



# Rex Parsons

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

 GitHub: RWPParsons  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>Centre for Data Science (QUT)</i> <ul style="list-style-type: none"><li>– 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.</li><li>– Development of an R-package (DSSP) for fitting Bayesian spatial models with direct sampling.</li></ul>	<b>Oct 2021–Present</b> <i>Brisbane, Australia</i>
<b>Senior Research Assistant</b> <i>Australian Centre for Health Services Innovation (QUT)</i> Statistical analysis for: <ul style="list-style-type: none"><li>– Health economics research for Department of Veteran affairs.</li><li>– Risk factors associated with COVID-19 with the COVID Critical Research Group.</li><li>– Clinical trial analysis and risk model implementation projects with Metro North Health Hospital and Health Service.</li></ul>	<b>Nov 2020–Feb 2022</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

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

## Published Papers

1. *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.*
2. *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.*
3. *R Parsons, SM Cramb SM McPhail* **BMJ Open (2021)**  
*Clinical prediction models for hospital falls: a scoping review protocol.*
4. *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.*
5. *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.*
6. *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*
7. *R Parsons, K Newbigin, D Deller, R Edwards, R McBean* **Respirology (2019)**  
*Stonemasons with silicosis: Preliminary findings and a warning message from Australia.*
8. *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.*
9. **Wesley Dust Disease Research Centre.** **ACARP (2019)**  
*A Clinical, Radiological and Occupational Review of Coal Mine Dust Lung Disease in Queensland.*
10. *O Rawashdeh, R Parsons, E Maronde* **Neural Plast (2018)**  
*Clocking in time to gate memory processes: The circadian clock is part of the ins and outs of memory.*

## Conferences

- 
- |   |                       |
|---|-----------------------|
| 1. <b>Impact Makers (Brisbane, Australia)</b>   | <b>Speaker (2021)</b> |
| <i>Inpatient fall prediction models: a scoping review.</i>  |                       |
| 2. <b>Pacific Society for Reproductive Medicine (Pattaya, Thailand)</b>   | <b>Poster (2019)</b>  |
| <i>A machine learning approach to embryo selection in the context of In Vitro Fertilisation (IVF).</i>                                  |                       |
| 3. <b>Australasian Chronobiology Society (Brisbane, Australia)</b>  | <b>Speaker (2018)</b> |
| <i>A method to statistically validate observed differences between circadian rhythms.</i>   |                       |
| 4. <b>Imaging@Brisbane (Brisbane, Australia)</b>  | <b>Poster (2018)</b>  |
| <i>Novel Application of T1 and T2 Mapping on MRI Imaging to Mediastinal Masses: Internal Differentiation of a Thymoma and Lymphoma.</i> |                       |

## Awards

- 
- |  |               |
|--|---------------|
| 1. SuperHERO award winner for outstanding engagement/collaboration.                                    | <b>(2021)</b> |
| 2. AWS Activate Winner of the Queensland AI Hub Medical Datathon and \$25,000 AWS credit               | <b>(2020)</b> |
| 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. | <b>(2020)</b> |

## Grants

- 
- |  |                         |
|--|-------------------------|
| 1. <b>Emergency Medicine Foundation</b>  | <b>\$37,667 (2022)</b>  |
| <i>(Associate Investigator) Applications of a novel neurosurgical service accessibility index to improve emergency care of people sustaining a road trauma-related traumatic brain injury in Queensland.</i> |                         |
| 2. <b>ACARP and DNRME</b>  | <b>\$315,770 (2019)</b> |
| <i>A Clinical, Radiological and Occupational Review of Coal Mine Dust Lung Disease in Queensland.</i>  |                         |

## Outreach and community involvement

- 
- |   |                     |
|---|---------------------|
| – Statistics Society of Australia - QLD Branch Council member & student representative. | <b>2022–Present</b> |
| – Peer facilitator for Peers & Pizza: a regular HDR mental health and wellbeing event.  | <b>2020–Present</b> |
| – Member of AusHSI HDR working group.   | <b>2020–Present</b> |
| – Student representative on AusHSI management committee.                                | <b>2020–2022</b>    |