence in Research Australia committees.

Professional leadership through associate editorships, and roles in the Statistical Society of Australia (including Canberra Branch president 2015 –2017).

Work History

2017 -	Associate Professor, ANU Statistical Consulting Unit.
2010 – 2017	Associate Professor, National Institute for Applied Statistics Research Australia, University of Wollongong (UOW). Director of the Centre for Sample Survey Methodology (2015-17). Lectured third and fourth year subjects including teaching psychology students. PhD supervision.
2004 – 2009	Senior Lecturer, School of Mathematics and Applied Statistics (UOW); Deputy Director, Centre for Statistical and Survey Methodology. Director of Statistical Consulting Service (2004-2006) which provides statistical expertise to UOW researchers. Lectured second, third and fourth year subjects including teaching psychology students. PhD supervision.
2004	Director of the Household Survey Methodology Section, Australian Bureau of Statistics (ABS). I led the team analysing the statistical impact from the introduction of telephone interviewing to the Labour Force Survey.
2002 – 2004	Director in the Business Survey Methodology Section of the ABS. Highlights included contributing to a major reorganisation of ABS business statistics and the introduction of calibrated weighting to business surveys.
1999 – 2002	PhD at the University of Wollongong, including a one-year visit to the Southampton Statistical Sciences Research Institute.
1994 – 1998	Assistant Director in the ABS Methodology Division, including conducting a major redesign of the ABS Monthly Population Survey in 1996.
1991 – 1994	Research Officer & Senior Research Officer, ABS Methodology Division.

Awards and Professional Activities

2017 –	Elected Fellow of the International Statistical Institute
2004 –	Accredited Statistician, Statistical Society of Australia (SSA)
2015 – 2017	President, Canberra Branch of the SSA
2014 – 2015	Member of the Accreditation Committee of the SSA.
2010 – 2014	<i>Ask the Expert</i> Column Editor, International Association of Survey Statisticians Newsletter.
2010 – 2013	Associate Editor, <i>Journal of the Royal Statistical Society Series A</i> .
2011	Ken Foreman Lecturer, SSA Canberra Branch.
2003 – 2009	Associate Editor, <i>Australian and New Zealand Journal of Statistics</i> .
2002 – 2009	Associate Editor, <i>Journal of Official Statistics</i> .
2002 – 2004	Chair, Surveys and Management Section of the SSA.
2002	American Statistical Association Herriot Student Travel Award.
1999 – 2002	Australian Postgraduate Award Industry scholarship
1996	Ken Foreman Award for Achievement and Potential of a Young Methodologist at the ABS, inaugural recipient.

Major Consulting Projects

2006 – 2017	Primary advisor on sample design and statistical methods for the 2006-2007 NZ Health Survey and the 2011- NZ Continuous Health Monitor. Major partnership agreements were awarded by a competitive process every two years without cessation. I was the relationship manager and primary adviser to the NZ Ministry of Health 2006-2017.
2016	Review of the bias of estimated fish weights in tow cages for the Australian Bureau of Agricultural and Resource Economics and Sciences.
2015	Development of a sampling plan and samples of streets and polygons for surveys of urban trees for the ACT Government's Urban Treescapes unit.
2014 – 2015	Development of sample designs and estimation strategies and provision of advice to the Australian Bureau of Statistics on a transformed population statistics framework.
2013 – 2014	Review of the sample design of the Labour Force Survey for Statistics NZ.
2010 – 2014	Sample design and weighting advice for the Australian Institute of Family Studies on the Survey of Recently Separated Parents.
2013	Advice to the University of Queensland Faculty of Biology on strategies for sampling of koalas in Eastern Australia.
2008 – 2013	Weighting of the Digital Tracking Survey for Newspoll.
2012	Review of the 2012 National Social Housing Survey for Housing NSW.
2011 – 2012	Review of aerial sampling of brumbies in South Eastern Australia, for the NSW Office of Environment and Heritage.
2011	Review of the 2009 NZ Crime and Safety Survey methodology for the NZ Ministry of Justice.
2009 – 2010	Analysis of fibre intake distributions (client details withheld).
2008 – 2009	Development of the sample design and selection of schools for the National Secondary Students' Diet and Activity Survey. The client was Cancer Council Victoria.
2008	Review of weighting and development of new weighting methods for the Supported Accommodation Assistance Programme data collection. The client was the Australian Institute of Health and Welfare.
2007	Review of the 2006 NZ Crime and Safety Survey methodology for the NZ Ministry of Justice.
2006	Development of sample design strategies for a possible Australian Asthma Survey, for the Woolcock Institute for Medical Research.
2005 – 2006	Statistical designs and analyses for a Continental Forest Monitoring Framework, for the Department of Agriculture, Fisheries and Forestry.

Short Courses

Statistical Design and Analysis for Social Science PhD students (3 days): April 2018

Analysis of Survey Data (1-2 days):

- July 2015: Cancer Institute NSW
- July 2014: NSW Ministry of Health
- July 2013: NSW Bureau of Health Information
- July – August 2013: NZ Ministry of Health

Logistic Regression (1 day): September 2007: Australian Bureau of Statistics; April 2007: NZ Ministry of Health.

Practical Sample Design (2 days): August 2015, Australian Bureau of Statistics

Sampling Subpopulations (1 day): June 2013, Sydney Business School

Analysis of Household Surveys (1 day): July 2006, University of Manchester, UK

Survey Quality and Costs (1 day): September 2006, Wellington, NZ

Survey Methods 1 and Model-Assisted Methods Short Courses, ABS 1994, 1996, 2002, 2003

University Teaching

Design and Analysis (a third year subject for psychology students): 2004, 2006-2010, 2015, 2016.

Survey Design and Analysis (an honours subjects for Bachelor of Mathematics and masters students): 2004, 2007, 2009, 2013 – 2016.

Experimental design and sample surveys (a third year subject for Bachelor of Mathematics students): 2005 – 2007.

Probability and random variables (a second year subject for Bachelor of Mathematics students): 2007, 2009.

Statistical and Data Collection Methods for Surveys (Graduate Certificate in Survey and Market Research Methods): 2010 – 2013.

Sample Design and Estimation (Graduate Certificate in Survey and Market Research Methods): 2010 – 2013.

Competitive Research Funding

Chief Investigator, Australian Research Council (ARC) Linkage grant on Handling Missing Data in Complex Household Surveys, 2007 – 2010.

Chief Investigator of a project on Sampling for Subpopulations in Household Surveys with Application to Maori and Pacific Sampling, July 2007 – June 2008. This NZ\$69,100 project was funded by the Statistics New Zealand Official Statistics Research Fund.

Investigator on “The role of households, neighbourhoods and networks in social statistics”, funded by a 2008 – 2010 International Social Sciences Collaboration linkage grant between the ARC and the UK Economic and Social Research Council.

Articles in Peer-Reviewed Journals

1. Clark, R.G. and Barr, M. (2018). A blended link approach to relative risk regression. *Statistical Methods in Medical Research*: forthcoming.
<https://doi.org/10.1177/0962280217698174>
2. Au, J., Youngentob, K.N., Clark, R.G., Phillips, R. and Foley, W.J. (2017). Bark chewing reveals a nutrient limitation of leaves for a specialist folivore. *Journal of Mammalogy*, 98(4), pp.1185-1192.
3. Clark, R.G., Kokic, P. and Smith, P.A. (2017). A comparison of two robust estimation methods for business surveys. *International Statistical Review*, 85(2), pp.270-289.
4. Clark, R.G. (2016). Statistical efficiency in distance sampling. *PLoS One* 11(3): e0149298. doi:10.1371/journal.pone.0149298.
5. Molefe, W. and Clark, R.G. (2015). Model-assisted optimal allocation for planned domains using composite estimation. *Survey Methodology*, 41(2), pp. 377-387.
6. Molefe, W., Shangodoyin, D. and Clark, R.G. (2015). An approximation to the optimal subsample allocation for small areas. *Statistics in Transition*, 16(2), pp. 163-182.
7. Lago, L.P. and Clark, R.G. (2015). Imputation of household survey data using linear mixed models. *Australian and New Zealand Journal of Statistics* 57(2), pp.169-187.
8. Steel, D.G. and Clark, R.G. (2014). Potential gains from using unit level cost information in a model-assisted framework. *Survey Methodology*, 40(2), pp.231-242.
9. Clark, R.G., Templeton, R. and McNicholas, A. (2013). Developing the design of a continuous national health survey for New Zealand. *Population Health Metrics*, 11:25.
10. Clark, R.G. (2013). Sample design using imperfect design data. *Journal of Survey Statistics and Methodology*, 1(1), pp.6-23.
11. Steel, D. G. & Clark, R.G. (2011). Conditional and unconditional models in model-assisted estimation of finite population totals. *Pakistan Journal of Statistics*, 27 (4), 529-541.
12. Clark, R.G. and Allingham, S. (2011). Robust resampling confidence intervals for empirical variograms. *Mathematical Geosciences*, 43 (2), pp.529-541.
13. Thomas, A. O., Milham, P. J., Morrison, R. J., Clark, R. G. & Alvarez, R. (2011). Oxygen exchange during the reaction of POCl₃ and water. *Australian Journal of Chemistry*, 64 (10), 1360-1365.
14. Alzoubi, L., Clark, R.G. and Steel, D.G. (2010). Adaptive Inference for Multi-Stage Survey Data. *Communications in Statistics: Simulation and Computation*, vol. 39, no. 7, pp. 1334-1350.
15. Clark, R.G. (2009). Sampling of subpopulations in two stage surveys. *Statistics in Medicine*, Vol. 28, Issue 29, pp. 3697-3717.
16. Clark, R.G. and Chambers, R.L. (2008). Adaptive calibration for prediction of finite population totals. *Survey Methodology*, vol. 34, no. 2, pp. 163-172.
17. Clark, R.G. and Strevens, T.C. (2008). Design and analysis of clustered, unmatched resource selection studies. *Journal of the Royal Statistical Society Series C*, vol. 57, no. 5, pp. 535-551.

18. Steel, D.G. and Clark, R.G. (2007). Person-level and household-level regression estimation in household surveys. *Survey Methodology* vol. 33, pp.51-60.
19. Clark, R.G. and Steel, D.G. (2007). Sampling within households in household surveys. *Journal of the Royal Statistical Society Series A*, vol. 170, part 1, pp. 63-82.
20. Clark, R.G. and Steel, D.G. (2002). The use of households as sampling units. *International Statistical Review* vol. 70, no.2, pp. 289-314.
21. Clark, R.G. and Steel, D.G. (2000). Optimal allocation to strata and stages with simple additional constraints. *The Statistician* vol. 49, pp.197-207.
22. Smyth, G.K, Chakraborty, S., Clark, R.G. and Pettit, A.N. (1992). A stochastic model for anthracnose development in *stylosanthes scabra*. *Phytopathology* 82: 1267-1272.

Books and Book Chapters

Clark, R.G. and Templeton, R.T. (2014). Sampling the Māori Population using Proxy Screening, the Electoral Roll and Disproportionate Sampling in the New Zealand Health Survey. *Chapter 22 of Hard to Survey Populations*, Cambridge University Press: Cambridge.

Chambers, R.L. and Clark, R.G. (2012). ***An Introduction to Model-Based Survey Sampling***. Oxford University Press: Oxford.

Open Source Packages in the R Statistical Environment

surveyoutliers. Calculates cutoffs for one-sided winsorization of outliers in surveys.

blendedLink. For use in relative risk regression in biostatistics.

distance.sample.size. Calculates the required study size for distance sampling in ecology.

All available on https://cran.r-project.org/web/packages/available_packages_by_name.