



# Rex Parsons

Brisbane, QLD, Australia  
rex.parsons@hdr.qut.edu.au  
rwp Parsons.github.io/

 GitHub: RWP Parsons  LinkedIn: rexwp

## Education

<b>Queensland University of Technology (QUT)</b> <i>Biostatistics PhD</i> Title: High dimensional data for predicting inpatient falls. Supervisors: Dr Susanna Cramb, Prof Steven McPhail and Dr Ahmad Abdel-hafez	<b>2020–Present</b>
<b>University of Newcastle</b> <i>Medical Statistics MMedStat 6.88/7 GPA</i>	<b>2019–2020</b>
<b>University of Queensland</b> <i>Biomedical Science BSc and Honours (Neuroscience)</i> Title: The Role of Melatonin on Hippocampal Rhythmicity. Supervisors: Dr Oliver Rawashdeh and Dr Prasad Chunduri.	<b>2015–2017</b>

## Employment

<b>Senior Research Assistant</b> <i>QUT (Australian Centre for Health Services Innovation and Centre for Data Science)</i> Several roles on continual basis for a range of projects where I mostly performed statistical analyses. For each appointment, supervisor's name and brief crux of the work: <ul style="list-style-type: none"><li>– Nicole White; (1) Risk factors associated with COVID-19 with the COVID Critical Research Group.</li><li>– Nicole White; (2) Pre-post trial analysis and risk model implementation projects at large hospital network.</li><li>– Nicole White; (3) Meta-research on registered prediction model studies.</li><li>– Gentry White; Development of (DSSP), an R package for fitting Bayesian spatial models by direct sampling.</li><li>– Susanna Cramb; Spatial data analysis and visualisations with R for access to TBI care, presented as a shiny app.</li><li>– Sanjeewa Kularatna; Health economics following policy change for Department of Veteran affairs.</li></ul>	<b>Nov 2020–Present</b> <i>Brisbane, Australia</i>
<b>Research &amp; Development Scientist</b> <i>Ellume</i> <ul style="list-style-type: none"><li>– Immunoassay and algorithm development for SARS-CoV-2 Serology rapid diagnostic test.</li><li>– Redesigned the algorithm development workflow which improved generalisability and drastically reduced the time required to optimise.</li><li>– Algorithm developed was used for FDA application for serological diagnostic and was the best performing diagnostic test approved by FDA.</li></ul>	<b>Mar 2020–Aug 2020</b> <i>Brisbane, Australia</i>
<b>Healthcare Data Analyst</b> <i>City Fertility</i> <ul style="list-style-type: none"><li>– Dashboard development using shiny and direct odbc for up-to-date analytics on KPIs.</li><li>– Streamlining monthly reporting processes for marketing and services given using R.</li><li>– Data acquisition, cleaning and statistical analysis for clinician-led research projects.</li><li>– Clinical prediction model development for In-Vitro-Fertilisation treatment success.</li></ul>	<b>Jun 2019–Mar 2020</b> <i>Brisbane, Australia</i>
<b>Project Coordinator</b> <i>UnitingCare Medical Imaging</i> <ul style="list-style-type: none"><li>– Occupational lung disease and radiology research.</li><li>– Questionnaire development with Qualtrics.</li><li>– Data analysis and visualisations.</li><li>– Applying and reporting to funding body.</li></ul>	<b>Mar 2018–Jun 2019</b> <i>Brisbane, Australia</i>
<b>Research Assistant</b> <i>Ellume</i> <ul style="list-style-type: none"><li>– Immunoassay development for influenza virus and Group A streptococcus rapid diagnostic test.</li><li>– Worked in a team to rapidly iterate and develop medical devices.</li></ul>	<b>Jan 2016–Mar 2018</b> <i>Brisbane, Australia</i>

## 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

predictNMB

pkgdown site

- A wrapper R package which allows the user to quickly perform Monte Carlo simulations to estimate the cost-effectiveness of using a prediction model to assign a healthcare intervention.
- Can be used to determine whether or when a clinical prediction model or clinical decision support system may be feasible before development or implementation.

DSSP

CRAN June 2022

- An R package that allows users to fit Bayesian spatial models.
- Draws samples from the direct sampling spatial prior model which is 100-1000 times faster than a traditional MCMC scheme.

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. **R Parsons**, RD Blythe, SM Cramb, SM McPhail **Gerontology (2022)**  
*Inpatient Fall Prediction Models: A Scoping Review.*
2. R Blythe, **Parsons R**, NM White, D Cook, SM McPhail **BMJ Qual Saf (2022)**  
*A scoping review of real-time automated clinical deterioration alerts and evidence of impacts on hospitalised patient outcomes.*
3. LVM de Assis, L Harder, José Thalles Lacerda, **R Parsons**, [5 authors], H Oster **eLife (2022)**  
*Rewiring of liver diurnal transcriptome rhythms by triiodothyronine (T3) supplementation.*
4. **R Parsons**, SM Cramb, SM McPhail **BMJ Open (2021)**  
*Clinical prediction models for hospital falls: a scoping review protocol.*
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 Newbiggin, D Deller, R Edwards, R McBean **Respirology (2019)**  
*Stonemasons with silicosis: Preliminary findings and a warning message from Australia.*

## 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)