Rex Parsons

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 GitHub: RWParsons LinkedIn: rexwp

Education

Queensland University of Technology (QUT)   **2020–Present**
Biostatistics PhD
Title: High dimensional data for predicting inpatient falls.
Supervisors: Dr Susanna Cramb, Prof Steven McPhail and Dr Ahmad Abdel-hafez

University of Newcastle   **2019–2020**
Medical Statistics MMedStat 6.88/7 GPA

University of Queensland   **2015–2017**
Biomedical Science BSc and Honours (Neuroscience)
Title: The Role of Melatonin on Hippocampal Rhythmicity.
Supervisors: Dr Oliver Rawashdeh and Dr Prasad Chunduri.

Employment

Senior Research Assistant   **Oct 2021–Present**
Centre for Data Science (QUT)   *Brisbane, Australia*
- Spatial data analysis with R and ArcGIS to understand inequity in accessibility to acute and rehabilitation care for traumatic brain injury, presented as a shiny app.
- Development of an R-package (DSSP) for fitting Bayesian spatial models with direct sampling.

Senior Research Assistant   **Nov 2020–Feb 2022**
Australian Centre for Health Services Innovation (QUT)   *Brisbane, Australia*
Statistical analysis for:
- Health economics research for Department of Veteran affairs.
- Risk factors associated with COVID-19 with the COVID Critical Research Group.
- Clinical trial analysis and risk model implementation projects with Metro North Health Hospital and Health Service.

Research & Development Scientist   **Mar 2020–Aug 2020**
Ellume   *Brisbane, Australia*
- Immunoassay and algorithm development for SARS-CoV-2 Serology rapid diagnostic test.
- Redesigned the algorithm development workflow which improved generalisability and drastically reduced the time required to optimise.
- Algorithm developed was used for FDA application for serological diagnostic and was the best performing diagnostic test approved by FDA.

Healthcare Data Analyst   **Jun 2019–Mar 2020**
City Fertility   *Brisbane, Australia*
- Dashboard development using shiny and direct odbc for up-to-date analytics on KPIs.
- Streamlining monthly reporting processes for marketing and services given using R.
- Data acquisition, cleaning and statistical analysis for clinician-led research projects.
- Clinical prediction model development for In-Vitro-Fertilisation treatment success.

Project Coordinator   **Mar 2018–Jun 2019**
UnitingCare Medical Imaging   *Brisbane, Australia*
- Occupational lung disease and radiology research.
- Questionnaire development with Qualtrics.
- Data analysis and visualisations.
- Applying and reporting to funding body.

Research Assistant   **Jan 2016–Mar 2018**
Ellume   *Brisbane, Australia*
- Immunoassay development for influenza virus and Group A streptococcus rapid diagnostic test.
- Worked in a team to rapidly iterate and develop medical devices.

Technical Skills

Proficient: R, Shiny, Data Analysis and Visualisation, Statistical Modelling, Functional Programming
Competent: Python, SQL, Machine Learning, Git, Object-Oriented Programming
Novice: Dask, PyTorch

Statistical Software Development

`simMetric`   **CRAN Jan 2022**
  – An R package that provides several useful metrics (and their Monte Carlo standard errors) for the assessment of statistical methods in simulation studies.
  – This allows for easy integration with other simulation study frameworks and the tidyverse-style workflow.

`circacompare`   **CRAN Feb 2021**
  – An R package that allows users to analyse circadian datasets using nonlinear regression models.
  – Documented with a vignette; also available as a shiny app and in python

Teaching

Queensland University of Technology   **Brisbane, Australia**
  – MXN500: Statistical Data Analysis (Sessional Tutor)   Semester 1, 2021
  – SEB113: Quantitative Methods in Science (Sessional Tutor)   Semester 2, 2021
  – PUN108: Clinical Informatics for Intelligent Healthcare (Guest Lecturer)   Semester 2, 2021

Selected Papers

1. *LVM de Assis, L Harder, José Thalles Lacerda*, **R Parsons**, *[5 authors], H Oster*   **bioRxiv (2022)**
   Rewiring of liver diurnal transcriptome rhythms by triiodothyronine (T3) supplementation.

2. **R Parsons**, *SM Cramb SM McPhail*   **BMJ Open (2021)**
   Clinical prediction models for hospital falls: a scoping review protocol.

3. *Bassi GL, [8 authors]*, **R Parsons**, *[20 authors], Fraser JF*   **Crit Care Explor (2021)**
   Risk Factors for 28-Day in-Hospital Mortality in Mechanically Ventilated Patients with COVID-19: An International Cohort Study.

4. *GH Goh, PJ Mark, D Blache, D Binks*, **R Parsons**, *O Rawashdeh, SK Maloney*   **J Therm Biol (2021)**
   Diet-altered body temperature rhythms are associated with altered rhythms of clock gene expression in peripheral tissues in vivo.

5. **R Parsons**, *R Parsons, N Garner, H Oster, O Rawashdeh*   **Bioinformatics (2020)**
   CircaCompare: a method to estimate and statistically support differences in mesor, amplitude and phase, between circadian rhythms

6. **R Parsons**, *K Newbigin, D Deller, R Edwards, R McBean*   **Respirology (2019)**
   Stonemasons with silicosis: Preliminary findings and a warning message from Australia.

7. *C Haran, R McBean*, **R Parsons**, *D Wong*   **J Med Imaging Radiat Oncol (2019)**
   Five-year trends of bone scan and prostate-specific membrane antigen positron emission tomography utilization in prostate cancer: A retrospective review in a private centre.

8. *R McBean, B O'Kane*, **R Parsons**, *D Wong*   **J Med Imaging Radiat Oncol (2019)**
   Lu177-PSMA therapy for men with advanced prostate cancer: Initial 18 months experience at a single Australian tertiary institution.

Funding and Awards

1. SuperHERO award winner for outstanding engagement/collaboration   **(2021)**.
2. AWS Activate Winner of the Queensland AI Hub Medical Datathon and $25,000 AWS credit   **(2020)**.
   Solution: A deep learning approach to rapid assessment and triage of Chest-X-rays.
3. Digital Health CRC Industry Scholarship Recipient: $45,000 p.a. for four years during PhD studies   **(2020)**.