

# Nicholas Tierney

PhD Candidate in Statistics at QUT

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## Education

- Postgraduate** 2013–17 **PhD Statistics**, Queensland University of Technology. Supervisors: Kerrie Mengersen, Fiona Harden, Maurice Harden.  
Award **APA (\$24,500 Annually for 4 years) ; IDTC Top Up (\$10,000 Annually for 4 years) .**  
Research Research covers model-based exploration methods of missing data, Bayesian longitudinal modelling of individual and group health in a mining site, optimal placement of Automatic Electronic Defibrillators (AEDs), modelling geospatial cardiac risk, and the production of R packages to facilitate research impact.
- Undergraduate** 2008–12 **B. PsychSc (Honours)**, University of Queensland. Supervisor: Philip Grove.  
Research Conducted psychophysical research on whether sharpness of a leading edge in a 3D environment improves under specific scenarios of monocular occlusion in the thesis: "How Sharp is Sharp?: The Effect of Monocular Texture on Enhancing Sharpness." **Awarded first class honours.**  
2010 **Exchange semester**, McGill University. Studied History of Personality Theory, Abnormal Psychology, Psychology of Interpersonal Relationships, Ethics, and Intermediate French.

## Teaching

- SEB113** 2015 "Statistical Methods for Science". Developed computer lab material with RMarkdown, produced instructional videos, and taught workshops.
- Awards** 2015 **Overall University Winner** "The Joy of Stats" Sessional Teaching and Reflection Showcase (STARS) (Presentation).  
2015 **Vice-Chancellor's Performance Award** for innovation in teaching in SEB113 (\$2,500).

## Publications

- Papers** 2015 "Using Decision Trees to Understand Structure in Missing Data." **Tierney, N.J.**, Mengersen, K., Harden, F., Harden M. *BMJ Open* 5 (6). doi:10.1136/bmjopen-2014-007450.  
2016 "S3 Methods: A Simple Guide." **Tierney, N.J.** *The R Journal*. **Submitted.**  
2016 "Bayesian Approaches to Modelling Occupational Health." **Tierney, N.J.** Mengersen, K., Harden, F., Harden, M. *Occupational and Environmental Medicine*. **In Preparation.**  
2016 "Optimising placement of AEDs in cases of geographic variability", **Tierney, N.J.**, Mira, A., Jost, Mengersen, K.L., Aurrichio, A. *Circulation*. **In Preparation.**

## Projects

- R packages** 2016–  
2016– **copertura**: Tools for solving the Maximal Covering Location Problem in R.  
2016– **treezy**: Tools for working with decision trees in R.  
2015– **visdat**: Visualise a whole dataframe at once.  
2014– **ggmissing**: Extend ggplot to account for missing data.  
2014– **neato**: Miscellaneous Utility functions in R.
- Blog** 2013– I maintain a personal blog, [njtierney.com](#), to share code and statistics, and to engage in dialogue with the statistics and r-programming communities.

## Conference Items

- Contributed Talks** 2016 "Be a Hawk Not a Turkey: How A Bird's Eye View can Streamline Data Analysis", **Tierney, N.J.** Workshop Organised by Monash Business Analytics Team (WOMBAT). Melbourne Zoo, Melbourne, Australia.  
2014 **Tierney, N.J.**, Mengersen, K., Pitchforth, J. "Understanding Missing Data: The Use of Classification and Regression Trees, and Boosted Regression Trees", ASC / IMS Meeting. Sydney, Australia.
- Posters** 2016 "Bayesian Approachs in Occupational Health Surveillance" **Tierney, N.J.**, Mengersen, K., Clifford, S., Drovandi, C., Harden, F., Harden, M. World Meeting for the International Society for Bayesian Analysis.  
2015 "The Sharpest Tool in the Shed" **Tierney, N.J.**, Mengersen, K., Harden, F., Harden, M. Bayes on the Beach.  
2015 "Integrating Occupational Hygiene, Medicine and Engineering in a Mining Context." Harden, M., Steer, C., Harden, F., Butler, G., Mengersen, K., **Tierney, N.J.**, *Ann. Occup. Hyg.*, Vol. 59, No. Supplement 1, 1–47 doi:10.1093/annhyg/meu119. (Peer Reviewed Poster).  
2014 "Missingness, Mixtures, and Multiple Imputation" **Tierney, N.J.**, Mengersen, K., Harden, F., Harden, M. Bayes on the Beach.

**Tutorial** 2015 Developing Bayesian Models for Ranking Academic Papers, Bayes on the Beach, Gold Coast, Australia.

## Presentations

**Invited Talks** 2016 "Interactive Maps in R: Getting a lay of the land", **Nicholas Tierney**, Gates Cambridge group, Cambridge University, UK.  
2016 "Data Mining Mining Data: Statistical Approaches in Occupational Health for a Mining Site" **Nicholas Tierney**, Università della Svizzera italiana Lugano, Switzerland.

## Professional Experience

**Invited Academic** 2016 Inter-Disciplinary Institute of Data Science at Università della Svizzera italiana (USI), Lugano, Switzerland, June 18 - July 9. Collaboration with Professor Antonietta Mira of USI and Professor Angelo Auricchio of the Center for Computational Medicine in Cardiology (CCMC) on optimising placement of Automatic Electronic Defibrillators (AEDs) in Switzerland.

**Invited speaker** 2016 Gates-Cambridge Group, Cambridge University, England. July 20 - July 23. Presented a 2-hour workshop on using R for the exploration and visualisation of geospatial data.

**Science Communication** 2016 "Science Meets Parliament", Canberra, Australia, **fully sponsored travel** provided by SSAI.  
2013 "Statistics for Journalists", Australian Science Media Centre Brisbane, Australia.

**rOpenSci** 2016 Organiser of the first rOpenSci Unconference in Australia.

**SSAI** 2013-2013-16 SSAI Assistant Chair of Biostatistics.  
SSAI Young Statisticians Representative for Queensland.

**BRAG** 2014 Meeting Chair for Bayesian Research and Applications Group (BRAG), QUT.

**Talks** 2016 "Reproducible Research: Now you can, too! Reproducible Research: Now you can, too!", BURGr Meetup, Brisbane, Australia.  
2013-16 Industry Doctoral Training Centre (IDTC) Student Conferences, Various.  
2013-16 Bayesian Research and Applications Group (BRAG) Research Meetings, Various.

**Technical skills**

R	LaTeX	Bayesian Statistics
STATA	GitHub	Data visualisation
JAGS	Machine Learning	Reproducible Reporting

## Social Activities

**Climbing** 2014-2012, 14 Master of Ceremonies at State and National Climbing Championships.  
2014 Executive Committee of the University of Queensland Mountain Club (UQMC).  
2015-16 Appointed Honourary Life Member of the UQMC.  
Archivist and Magazine Editor of the UQMC.

**Social Justice** 2007-09 Volunteer at Edmund Rice Camps.

## References

PhD **Professor Kerrie Mengersen** k.mengersen@qut.edu.au  
PhD **Dr. Fiona Harden** fiona.harden@qut.edu.au  
Honours **Dr. Phillip Grove** p.grove@uq.edu.au  
Teaching **Dr. Sam Clifford** samuel.clifford@qut.edu.au