Nicholas Tierney

Research Fellow at Monash University

nicholas.tierney@gmail.com | ⦿ njtierney | 🐦 nj_tierney

Education

Postgraduate 2013-18 | **PhD (Statistics)**, Queensland University of Technology. Supervisor: Kerrie Mengersen.
| 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

R packages 2015- | **naniar:** Extend ggplot to account for missing data.
| 2016- | **visdat:** Visualise a whole dataframe at once.
| 2016- | **maxcovr:** Tools for solving the Maximal Covering Location Problem in R.
| 2016- | **treezy:** Tools for working with decision trees in R.

Papers 2018 | **Tierney, NJ.** Cook, D. "Expanding tidy data principles to facilitate missing data exploration, visualization and assessment of imputations." Journal of Computational and Graphical Statistics. **Submitted** [Pre-print]
| 2018 | "Bayesian Approaches to Modelling Occupational Health." **Tierney, N.J.** Clifford, S., Drovandi, C., Mengersen, K. BMJ Open. **Under Review**.
| 2018 | "Evaluating health facility access using Bayesian spatial models and location analysis methods", **Tierney, N.J.**, Mira, A., Reinhold H.J., Arbia, G., Clifford, S., Moccetti, T., Auricchio A., Mengersen, K.L.. PLoS ONE. **Under Review**.
| 2018 | **Tierney, NJ.**, Reinhold, J., Mira, A., Weiser, M., Burkart, R., Benvenuti, C., Aurrichio, A. "Novel relocation methods for automatic external defibrillator improve out-of-hospital cardiac arrest coverage under limited resources" Resuscitation , Volume 125 , 83 - 89. doi: 10.1016/j.resuscitation.2018.01.055
| 2017 | **Tierney, Nicholas J.** "visdat: Visualising Whole Data Frames", The Journal of Open Source Software 2 (16) doi: 10.21105/joss.00355
| 2016 | "Visualisation and statistical modelling techniques for the management of inventory stock levels" Sweatman, W.L., McGree, J., Carstens, C.J., Foster, K.J., Liu, S., **Tierney, N.J.,** Trednick, E., Zaitouny, A. ANZIAM Journal 57, 130-162.
| 2016 | "S3 Methods: A Simple Guide." **Tierney, N.J.** arxiv.
| 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.

Conference Items

Talks 2018 | **RUCK: R Users Conference Korea (Invited Keynote speaker)** "Empowering people with community, software, and peer review".
| 2018 | **ISCBASC** "Now you see it? Now you don't? The role of graphics in identifying MCMC convergence", Melbourne, Australia HTML PDF
| 2018ovr | **UseR!** "Find the best locations for facilities using ", Brisbane, Australia Slides YouTube
| 2017 | **UseR!** Narnia: Data structures and functions for consistent exploration of missing data, Brussels, Belgium
| 2017 | **Angletr** "Narnia: Data structures and functions for consistent exploration of missing data" Anglet, France
| 2017 | **Wombat / MeDaScin** Tidy Approaches to Missing Data, Melbourne, Australia
| 2016 | **Gates Cambridge group** "Interactive Maps in R: Getting a lay of the land", **Nicholas Tierney**, Cambridge University, UK.

2016	**Università della Svizzera italiana Lugano** "Data Mining Mining Data: Statistical Approaches in Occupational Health for a Mining Site" **Nicholas Tierney**.
2016	**Workshop Organised by Monash Business Analytics Team (WOMBAT)** "Be a Hawk Not a Turkey: How A Bird's Eye View can Streamline Data Analysis", **Tierney, N.J.** Melbourne Zoo, Melbourne, Australia.
2014	**ASC / IMS Meeting Tierney, N.J.**, Mengersen, K., Pitchforth, J. "Understanding Missing Data: The Use of Classification and Regression Trees, and Boosted Regression Trees", Sydney, Australia.

Posters

2018	"Tidy Principles for Missing Data Exploration using " **Tierney, NJ.** rstudioconf18, San Diego, USA. PDF
2017	"Now you see it? Now you don't? The role of graphics in identifying MCMC convergence" **Tierney, NJ.**, Cook, D, McBain, M. Bayes on the Beach, Gold Coast, Australia. PDF
2016	"Bayesian Approaches 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.

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.

Tutorial

2018	Missing Data Imputations, UseR!2018, Brisbane, Australia.
2017	Reproducible Reporting Using RMarkdown and GitHub, Angletr, Anglet, France.
2015	Developing Bayesian Models for Ranking Academic Papers, Bayes on the Beach, Gold Coast, Australia.

Professional Experience

Invited Academic

2018	Berkeley Institute of Data Science (BIDS), Berkeley, California, USA, Feb 5 - Feb 9. Collaboration with Dr Karthik Ram on best practices for publishing data sources, and current technology issues in modern data science.
2017	Inter-Disciplinary Institute of Data Science at Università della Svizzera italiana (USI), Lugano, Switzerland, July 10 - July 14. Continuing 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.
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

2018	Genentech, California, USA. February 15. Presented a talk "Why is that missing, and what can we do about it? Tools for missing data and beyond".
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 SSA.
2013	"Statistics for Journalists", Australian Science Media Centre Brisbane, Australia.

Conferences

2018	Principal Organiser of the third rOpenSci Unconference in Australia.
2018	Member of the Organising Committee for UseR!2018, Brisbane, Australia.
2017	Principal Organiser of the second rOpenSci Unconference in Australia.
2016	Principal Organiser of the first rOpenSci Unconference in Australia.

Statistics Society of Australia

2017-	SSA General Committee Member for Victorian Branch of SSA.
2013-16	SSA Assistant Chair of Biostatistics.
2013-16	SSA Young Statisticians Representative for Queensland.

Meeting Chair

2017-	Meeting Chair for Non-Uniform Monash Business Analytics Team (NUMBAT), Monash.
2014	Meeting Chair for Bayesian Research and Applications Group (BRAG), QUT.

Talks (Outside of conferences)

2018	rOpenSci: Transforming science through open data and software
2018	Intro to Missing Data: DMAC
2018	Rethinking teaching statistical computing
2018	Intro to missing data visualistion
2018	rOpenSci ozunconf: Building communities to transform science

2018	Why is that missing, and what can we do about it? Tools for missing data and beyond, Genentech, San Francisco, USA
2018	Oh no, why is that missing? Practical tools for missing data, BARUGS, San Francisco, USA
2017	≥ 5 things you (maybe) didn't know about the world of R and statistics
2017	**Melbourne Maths and Science Meetup** Missing Data Challenges, Melbourne, Australia
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

Extra-Curricular

Climbing

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

Social Justice

2007-09	Volunteer at Edmund Rice Camps.

References

Available upon request