

Nicholas Tierney

LECTURER

Department of Econometrics and Business Statistics

✉ nicholas.tierney@gmail.com | 🏠 njtierney.com | 📷 [njtierney](https://www.instagram.com/njtierney) | 🐦 [nj_tierney](https://twitter.com/nj_tierney)

Education

Ph.D. Statistics

QUEENSLAND UNIVERSITY OF TECHNOLOGY

- Thesis Title: "Statistical Approaches to Revealing Structure in Complex Health Data"
- Primary Supervisor: Professor Kerrie Mengersen

Brisbane, QLD, Australia

2013 - 2018

Bachelor of Psychological Science (Honours)

UNIVERSITY OF QUEENSLAND

- Thesis Title: "How sharp is sharp? The effect of monocular texture on enhancing sharpness"
- Primary Supervisor: Dr. Philip Grove

Brisbane, QLD, Australia

2008 - 2012

Software

brlgar

TOOLS TO BROWSE OVER LONGITUDINAL DATA GRAPHICALLY AND ANALYTICALLY. EXTENDS GGPLOT2, TSIBBLE, AND FEASTS

- 89 stars

GitHub

2019

syn

A ZERO DEPENDENCY R PACKAGE THAT LISTS SYNONYMS AND ANTONYMS.

- 43 stars
- 4,205 downloads

CRAN

2018

visdat

PRELIMINARY EXPLORATORY VISUALISATION OF DATA

- 356 stars
- 233,584 downloads

CRAN

2017

naniar

TIDY DATA STRUCTURES, SUMMARIES, AND VISUALISATIONS FOR MISSING DATA. EXTENDS GGPLOT2 AND DPLYR.

- 533 stars
- 242,809 downloads

CRAN

2017

mmcc

FAST AND TIDY METHODS FOR SUMMARISING MCMC CHAINS USING DATA.TABLE. EXTENDS BROOM

- 20 stars

GitHub

2016

maxcovr

TOOLS FOR LOCATION ANALYSIS AND SOLVING THE MAXIMAL COVERAGE LOCATION PROBLEM USING C++

- 31 stars

GitHub

2016

broomstick

CONVERT DECISION TREE OBJECTS INTO TIDY DATA FRAMES. EXTENDS BROOM

- 26 stars

GitHub

2016

Employment

Lecturer

MONASH UNIVERSITY

- Taught ETC1010, developed assessment and lectures on introduction to data analysis

Melbourne, VIC, AUS

2019 - Current

Research Fellow

MONASH UNIVERSITY

- Created {visdat} and {naniar} packages to explore data

Melbourne, VIC, AUS

2017 - 2019

R Consortium

A UNIFIED PLATFORM FOR MISSING VALUES METHODS AND WORKFLOWS

- Developed CRAN Task view and platform for sharing missing data methods
- Funding amount: \$20,000 USD
- Co-investigators: Josse, Julie, Nathalie Vialenxi, Imke Mayer

Global

2018-2019

ACEMS International Mobility Programme

MCMC DIAGNOSTICS & RESEARCH IMPACT

- Visited Johns Hopkins University and UC Berkeley to discuss MCMC diagnostics and research impact
- Funding amount: \$10,000 AU

Australia - USA

2019

Government Scholarship

AUSTRALIAN POSTGRADUATE AWARD

- Funding amount: \$98,000

Brisbane, QLD, Australia

2013-2017

Industry Scholarship

INDUSTRY DOCTORAL TRAINING CENTRE TOP UP

- Funding amount: \$40,000

Brisbane, QLD, Australia

2013-2017

Invited Academic

Dr. Karthik Ram

BERKELEY INSTITUTE OF DATA SCIENCE (BIDS)

- Visited annually for 1-3 weeks
- Develop best practices for publishing data sources
- Identify current technology issues in modern data science

Berkeley, CA, USA

2018 - 2020

Prof. Roger Peng

JOHNS HOPKINS BLOOMBERG SCHOOL OF PUBLIC HEALTH

- Collaborate on understanding and measuring MCMC convergence.
- Develop MCMC diagnostics

Baltimore, MD, USA

2019

Prof. Antonietta Mira and Professor Angelo Auricchio

INTER-DISCIPLINARY INSTITUTE OF DATA SCIENCE AT UNIVERSITÀ DELLA SVIZZERA ITALIANA (USI)

- Develop methods for optimal placement of Automatic Electronic Defibrillators (AEDs) in Switzerland

Lugano, Ticino, Switzerland

2016 - 2017

Published Articles

Comment On: Moving Sport and Exercise Science Forward: A Call for the Adoption of More Transparent Research Practices

BORG, DAVID N. AND BON, JOSHUA J. AND SAINANI, KRISTIN L. AND BAGULEY, BRENTON J. AND TIERNEY, NICHOLAS J. AND DROVANDI, CHRISTOPHER

Sports Medicine

2020

A Bayesian Spatiotemporal Statistical Analysis of Out-of-Hospital Cardiac Arrests

PELUSO, STEFANO AND MIRA, ANTONIETTA AND RUE, HÅVARD AND TIERNEY, NICHOLAS J. AND BENVENUTI, CLAUDIO AND CIANELLA, ROBERTO AND CAPUTO, MARIA LUCE AND AURICCHIO, ANGELO

Biometrical Journal

2020

An Introduction to Software Tools, Data, and Services for Geospatial Analysis of Stroke Services

PADGHAM, MARK AND BOEING, GEOFF AND COOLEY, DAVID AND TIERNEY, NICHOLAS J. AND SUMNER, MICHAEL AND PHAN, THANH G. AND BEARE, RICHARD

Frontiers in Neurology

2019

Evaluating Health Facility Access using Bayesian Spatial Models and Location Analysis Methods

TIERNEY, NICHOLAS J. AND MIRA, ANTONIETTA AND REINHOLD, H. JOST AND ARBIA, GIUSEPPE AND CLIFFORD, SAMUEL AND AURICCHIO, ANGELO AND MOCCETTI, TIZIANO AND PELUSO, STEFANO AND MENGENSEN, KERRIE L.

PLOS ONE

2019

Novel Relocation Methods for Automatic External Defibrillator Improve Out-of-Hospital Cardiac Arrest Coverage under Limited Resources

TIERNEY, NICHOLAS J. AND REINHOLD, H. JOST AND MIRA, ANTONIETTA AND WEISER, MARTIN AND BURKART, ROMAN AND
BENVENUTI, CLAUDIO AND AURICCHIO, ANGELO

Resuscitation

2018

Visdat: Visualising Whole Data Frames

TIERNEY, NICHOLAS J.

The Journal of Open Source
Software

2017

Visualisation and Statistical Modelling Techniques for the Management of Inventory Stock Levels

SWEATMAN, WINSTON L., AND MCGREE, JAMES AND CARSTENS, C. JACOBIE AND FOSTER, KYLIE J. AND LIU, SHEN AND
TIERNEY, NICHOLAS J. AND TREDENICK, ELOISE AND ZAITOUNY, AYHAM

ANZIAM

2016

Using Decision Trees to Understand Structure in Missing Data

TIERNEY, NICHOLAS J. AND HARDEN, FIONA A. AND HARDEN, MAURICE J.

BMJ Open

2015

Book Chapters

Bayesian Modelling to Assist Inference on Health Outcomes in Occupational Health Surveillance

TIERNEY, NICHOLAS J. AND CLIFFORD, SAMUEL AND DROVANDI, CHRISTOPHER C. AND MENGENSEN, KERRIE L.

Case Studies in Applied Bayesian
Data Science

2020

Statistical Methods for Hospital Monitoring

MORTON, ANTHONY AND WHITBY, MICHAEL AND TIERNEY, NICHOLAS J. AND SIBANDA, NOKUTHABA AND MENGENSEN, KERRIE

Wiley StatsRef: Statistics Reference
Online

2016

Preprints

When to Impute? Imputation Before and During Cross-Validation

JAEGER, BYRON C. AND TIERNEY, NICHOLAS J. AND SIMON, NOAH R.

<http://arxiv.org/abs/2010.00718>

2020

Expanding Tidy Data Principles to Facilitate Missing Data Exploration, Visualization and Assessment of Imputations

TIERNEY, NICHOLAS J. AND COOK, DIANNE H.

<http://arxiv.org/abs/1809.02264>

2020

A Realistic Guide to Making Data Available Alongside Code to Improve Reproducibility

TIERNEY, NICHOLAS J. AND RAM, KARTHIK

<http://arxiv.org/abs/2002.11626>

2020

A Simple Guide to S3 Methods

TIERNEY, NICHOLAS J.

<http://arxiv.org/abs/1608.07161>

2016

Papers in Preparation

Brolgar: BRowse Over Longitudinal Data Graphically and Analytically in R

NICHOLAS J. TIERNEY, DIANNE COOK, TANIA PRVAN

R Journal

2020

Current Practice in Football Research and Recommendations for Reporting Missingness

DAVID BORG, NICHOLAS J. TIERNEY, ROBBIE NGUYEN

Science and Medicine in Football

2020

What We See in Rainbows: Do Different Colour Palettes Change Weather Maps Interpretation?

NICHOLAS J. TIERNEY, LAUREN KENNEDY, ADAM SPARKS

TBD

2021

The Effect of Fire Frequency on Insectivorous Bats and their Habitat in the Monsoonal Woodlands of Cape York Peninsula, Australia.

JULIE BROKEN-BROW, NICHOLAS J. TIERNEY, SANDRA PENMAN, KYLE N. ARMSTRONG, AND LUKE K.-P. LEUNG

Diversity and Distributions

2021

Presentations

The Use of Colour in Graphics: A Journey Through the Body & Mind to the Screen

MONASH DATA FLUENCY (INVITED SEMINAR)

Online

2020-06-26

Data! Data! Data!

UNIVERSITY OF WASHINGTON (INVITED SEMINAR)

Seattle, WA, USA

2020-02-14

Making Better Spaghetti

RSTUDIO::CONF2020 (INVITED SPEAKER)

San Francisco, CA, USA

2020-01-29

Exploring and Understanding the Individual Experience from Longitudinal Data, or...How to Make Better Spaghetti (Plots)

OZVIS 2019 (KEYNOTE SPEAKER)

Brisbane, QLD, Australia

2019-11-21

Exploring and Understanding the Individual Experience from Longitudinal Data, or...How to Make Better Spaghetti (Plots)

AUSTRALIA NATIONAL UNIVERSITY (INVITED SEMINAR)

Canberra, ACT, Australia

2019-11-15

Are We There Yet? Testing the Effectiveness of Graphics as MCMC Diagnostics

JOHNS HOPKINS BLOOMBERG SCHOOL OF PUBLIC HEALTH (INVITED SEMINAR)

Baltimore, MD, USA

2019-01-09

Prior to 2019, I have delivered a keynote presentation in Seoul, South Korea, and invited seminars and talks in Australia, USA, Switzerland, France, Belgium, and England.

Awards

ACEMS Impact and Engagement Award

FOR ACTIVELY TRANSLATING RESEARCH FINDINGS TO APPLICATIONS, USE, AND UPTAKE OUTSIDE OF ACADEMIA (\$1,000)

Australia

2019

EJC Pitman Prize (Runner Up)

THE STATISTICAL SOCIETY OF AUSTRALIA

Melbourne, VIC, Australia

2018

Thesis nominated for University Doctoral Outstanding Thesis Award

PHD THESIS EXAMINATION

Brisbane, QLD, Australia

2017

Vice-Chancellor's Performance Award

INNOVATION IN TEACHING IN SEB113 (\$7,500)

Brisbane, QLD, Australia

2015

First Place for talk: "The Joy of Stats"

SESSIONAL TEACHING AND REFLECTION SHOWCASE (STARS)

Brisbane, QLD, Australia

2015

Service

I am an active member of the statistics and open source software communities. I recently joined the R Journal as an Associate Editor, served on the organising committee of UseR! 2018 in Brisbane, and was the founding and principal organiser of the annual rOpenSci Ozunconference, from 2016 - 2018, and assistant organiser in 2019. I have been the organising chair of two university research groups, the Non-Uniform Monash Business Analytics Team (NUMBAT) group at Monash, and the Bayesian Research and Applications Group (BRAG) at Queensland University of Technology. I have been a member of the Statistical Society of Australia since 2013, serving as young statistician representative of Queensland, and assistant chair of biostatistics (2013-2016), and a general committee member of the Victoria branch (2017 - 2019).

Teaching

Lecturer

MONASH UNIVERSITY

Melbourne, VIC, Australia

2019 - 2020

- Developed assessment and lectures for ETC1010, introduction to data analysis

Teaching Assistant

QUEENSLAND UNIVERSITY OF TECHNOLOGY

Brisbane, QLD, Australia

2015

- Tutor for course SEB113, an introductory course on statistics

Lab Content Creator

QUEENSLAND UNIVERSITY OF TECHNOLOGY

Brisbane, QLD, Australia

2015

- Created award-winning practical lab content for course SEB113

Workshops

R Markdown for Scientists

RMD4SCI.NJTIERNEY.COM

Global

2018 -

- Focussing on scientists needs (workflow, citations, references)
- Delivered 6 times in Melbourne, Canberra, and Seattle

Building R Packages and using git and GitHub

ROPENSCI OZUNCONFERENCE

Australia

2017 - 2019

- Designed for absolute beginners
- Delivered 3 times, with Prof. Roger Peng, and Dr. Saras Windecker

Software Carpentry Instructor Trainer

THE CARPENTRIES

Global

2018 - 2019

- Reaching best practices on how to teach software coding to other instructors

Instructor

DATA CAMP

Global

2018

- Developed online course on Handling Missing Data. Produced tutorials and instructional videos

Missing Data Imputations

USER!2018

Brisbane, QLD, Australia

2018

- Joint course with Prof. Julie Josse, covering visualising, exploring, and imputing missing data.

Reproducible Reporting Using RMarkdown and GitHub

ANGELTR R CONFERENCE

Anglet, France

2017

- Course teaching basics of Rmarkdown and GitHub

Developing Bayesian Models for Ranking Academic Papers

BAYES ON THE BEACH

Gold coast, QLD, Australia

2015

- Moderated discussion on Bayesian approaches to ranking papers to account for the number of years since publishing