**CURRICULUM VITAE:**
**DISTINGUISHED PROFESSOR KERRIE MENGERSEN FAA, FASSA, QAAS**

School of Mathematical Sciences, Queensland University of Technology (QUT)
QUT Centre for Data Science
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**Background Statement**

Kerrie Mengersen graduated with a Bachelor of Arts (Honours Class 1), majoring in Mathematics (Statistics) and Computing, and a PhD in Mathematical Statistics from the University of New England, New South Wales. Her PhD thesis was on the topic of ranking and selection under the supervision of Professor Eve Bofinger, one of the pioneer female university researchers in regional Australia. Following graduation, she was recruited by Richard Tweedie to Siromath Pty Ltd, a commercial statistical consulting company, with whom she worked for two years in Sydney and Perth. This position afforded her strong experience in a wide range of statistical methods in the context of diverse applied problems. Her career since then has been characterised by a dual focus of engaging with and developing new statistical methodology motivated by, and motivating, challenging statistical applications.

In 1989 Dr Mengersen was invited to join the inaugural academic staff of Bond University. In 1990 she took up a position as Lecturer and then Senior Lecturer at Central Queensland University, and was part of the team involved in transforming the then Institute to a University. In 1993 Dr Mengersen accepted an invitation by Professor Richard Tweedie as a Visiting Associate Professor position at Colorado State University. It was during this time that she started active research in Bayesian statistics, in collaboration with Dr Tweedie, Professor Julian Besag and Dr Christian Robert. At that time, the field of modern Bayesian statistics was only just emerging. These collaborations resulted in a long-term collaboration with Dr Robert and two prestigious papers published in Statistical Science and The Annals of Statistics, with Dr Besag and Dr Tweedie, respectively. The paper with Dr Besag, Professor Peter Green and Dr David Higdon detailed innovative ways of developing complex models in a Bayesian framework and of computing them using Markov chain Monte Carlo. This was one of the first such papers in the field. The work with Dr Tweedie contributed to the very new field of Markov chain Monte Carlo theory that was emerging as an invigorating synthesis of statistical, probability and Markov chain theory. The paper provided new theory about convergence of standard Markov chain Monte Carlo algorithms and was one of the first to derive numerical results to illustrate this theory. The collaboration with Dr Robert over the past twenty-seven years has resulted in a continuous stream of co-authored publications on Bayesian mixture models and Bayesian computation. In 2014 Dr Mengersen and Dr Robert were invited editors of an issue of Statistical Science on "Big Bayes Stories". Dr Mengersen maintains a visiting Professor position at the Universit´e Paris Dauphine and Centre de Recherche en ´ Economie et Statistique – National Institute of Statistics and Economic Studies, Paris, France, with annual or biennial visits to these institutions, collaborative and co-organised research workshops, invited postgraduate courses, invited seminars, co-supervision of students and expanded collaborations with other earlier career researchers at these institutions, in particular Dr Jean-Michel Marin and Dr Judith Rousseau.

Dr Mengersen returned to Australia in 1994 and joined Queensland University of Technology as a Lecturer, then Senior Lecturer, in Statistics. Her research continued to focus on both methodological and applied statistics, with a particular interest in Bayesian approaches. It was during this time that she established her interests in mixture models and meta-analysis, with a focus on environmental and health applications. She established strong networks with researchers in the School of Public Health, introducing new statistical methods for spatial and temporal modelling of disease, in particular those potentially influenced by environmental factors. This led to an ongoing research collaboration on vector-borne diseases, in particular dengue and Ross River virus, which were emergent concerns in Australia at the time. The journal articles that were produced from this research were among the first to report on these associations, and the continuing research outputs are contributing to the development of early warning systems for health epidemics. By 2000, she had published ten substantive journal papers in statistical methodology and eleven

substantive papers related to statistical application, and led two Australian Research Council Discovery Awards on new statistical methodology for applied Bayesian analysis (with Professor Tony Pettitt) and diagnostics for Markov chains using nonlinear time series (with Dr Rodney Wolff) and three Australian Research Council Strategic Partnerships with Industry-Research and Training grants with collaborators on statistical decision support related to evidence based medicine, biomass estimation and biodiversity, totalling $837,000. Her research was presented internationally at the Bayesian Valencia Conference in Spain in 1998 and by invitation at the French Meetings of Statisticians in 1999 and 2000.

In 2001, Professor Mengersen took up a position as Professor and Chair of Statistics at the University of Newcastle, Australia. This was a demanding managerial position as the Discipline required strong rebuilding and re-engagement with the rest of the University. During this period, new collaborations were formed with colleagues from the University of Newcastle, leading to nine substantive journal articles in statistical methodology and four articles in applied fields. She was a Chief Investigator on two Australian Research Council Strategic Partnerships with Industry-Research and Training grants and four Australian Research Council Linkage grants with collaborators in environment, medicine, environmental health and genetics, and one Australian Research Council Discovery Project (sole chief investigator) on new Bayesian methodology for understanding complex systems using hidden Markov models and expert opinion, environmental, robotics and genomics applications, totalling $1,216,000. Professor Mengersen was also a chief investigator on a $3,500,000 Australian Research Council Centre of Excellence on Complex Dynamic Systems and Control, led by Professor Graham Goodwin, and served for the life of the Centre as Leader of the Complex Systems and Modelling Program. This collaboration exposed her to new research in industrial control and complex systems, with the latter becoming a major theme for applied research and industry collaboration during the last decade. Her research in these three years was presented by invitation at eleven conferences and contributed at another five conferences in Scotland, New Zealand, Spain, Czech Republic, Switzerland and USA.

Professor Mengersen was invited back to Queensland University of Technology as a Research Professor in Statistics in 2004. During this time, she has undertaken substantive leadership roles as Director of the Faculty of Science Research Centre, during which time the first Excellence Research Australia exercise was implemented, and co-founder and inaugural Director of the Collaborative Centre for Data Analysis, Modelling and Computation at Queensland University of Technology. Her research in this period has remained strongly collaborative and has retained the dual focus on statistical methodology and its application. This activity is indicated by over 400 substantive articles published in international refereed journals. Of these 400, around a third are focussed on statistical methodology and the remainder reflect substantive statistical contributions in other scientific areas, primarily in environment, health and industry.

Professor Mengersen's productivity is also reflected by her role as Chief Investigator on six Australian Research Council Discovery Projects, nineteen Australian Research Council Linkage Projects, eight Cooperative Research Centre projects and three National Health and Medical Research Council Project grants, one National Health and Medical Research Council Program grant and four international research grants totalling over $10 million She was also a Chief Investigator on an National Health and Medical Research Council Centre on reducing hospital infections, led by Professor Nick Graves, and a $4,400,000 Australian Research Council Linkage Project, 'Airports of the Future', led by Professor Prasad Yarlagadda, in which she leads the Complex Systems Program. In 2013 she was part of a team of 18 CIs across 6 universities that was awarded an ARC Centre of Excellence in Mathematical and Statistical Frontiers in Big Data, Big Models and New Insights. She is one of three Deputy Directors in the Centre, which attracted $20 million over a period of seven years. In 2014 she was a co-investigator on two successful ARC Linkage Grants with industry partners Ergon and Brisbane Airport. Professor Mengersen was announced as one of 15 new ARC Laureate Fellows for 2015. Her project, *Bayesian Learning for Decision Making in the Big Data Era*, has been awarded $2.4 million from the ARC over five years.

Professor Mengersen's research achievement has been showcased by over forty invited and keynote presentations in the past ten years at conferences in Indonesia, China, France, Canada, United Kingdom, Morocco, Malaysia, Switzerland, Italy, Hong Kong, India, New Zealand, Spain, Turkey, Mexico, Singapore, Thailand and Australia, and many contributed presentations at national and international conferences. Through these, she has established numerous international research collaborations, resulting in reciprocal

visits, jointly authored research articles and jointly supervised students. These complement her existing networks in France, the UK and USA.

Professor Mengersen's work has been well recognised in the medical, environmental, and business communities. An example of this is her long-term service for the Wesley Research Institute and the St Andrews Medical Institutes, two major hospital research facilities located in Brisbane. In addition to serving on the Wesley Research Institute Research Management Committee, she founded the Wesley Research Institute Biostatistics Laboratory and was a member of the team at St Andrews Medical Institutes that attracted a major Queensland Government Grant to progress research on improving quality of clinical processes, and hence patient outcomes and safety, in hospitals. Her work has been recognised by the Wesley Research Institute Award for outstanding science research, the first time that such an award has been made to a non-clinical or non-medical scientist.

Her research achievements and leadership in Bayesian statistics have also been recognised by her peers through the award of Elected Fellow by the International Society for Bayesian Analysis in July 2014, one of only 50 such Fellows to date and in the first tranche of women elected to these prestigious positions. Her citation reads "for her outstanding research in Bayesian Statistics, hierarchical modelling, meta-analysis, mixture models, complex systems, and for promoting Bayesian ideas and techniques in a wide range of application domains. For her leading role in the Bayesian statistics community in Australia and internationally."

Professor Mengersen's career has been primarily based in Australia for family reasons, and also because she is dedicated to progressing Australia's research capability and capacity in mathematical sciences. In addition to the above scientific contributions, this is evidenced by her commitment to training the next generation of researchers, with 41 postgraduate researchers in statistics completed under her direct supervision and over 25 further graduate students completed at Australian and international universities (Malaysia, France) under her associated supervision. Currently, at QUT, she is Principal Supervisor of 7 PhD and 4 MPhil Research students and Associate Supervisor to 10 HDR students.

Professor Mengersen has actively contributed to professional societies, serving as National President for the Statistical Society of Australia and Managing Editor of the Australian and New Zealand Journal of Statistics, as well as taking various Executive roles in the International Society for Bayesian Analysis and the International Biometrics Society. The most recent such position is 2017 President for the International Society for Bayesian Analysis (ISBA).

Within Queensland University of Technology, Professor Mengersen has grown a group of around thirty postgraduate and postdoctoral researchers on statistical methodology and its applications, and has maintained this group for around seventeen years. Most of the researchers in her Bayesian Research and Applications Group (BRAG) are funded by collaborative grants and have collaborators in government and industry, thus facilitating the translation of research to practice. In addition to students who have progressed through traditional routes to postgraduate research, the group includes students who have come from other professions to train or retrain in statistics, thus expanding their expertise and that of the whole group. The group also comprises a substantial cohort of women, many of which have returned to research after career breaks.

In 2016 QUT awarded the title of Distinguished Professor to Professor Kerrie Mengersen in recognition of her outstanding achievements, both nationally and internationally, in mathematics and statistical research. Distinguished Professor Mengersen is acknowledged to be one of the leading researchers in her discipline. The award recognises not only Professor Mengersen's past and current eminence in her field, but also the potential for ongoing excellence. This was the sixth QUT award of Distinguished Professor.

In 2016 Professor Mengersen also received two more prestigious awards: the Statistical Society of Australia's Pitman Medal, the highest award presented by the Society and the first time it has been presented to a woman, and the Research Excellence award by the Cooperative Research Centre for Spatial Analysis (CRCSI).

In 2018 Kerrie was elected a Fellow of the Australian Academy of Science. Fellows are elected by their Academy peers, following a rigorous evaluation process. From 23 Founding Fellows in 1954, the election

of 2018 year of the Academy's new Fellows brought the total number of living Fellows to 568. Kerrie joins a prestigious group—six Nobel Prize winners and luminaries including Sir Mark Oliphant, Professor Nancy Millis, Sir Douglas Mawson, Professor Frank Fenner and Sir David Attenborough.

The Academy of Social Sciences in Australia (ASSA) elected Kerrie as one of its new Fellows in 2018. *"This prestigious honour is a testament to Kerrie's outstanding research contributions and the impact that they have had in the Social Sciences over a sustained period. Kerrie is one of the very few people to be elected as a Fellow to both the ASSA and the Australian Academy of Science,"* said Prof Troy Farrell, QUT's Head of School for the Mathematical Sciences.

As described above, Professor Mengersen's commitment is not only to research but also to the translation of this research to practice. This has manifested itself in an almost continuous set of consultancies and contract research over in applied statistics over the past thirty-three years.

Examples of partner organisations that have engaged in repeat business include Australian Agricultural Company (AACo, company-wide supply chain predictive modelling and visual analytics system), Australian Bureau of Statistics (panel member and methodology co-leader for United Nations Global Working Group), Australian Institute for Marine Science (AIMS, methods for monitoring the Great Barrier Reef), Australian Institute of Sport (new methodology for comparing treatments), Biosecurity Australia (national plant biosecurity systems), Brisbane Airport Corporation (airports of the future integrated systems leader), Brisbane hospitals (Wesley, PAH, TPCH; biostatistics, training), Cancer Council Qld (first state-wide atlas of cancer), Chevron (state-compliant design and review of biosecurity system for Barrow Island WA), Corrs Chambers Westgarth (expert witness), Dairy Australia (development and release of sustainability scorecard), Department of Foreign Affairs and Trade (funded by STDF, development of system approach for agricultural exports with five countries in southeast Asia), DSITI (biometrics projects), Golden Casket (design and evaluation of national and international games), Healthy Waterways (systems models and scorecards, models for Healthy Waterplay program), Horticulture Australia (design of national bee biosecurity program), Maurice Blackburn (expert witness), and The Nature Conservancy and related conservation organisations.

Many of these projects have had demonstrable impact. For example, the Queensland Cancer Atlas (with Cancer Council Qld and CRC for Spatial Information) resulted in substantial media attention over the evidence for disparity in survival between rural and urban women with breast cancer. This has led to a change in State Government subsidies for travel for rural women and a review of the location of screening centres. The Atlas was also extended to a national scale in 2017. The biosecurity system designed for Chevron for Barrow Island was a critical factor in State Government approval of the large gas plant on the Class A nature reserve. The expert statistical advice and court appearance as an expert witness for Maurice Blackburn contributed to the success of a large national class action, with international consequences. The methodology developed for the sustainability scorecard with Dairy Australia and the System Approach to biosecurity with STDF have been published as books and have been adopted by other agencies nationally and internationally. The work with Brisbane Airports and Airports of the Future extended to 17 airports and airlines. Five years of collaborative projects with AIMS have resulted in new insights into biodiversity and coral reef health, an assessment of dredging regimes to reduce impact on seagrass and the development of a digital reef that enables divers to upload their photos which are then analysed for information to contribute to the reef monitoring models. The conservation projects with TNC and associated organisations have led to capture of expert information on cheetah conservation in Southern Africa and citizen information on orangutan conservation in Borneo. This has led to the conception and development of a new project that aims to fast-track conservation using 360 cameras and virtual reality, as well as other new technology including drones and bioacoustics, with the initial aim of developing a jaguar corridor in the Peruvian Amazon.

**Statement of Expertise**

- Development of statistical methods and computational algorithms
- Modelling complex systems; spatio-temporal modelling; big data analytics; Bayesian statistics
- Translation with impact in health, environment, business, and industry
- Google Scholar metrics (2nd February 2022): 22747 Citations; h-index 71; i10-index 322.

**EDUCATION:**

**1995** Graduate Certificate in Higher Education, Queensland University of Technology.

**1989** Doctor of Philosophy in Statistics, University of New England.

**1985** Bachelor of Arts (Honours Class 1), University of New England.

**CURRENT APPOINTMENTS:**

**2016 –** Chair in Statistics and Distinguished Professor, Queensland University of Technology (QUT)

**2020** - Founder and Director, QUT Centre for Data Science (~200 members, funding $7.5M)

**2020** - Founder and Lead node for Australian Data Science Network, (~20 Research Centers)

**2018 – 2023** International Guest Chair, University of Pau and the Pays de l'Adour (UPPA), France

**2016 -** Associate Member, Department of Statistics, Oxford University UK (one of 12 members)

**2004 -** Research Professor in Statistics, School of Mathematical Sciences, QUT

**PAST APPOINTMENTS:**

**2015 – 2021** Australian Research Council (ARC) Laureate Fellow, "Bayesian Learning for Decision Making in the Big Data Era", awarded $2.4M

**2014 –** 2021 Node Leader and Deputy Director of the ARC Centre of Excellence for Mathematical and Statistical Frontiers for Big Data, Big Models and New Insights (ACEMS), $20M over 7 years

**2011-2012** Inaugural Director of the Collaborative Centre for Data Analysis, Modelling and Computation, QUT.

**2005–2007** Director of Faculty of Science Research Centre, Queensland University of Technology.

**2001-2004** Professor and Head of Discipline in Statistics, University of Newcastle.

**1994-2000** Lecturer/Senior Lecturer in Statistics, QUT.

**1993** Visiting Associate Professor in Statistics, Colorado State University, USA.

**1990-1992** Lecturer/Senior Lecturer in Statistics, Central Queensland University.

**1989-1990** Assistant Professor in Statistics, Bond University

**1987-1989** Commercial statistical consultant, Siromath Pty Ltd.

**Awards and Honours:**

**2020** Asia-Pacific Spatial Excellence Award (APSEA) for People & Community: Virtual Reef Diver team

**2020** Asia-Pacific Spatial Excellence Award (APSEA) for Spatial Enablement: The Australian Cancer Atlas team

**2020** Asia-Pacific Spatial Excellence Awards (APSEA) , the JK Barrie Award for Industry Excellence: The Australian Cancer Atlas team

**2019** Eureka Prize finalist: Virtual Reef Diver team

**2019** regional (Queensland) Asia-Pacific Spatial Excellence Award for Spatial Enablement: The Australian Cancer Atlas team

**2018** Invited Fellow of the Queensland Academy of Arts and Sciences (QAAS)

**2018** Lindley Prize for best paper at the World Meeting of International Society for Bayesian Analysis (ISBA), Edinburgh, Mengersen, Sutton, Pettitt

**2018** Elected a Fellow of the Academy of Social Sciences in Australia (ASSA)

**2018** Elected a Fellow of the Australian Academy of Science (AAS)

**2018-2023** International Guest Chair**,** Energy Environment Solutions (E2S)**,** University of Pau and the Pays de l'Adour (UPPA)

**2017** International Jean-Morlet Chair, Aux-Marseille, France, taken up in 2018

**2016** Awarded the title of Distinguished Professor by Queensland University of Technology.

**2016** Awarded the Pitman Medal, by the Statistical Society of Australia and the first time awarded to a woman since its inception 35 years ago

**2016** Cooperative Research Centre for Spatial Information Research Excellence Award

**2016** J.S Hunter Award (The International Environmetrics Society), awarded in tandem with the annual J Stuart Hunter Lecture

**2016** Outstanding Science Researcher Award, Wesley Research Institute, first non-clinical researcher

**2015** Australian Research Council Laureate Fellowship

**2015** Biennial Medal by the Modelling and Simulation Society of Australia and New Zealand (MSSANZ)

**2015** Fellow of the Modelling and Simulation Society of Australia and New Zealand (MSSANZ)

**2014** Vice-Chancellor's Award for Research Excellence, Team.

**2014** Elected Fellow of the International Society for Bayesian Analysis

**2012** Queensland University of Technology Award for Excellence in Postgraduate Research Supervision.

**2010** Wesley Research Institute Outstanding Science Researcher.

**2009** Queensland University of Technology Vice-Chancellor's Award for Research Excellence, Individual.

**2009** Vice-Chancellor's Award for Research Excellence, Team.

**2009** Cooperative Research Centre National Plant Biosecurity Award for Research Translation.

**2007** Queensland University of Technology Faculty of Science award for outstanding research.

**2005** Elected Fellow of the Institute of Mathematical Sciences

**Key Professional Positions:**

**2021-2025** Elected Vice-President of the International Statistical Institute (ISI)

**2021** Chair Committee of Presidents of Statistical Societies (COPSS) GW Snedecor Award Committee

**2021** Member of the Scientific Committee: AMSI Winter School on Statistical Data Science

**2020-** Councillor, Queensland Academy of Arts and Sciences (QAAS)

**2020-** Member of the Advisory Committee for the China Regional Hub, United Nations Global Working Group on Big Data

**2020-2023** Member of the Advisory Committee for PERISCOPE (Pan-European Response to the Impacts of COVID-19 and future Pandemics and Epidemics) European Collaboration on COVID-19 Scientific Advisory Board

**2020-2022** Invited member of the Natural Sciences and Engineering Research Council of Canada (NSERC)'s Discovery Institutes Support Grants peer review committee

**2020** Member of the ISI Data Science Working Group (Australia/New Zealand region representative)

**2020** Member of the External Modern Statistics and Statistical Machine Learning CDT Advisory Board Advisory Board: Centre for Doctoral Training (CDT). Imperial/Oxford Universities, UK

**2020-2022** Member of the Named Lectures Committee, ISBA

**2020 – 2023** Invited Member, National Committee for Mathematical Sciences (NCMaths), Australian Academy of Science (AAS),

**2020** Invited Chair, Australian Academy of Science (AAS), Moran Medal Honorific Awards Committee

**2019 – Present** Scientific Council Committee, Centre International De Rencontres Mathematiques (CIRM), Marseille, France

**2019 – Present** Visiting Professor and International Guest Chair, Energy Environment Solutions (E2S), University of Pau and the Pays de l'Adour (UPPA), University of Pau, France

**2019** Member of the International Statistical Institute Pearson Award Committee

**2018** Appointed member of Executive Committee for the Australian Academy of Science (AAS)

**2018 -2019** Invited Member of the Expert Working Group for the Learned Academies Special Project (LASP): Big data in Australian research: issues, challenges and opportunities for the Australian Academy of Science (AAS)

**2018** Appointed member of Executive Committee for the American Statistical Association (ASA)

**2018 – 2021** Elected Member of Council, Institute of Mathematical Statistics (IMS)

**2018 – 2023** Appointed member of Executive Committee for the International Statistical Institute (ISI)

**2018** Past President**,** International Society for Bayesian Analysis

**2018-Present** Member of the panel: the Moran and Hannan Medals for the Australian Academy of Science

**2018-Present** Member of the Bayes4Health, UK, Advisory Board

**2018** Nominations panel for the International Prize in Statistics

**2018** Member of QUT's new Learning Potential Fund Speakers Circle

**2018** Steering Committee, The World of Statistics (https://www.worldofstatistics.org/)

**2017** President, International Society for Bayesian Analysis

**2017** Member of the MATRIX Scientific Committee, Mathematical Research Institute, Australia

**2016 – present** Member of the Environmetrics Society

**2016** President Elect**,** International Society for Bayesian Analysis

**2015-2018** Fellows Committee, International Society for Bayesian Analysis

**2015 - Present** Associate Member, Department of Statistics, University of Oxford

**2015** Member of the Task Team on Satellite Imagery, Remote Sensing and Geo-Spatial Data, under the UN Statistics Division Global Working Group (GWG) on Big Data for Official Statistics

**2015** Executive member, International Society for Bayesian Analysis

**2015** Invited member of Australian Research Council Centres of Excellence selection panel

**2014** Invited Co-Editor of an issue of Statistical Science on "Big Bayes Stories"

**2014–Present** Chair of the Australian and New Zealand Journal of Statistics Management Committee

**2014 - Present** Visiting Professor, Universit'e Paris Dauphine and Centre de Recherche en ´ Economie et Statistique – National Institute of Statistics and Economic Studies, Paris, France

**2013–2014** Elected Member of the International Advisory Board, International Biometrics Society.

**2012–Present** Appointed Member of the Biometrics and Biostatistics Panel, National Health and Medical Research Council.

**2012-2018** Appointed Member of the Panel for the Provision of Social Policy Research, Evaluation, Investment in Data and Professional Development Services, Australian Government Department of Families, Housing, Community Services and Indigenous Affairs.

**2012–Present** Reviewer, National Health and Medical Research Council Early Career Fellowships.

**2012–Present** Reviewer, Australian Research Council Future Fellows and Laureate Fellows.

**2011–2013** Elected National President, Statistical Society of Australia.

**2011–Present** Elected Member of the Australian Academy of Sciences National Heads of Mathematical Sciences Committee.

**2010** Appointed Member of the World Health Organisation International Ctte for the Eradication of Malaria.

**2009–2012** Elected Executive Member of the International Society for Bayesian Analysis,

**2007–Present** Reviewer, New Zealand Marsden Foundation Grants.

**2006–Present** Reviewer, National Health and Medical Research Council Project Grants.

**2005–2008** Elected Executive Member of the International Society for Bayesian Analysis.

**2005–2009** Managing Editor for the Australian and New Zealand Journal of Statistics.

**2004–2006** Elected Member of the Advisory Board for the Bayesian Analysis journal.

**2004–2008** Founder and Inaugural President of the Australasian Chapter of the International Society for Bayesian Analysis.

**2003-Present** Reviewer, Australian Research Council Discovery and Linkage Projects.

**2002–2004** Associate Editor for the Australian and New Zealand Journal of Statistics.

**2002–2005** Associate Editor for Biometrics.

**1998–2000, 2005–2016** Member of the Research Management Board of the Wesley Research Institute.

**Conference organisation:**

**2020 -2022** Elected International Program Chair for IBC 2022 (International Biometric Conference) International Biometrics Society (IBS), (~800 participants), Latvia 2022

**2019** Data Science and Social Good Symposium, Brisbane, Australia

**2019** OzViz Workshop, Brisbane, Australia

**2019** Autostat Workshop, Brisbane, Australia

**2004-Present** Principal organiser of Bayes on the Beach, premier annual Bayesian statistics meeting in Australia, sponsored by ISBA and Statistical Society of Australia (SSA)

**2018 Organiser** Bayesian Statistics in the Big Data Era conference Aux-Marseille**,** France

**2010-2018** Program Committees for ISBA, MCMSki and O'Bayes Conferences

**2012** Program Chair for ASC 2012 (Adelaide)

**2012** Program Chair for ISBA 2012 (Kyoto, Japan)

**2008** Program Chair for ISBA World Meeting (Hamilton Island)

**2006** Valencia/ISBA World Meeting (Valencia, Spain)

**2006** Programme Committee for the Statistical Society of Australia Conference (ASC)

**2002 and 2005** Programme Committee for ASC

**2004** Programme Committee for International Society for Bayesian Analysis (ISBA) World Meeting

**Consultancy and Short Courses:**

**2021** Training for United Nations National Statistics Offices on Big Data (Kigali 2019; Bangkok 2018; Colombia 2017); member of international training and curriculum program 2021.

**2020** Expert Legal Advice

**2019** Workshop Big Data for Higher Degree Research, Third International Conference on Statistics, Mathematics, Teaching, and Research 2019 (ICSMTR). Makassar, Indonesia

**2019** Meta-analysis/Comparative Analysis Synthesis Group Workshop, Kioloa Australia

**2019** Evidence Synthesis Hackathon, Canberra, Australia

**2019** MIT Bootcamp, Moreton Island, Australia

**2018** Masterclass in Bayesian Statistics Aux-Marseille**,** France

**2018** Workshop**,** Young Bayesians in the Big Data Era, Aux-Marseille**,** France

**2018** Key Presenter: Workshop on Satellite Imagery Data and Applications for Official Statistics, Bangkok

**2018** Key Presenter: Applied Bayesian Summer School, 5-day short course on Bayesian Statistics in Sport, Como, Italy

**2017** Co-host: 5-day workshop on Novel Approaches to Informing Decision-making in Ill-defined Ecological Communities**,** Brisbane

**2017** Key Presenter: Workshop on Satellite Imagery Data and Applications for Official Statistics, Colombia

**2017** Key presenter: Australian Bureau of Statistics Short Course: Big Data, Statistics and Machine Learning, Canberra, Australia

**2017** Key Presenter: Australian Bureau of Statistics Collaborative Workshop, Canberra, Australia

**2017** Presenter: one day workshop on Implicit Generative Models, Thirty-fourth International Conference on Machine Learning, Sydney, Australia

**2017** Sole Presenter: 2-day short course: Practical Bayes for Beginners, International Statistical Institute 61st World Statistics Congress, Marrakech, Morocco

**2017** Key Presenter: 3-day methodology workshops, the Australian Bureau of Statistics, Canberra, Australia

**2017** Sole Lecturer: AMSI Summer School on Modelling and Analysis of Big Data, Sydney

**2016** Sole Lecturer: Statistical Modelling and Analysis of Big Data Analytics, 23rd SSAI conference, ACT

**2016** Invited Member, Federation University Research Priority Panel

**2016** Workshop: Statistical and Machine Learning for Big Data Analysis, UKM Integrated International Conference, Malaysia

**2016** Invited Member, Expert panel on the 'Future of Mathematics in Australia' at Parliament House, ACT

**2016** Workshops: Introduction to Bayesian Statistics, pro bono, SSAI Branches, Australia

**2016** Workshops: Intermediate Course to Bayesian Statistics, pro bono, SSAI Branches, Australia

**2016** ACEMS collaborative Workshop with the SAX Institute, Sydney

**2004-Present** Continuing statistical consultant

**Ongoing** Design and delivery of 1-5-day short courses for commercial clients and academic organisation: 32 courses in four countries in 2005-2014.

**2001-2004** Co-Director of Newstat Ltd at the University of Newcastle

**1995-2001** Coordinator of the Statistical Consulting unit at QUT

**1986-1989** Fulltime consultant statistician with Siromath Pty Ltd

**Postgraduate Supervision:**

Completed students in past 5 years (2016-2021): 23 PhD students (principal supervision), 9 PhD students (associate supervision), 6 Research Masters students (principal supervision)

Current students (2022): 7 PhD students (principal supervision), 10 PhD students (associate supervision), 5 Research Masters students. Joint External supervisor to 3 PhD students.

*PhD Completions: Principal Supervisor*

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| 2021 | J. Holloway | Extending Decision Tree Methods for the Analysis of Remotely Sensed Images |
| 2021 | F. Jahan | New Insights into Bayesian Models for Spatial Data |
| 2020 | S. G Jones | Hydrogel Spacers in External Beam Radiation Therapy of Prostate Cancer: Patient Selection and Cost-Effectiveness |
| 2020 | Aswi | Bayesian Spatio-Temporal Modelling of Small Areas: Dengue Fever in Makassar Indonesia |
| 2020 | Thanh Tan Nguyen | Selected Non-convex Optimization Problems in Machine Learning |
| 2020 | A. Ebert | Dynamic Queueing Networks: Simulation, Estimation and Prediction |
| 2019 | F. Alanzi | The Development and Application of New Statistical Vine Copula Models |
| 2019 | B. Colin | Prediction of Large Spatio-Temporal Data Using Machine Learning Methods |
| 2019 | T. Reddan | Statistical Modelling of Paediatric Appendix Ultrasonography and the Predictive Value of Secondary Sonographic Signs |
| 2019 | M Sutton | Variable Selection and Dimension Reduction for Structured Large Datasets |
| 2019 | D. Kennedy | Statistical inference for the investigation of cell-type heterogeneity in DNA methylation data |
| 2018 | S Haque | Assessing the accuracy of record matching algorithms in data linkage |
| 2018 | C. Hargrave | The development of a clinical decision making framework for image guided radiotherapy |
| 2018 | A. Thomas | Ensemble statistical modelling of risk factors in health |
| 2018 | N. Tierney | Statistical approaches to revealing structure in complex health data |
| 2017 | J. Baker | Bayesian spatiotemporal modelling of chronic disease outcomes |
| 2017 | E. Duncan | Bayesian approaches to issues arising in spatial modelling |
| 2017 | B. Fitzpatrick | Ultrahigh dimensional variable selection for interpolation of geostastical data |
| 2016 | D. Beaudequin | Modelling the public health risks associated with environmental exposures |
| 2016 | E. Brown | Biologically guided adaptive radiotherapy treatment planning |
| 2016 | A. Farr | Understanding wayfinding: a Bayesian Network approach |
| 2016 | J. Hsieh | Bayesian statistical modelling for understanding health-related outcomes for women screened for breast cancer |
| 2016 | Z. van Havre | Bayesian estimation of the number of components in mixture and hidden Markov models: methods and applications |
| 2015 | S. Cramb | Spatio-temporal modelling of cancer data in Queensland using Bayesian methods |
| 2015 | M. Moores | Bayesian computational methods for spatial analysis of images |
| 2015 | J. Vercelloni | Quantifying the state of populations and effects of disturbances at large spatio-temporal scales |
| 2014 | S. Kang | Bayesian models for spatio-temporal assessment of disease |
| 2013 | X. Huang | Spatiotemporal modelling in estimation of nitrous oxide emissions from soil |
| 2013 | I. Smith | Development and use of risk adjusted statistical process control tools for the monitoring and improvement of clinical outcomes in interventional cardiology |
| 2013 | S. Thamrin | Bayesian survival analysis using gene expression |
| 2012 | | H. Assareh; S. Naish |

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| 2011 | | M. Donald; M. Stanaway; N. White; W. Yu |
| 2010 | | C. Chen; A. Earnest; M. Falk; J. Lee; M. Rolfe |

*PhD Completions: Associate Supervisor*

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| 2021 | P. Gilholm | Methods for personalised predictive modelling of developmental milestones for children with disabilities |
| 2021 | N. Wang | PM2.5 and Lung Cancer Mortality in China: Spatial and Temporal Analysis |
| 2020 | Y. Zhang | Using Big Data to Enhance Pertussis Surveillance and Response in Shandong Province, China |
| 2020 | M. Hossain | Effects of Socio-Demographic and Climatic Factors on Childhood Pneumonia in Bangladesh |
| 2018 | S. Sarini | Statistical methods for modelling falls and symptoms progression in patients with early stages of Parkinson's disease |
| 2018 | M. Peron | Optimal sequential decision-making under uncertainty |
| 2018 | M. Cespedes | Detection of longitudinal brain atrophy patterns consistent with progression towards Alzheimer's disease |
| 2016 | J. Sommerfeld | Residential customers and adoption of solar PV |
| 2016 | T. Wangchuk | Quantitative assessment of air quality in different indoor and outdoor environments in rural Bhutan |
| 2015 | D. Xu | The relationship between executive function, postural instability and gait disturbance in Parkinson's Disease |
| 2013 | S. Clifford | Spatio-temporal modelling of ultrafine particle number concentration |
| 2013 | X. Ye | The effects of hot and cold temperatures on emergency hospital admissions in Brisbane, Australia |
| 2013 | Q. Yu | Numerical simulation of anomalous diffusion with application to medical imaging |

*Research Masters Completions: Principal Supervisor*

| | | |
|---|---|---|
| 2020 | S. Kobakian | New Algorithms for Effectively Visualising Australian Spatio-temporal Disease Data |
| 2019 | J. Roberts | Communication of Statistical Uncertainty to Non-expert Audiences |
| 2018 | R. Smith | Ecologically relevant, quantitative methods for measuring pesticide reduction for the Great Barrier Reef |
| 2017 | A. Cook | Predictive models to support quoting of fixed fee consulting projects |
| 2016 | J. Lewis | Bayesian Networks in industry |
| 2016 | K. Victor | Echocardiographic measures of pulmonary hypertension and the prediction of end-points in sickle cell disease |

*Current RHD Students – Principal Supervisor*

W. Areed, A. Bora, R. Browning, O. Forbes, J. Ford Morgan, C. Hassan, J. Hogg, J. Peppinck, J. Worrall,

*Current RHD Students – Associate Supervisor*

A. Bretherton, K. Buchhorn, C. Chamunyonga, E. Goan, G. Heron, Y. Huang, V. Pandey, A. Rezaeian, L. Sabburg, X. Si, P. Sobenko Hatum, J. Vaughn, W. Zheng,

*Current RHD Students – External Supervisor*

C Kermorvant, A Mahoney, B Mourguiart,

**Prominent Invited Lectures:**

**2022** International Society for Bayesian Analysis World Meeting, Foundation Lecture. (scheduled)

**2021** Keynote Presentation, 21st ICDM 2021 IEEE International Conference on Data Mining, Auckland

**2021** Presentation, Australian Institute of Sports (AIS) Technology and Applied Research Symposium (STARS 2021) Virtual

**2021** seminar, Bayes Research interest group of the South African Statistical Association, Virtual

**2021** invited speaker, South Australia Statistical Society of Australia monthly research meeting, Virtual

**2021**, Invited Speaker, The Fourth International Conference on Statistics, Mathematics, Teaching, and Research (ISCMTR 2021), Makassar, Indonesia, Virtual

**2021** Chair, Data Driven Queuing Challenges Workshop, University of Melbourne, Virtual

**2021**, Distinguished Lecture, 2021 Distinguished Lecture Series in Statistical Sciences, Canadian Statistical Sciences Institute (CANSSI). – Virtual

**2021** Chair, James Cook University Lecture series – Virtual

**2021** Presenter, Royal Statistical Society International conference – virtual

**2021** Panellist and Organising committee member, International Society of Biomechanics in Sport Conference (2021) - virtual

**2021** Keynote, Visualisation Matters 2021, UNSW - virtual

**2021** Keynote, Australian and New Zealand College of Anaesthetists, (ANZCA) Clinical Trials Network meeting - virtual

**2021** Distinguished Lecture Series, Research Students Conference (RSC) in Statistics and Probability, Lancaster University - virtual

**2021** Guest Speaker, Lyceum Club Speaker Forums, Brisbane

**2021** President's Invited Speaker, International Statistical Institute, ISI World Statistics Conference Virtual 2021 Congress (ISI 2021)

**2021** Keynote, 2021 Australian and New Zealand Statistical Conference (ANZSC2021) - virtual

**2021** Speaker and panellist, International Society for Bayesian Analysis (ISBA) 2021 *(2020)* ISBA World Meeting - virtual

**2021** Plenary speaker, 2nd Ecosystem Change and Population Health Symposium (ECAPH 2021), Brisbane

**2021** Presenter, 1st International Symposium on the Science of Data Science (ISSDS 2021), Lucerne-virtual

**2021** Presenter, Mathematical and Theoretical Biology (MTB) line at -Basque Center for Applied Mathematics (BCAM) virtual seminar, Spain

**2021** Public Talk and Panellist, Statistical Society of Australia (SSA) Victoria and Canberra Branch joint virtual event

**2021** Public Lecture and workshop, School of Science, University of Southern Queensland, Toowoomba

**2021** mini-symposium, APCMfI mini-symposium: European Consortium for Mathematics in Industry (ECMI 2021), Bergische Universitat Wuppertal - virtual

**2021** radio show + podcast, Ockham's Razor speakers, World Science Festival, Brisbane

**2021** Guest speaker, annual Del Doherty lecture to Queensland Graduate Women, UQ, Brisbane

**2021** David Finney Lecture, University of Edinburgh, - virtual

**2021** Presenter, United Nations Working Group on Big Data - virtual

**2021** Lecture, Chalmers University of Technology in Gothenburg, Sweden - virtual

**2021** PC Mahalanobis 2 day Lecture Series, Indian Statistical Institute, Kolkata., India - virtual

**2021** Public Lecture, Australian Mathematics Science Institute (AMSI) Summer School Adelaide - virtual

**2021** Presenter, Corcoran Memorial Lecture, University of Oxford - virtual

**2020** Keynote Speaker, Australasian Bayesian Network Modelling Society Virtual conference

**2020** Keynote Speaker, 64th Annual Meeting of the Australian Mathematical Society AustMS online conf.

**2020** Online Panellist, Women in Mathematics Special Interest Group AustMS

**2020** Online Presenter, AustMS Early-Career Workshop

**2020** Online Keynote Speaker, United Nations Inauguration Ceremony of the Regional Hub for Big Data in China

**2020** Online Panellist, Australian Academy of Science webinar "Supercomputer to fight COVID-19"

**2020** Presenter**,** AMSI BioInfoSummer online conference2020

**2020** Presenter, Indian Institute of Technology Madras, QUT/IIT-M Virtual Workshop

**2020** Inaugural online Speaker: Pearcey Foundation celebration of Ada Lovelace Day Tuesday 13 October 2020 - Women's Contributions to the digital age.

**2020** Campion (President's Invited) Lecturer, Royal Statistical Society Conference, September on-line

**2020** Invited Speaker,6$^{th}$ International Conference on Big Data for Official Statistics – Virtual Meeting, United Nations Statistics Division

**2020** Invited Plenary Speaker, Bernoulli-IMS One World Virtual Symposium

**2020** Statistical Society of Australia webinar: Writing successful fellowships

**2020** Online Statistics Seminar, University of Melbourne

**2020** Online Seminar, ARC Centre for **D**ata **A**nalytics for **R**esources and **E**nvironments (DARE), Sydney

**2020** Online Seminar, Statistics across Campus. Sydney University

**2020** Invited Seminar, Department of Statistical Sciences, University of Padova, Italy

**2020** Invited Seminar, University of Pavia, Italy

**2020** Invited Seminar, Swiss University for Applied Sciences ZHAW Datahub, Zurich

**2019** Invited Speaker, Data Science Downunder Workshop, Newcastle, Australia

**2019** Keynote Speaker, QLD Australian Society of Medical Imaging and Radiation Therapy Weekend Conference, Gold Coast, Australia

**2019** Guest lecturer, Third International Conference on Statistics, Mathematics, Teaching, and Research 2019 (ICSMTR). Makassar, Indonesia

**2019** Invited Plenary Talk, MCM2019, 12$^{th}$ International Conference on Monte Carlo Methods and Applications, Sydney, Australia

**2019** Invited Speaker, BAYES2019: Bayesian Biostatistics Conference , Lyon, France

**2019** Lancaster Lecture, [named lecture] Statistical Society of Australia, Sydney, Australia

**2018** Panel Member**,** [prestigious lecture]Joint Symposium Australian Academy of Science, Australian Academy of Law, Sydney, Australia

**2018** International Jean-Morlet Chair, Aux-Marseille**,** France

**2018** Keynote Speaker: Mixture Models Workshop, Guilin, China

**2018** Invited Speaker: Joint Statistical Meetings (American Statistical Association) JMS2018, Vancouver, Canada

**2018** Plenary Speaker: BayesM Conference (ISBA early career researchers), Warwick, UK

**2018** Keynote Speaker: International Statistical Ecology Conference, St Andrews, UK

**2018** Invited Speaker: Big Data in Agriculture, Edinburgh, UK

**2017** Plenary Lecture, Celebration of Women in Australian Mathematical Sciences, Adelaide, Australia

**2017** Speaker: International Statistical Institute 61st World Statistics Congress, Marrakech, Morocco

**2017** Keynote Speaker: 37th International Symposium on Forecasting, Cairns, Australia

**2016** Keynote Address**:** International Symposium on Big Data Visual Analytics (BDVA'16), Sydney

**2016** Keynote Address**:** 4th International Conference on Mathematical Sciences (ICMS4), Malaysia

**2016** Presenter: Annual J Stuart Hunter Lecture, The International Environmetrics Society Conference, Edinburgh, UK

**2016** Invited Speaker, Inter Disciplinary Institute of Data Science (IDIDS), Università della Svizzera italiana, Lugano

**2016** Invited speaker, International Society for Bayesian Analysis, Sardinia, Italy

**2016** Invited Speaker, 2016 Spring Statistics Seminar Series, Bocconi University, Milan

**2016** Distinguished Speaker 4th Institute of Mathematical Statistics Asia Pacific Rim Meeting, Hong Kong

**2016** Invited speaker, ADAC Workshop Switzerland

**2016** Invited speaker, QUT's Office Professional Network Group Luncheon

**2015** Plenary Speaker, world meeting of the IISA (International Indian Statistical Association) Pune, India

**2015** Plenary Speaker, 21st International Congress on Modelling and Simulation, Gold Coast

**2015** Invited Speaker, International Conference in Statistics, Mathematics, Teaching, and Research (ICSMTR-2015) Makassar, Indonesia

**2015** Invited Speaker; Statistics in Ecology and Environmental Monitoring (SEEM) Queenstown, New Zealand

**2015** Invited Speaker, 9th Workshop on Bayesian Inference in Stochastic Processes (BISP 2015), Istanbul, Turkey

**2015** Invited Speaker, Games and Decisions in Reliability and Risk (GDRR 2015), Istanbul, Turkey

**2015** Invited Session, Spatial Statistics 2015 Emerging Patterns, Avignon, France

**2014:**Invited Speaker, Computational Techniques and Applications Conference (CTAC), Canberra

**2014:**Invited Speaker, First International Conference on Science, Makassar, Indonesia

**2014** Invited Speaker, World Meeting of the International Society for Bayesian Analysis, Cancun, Mexico.

**2014** Invited Speaker, Joint Australian Statistical Conference and International Mathematical Sciences Conference, Sydney

**2014** Keynote Speaker, International Workshop on Monte Carlo Methods in High Dimensions, Isaac Newton Institute, Cambridge, United Kingdom

**2014** Keynote Speaker, Living Analytics Conference, Singapore

**2013** Keynote Speaker, Standards Trade and Development Fund Closing Meeting, Bangkok, Thailand

**2013** Keynote Speaker, International MaxEnt Conference, Canberra.

**2012** Keynote Speaker, International Conference on Monte Carlo and Quasi Monte Carlo, Sydney

**2011** Keynote Speaker, International Conference on Mathematical and Computational Biology, Melaka, Malaysia.

**2010** Keynote Speaker, International Conference on Mixtures, Edinburgh, UK.

**2009** Keynote Speaker, Australian and New Zealand Society for Industrial and Applied Mathematics Conference, Caloundra, Australia.

**2008** Keynote Speaker, International Society for Bayesian Analysis MCMSki Conference, Bormio, Italy

**2007** Keynote Speaker, 9th Islamic Conference on Statistical Sciences, Kuala Lumpur, Malaysia.

**2006** Invited Speaker, International Biometrics Conference, International Biometrics Conference, Montreal, Canada.

**2005** Cornish Lecture, Statistical Society of Australia named lecture, Adelaide, Australia.

**2005** Invited Speaker, Recent Advances in Biostatistics, Bioinformatics and Markov Chain Monte Carlo, The University of New South Wales, Sydney

**2002** Plenary Lecture, Australian Mathematics Association, Australia.

**Major Research Grants:**

**2021** Australian Institute of Sport, AIS QAS QUT Strategic Partnership, P Wu, K Mengersen, C Drovandi. $471,000 2021-2026

**2021** Aboriginal and Torres Strait Islander Community Health Service Brisbane Ltd, ATSICHS Presentation & Data Science Roadmap. K Mengersen $15,000

**2021** Stryker Australia Pty Ltd, Data Driven Clinical Research Innovation Hub between Stryker, QUT, UQ and QLD Health (Stage 1 & 2), K Mengersen, J McGree, M Bellgard, S McPhail, et al. $572,366 2021-2022

**2021** Defence Industry & Innovation Next Generation Technologies Fund - Human Biotechnologies 2021, Wearable Predictive Diagnostics (WPDs) for warfighter maintenance. A Parker, G Kerr, D Broszczak, C Punyadeera, I Stewart, A Hunt, J Peake, K Sullivan, O Lipp, C Pattinson, S Smith, C Cook, A Pandey, M Chamorro-Koc, K Mengersen, C Fookes. $2,889,094 2021-2025

**2021** ARC Linkage Projects, Cancer Council Queensland, Statistical Methods for Quantifying Variation in Spatiotemporal Areal Data Mengersen, Aitken, Cramb, Baade, Wraith, Thompson, $607,446 2021-2024 LP200100468

**2020** FrontierSI, AusEnHealth Digital Twin - Scoping Study and Conceptual POC: FrontierSI Project: 5H06. K Mengersen, N Eaton, W Hu, L Morawska, D Wraith, B Spratt, P Fievez. $183,000 2020-2022

**2020** Queensland Academy of Sport (QAS), Modelling the Mixed Relay Triathlon: Application of an Agent-based Model to Investigate Optimal Race Strategy and Tactics. Wu, Mengersen, Kelly et al $22,500 2020

**2020** Food Agility CRC, Teys predictive and actionable surveillance modelling, Mengersen, Swindells, Ralph, Mortlock, $150,000

**2020** Moreton Bay Foundation, Living and playing together: combining different technologies to look and listen for marine wildlife in our recreational waterways, J Vercelloni, K Mengersen, A Price, A Dean, E Kennedy, K Thompson, P Anderson, G Winter, R Dwyer, D Burns, J Salmond. $30,073 2020-2023

**2019** ARC Linkage Projects **,** Department of Environment and Science **,** Healthy Land and Water Ltd, Revolutionising Water-Quality Monitoring in the Information Age, Mengersen, Hyndman, Peterson, McGree, Leigh, et al, $789,586 2019-2022 LP180101151

**2020** Department of Foreign Affairs and Trade (DFAT), Coral Reef Innovation Project (CRIP), Peterson, Mengersen, Vercelloni, Gonzalez-Rivero, $291,000 2020-2022

**2020** ARC Special Research Initiatives, Securing Antarctica's Environmental Future, Lead CI: Chown (Monash), QUT CI's Wilson, Bode, Helmstedt, Gonzalez, Peterson, Mengersen $35,999,999 2020-2026 SR200100005 No funds to QUT

**2020** Department of Natural Resources, Mines and Energy, Develop Methods For Automated Data Extraction into a Machine Readable Database for Subsequent Data Query and Reporting, Nayak, Mengersen, Banduthilaka, Kutty, Gordon, $83,000 2020

**2020** Queensland Health - Sunshine Coast Hospital and Health Service, Optimisation of Surgical Waiting List Management, Corry, McGree, Spratt, Mengersen, Aseervatham, Grieve, Ryan, $84,000 2020-2021

**2020** Australian Institute for Marine Science, Characterizing Great Barrier Reef Early Recovery for Adaptive Management Applications, Mengersen, Simpson, Jin, Wu, Ortiz, Gonzalez-Rivero, Thompson, $78,000 2020-2021

**2019** Department of Environment and Science, Uncertainty of Loads Project, Leigh, Peterson, Mengersen, McGree, Strauss, Neelamraju, Turner, Mann, $62,000 2019-2020

**2019** Queensland Academy of Sport (QAS), Enhancing the outcomes of physical training using models to integrate diverse data under uncertainty, Wu, Mengersen, Drovandi, Mitchell, Shephard, $140,000 2019

**2019** Department of Environment (OCS), Combining citizen science and innovative technologies to enhance reef management, Peterson, Mengersen, Vercelloni, Jones, Miller, $100,000 2019-2021

**2019** Healthy Land and Water Ltd, Stage 5: Predictive modelling of Enterococcoi in Recreational Waterways, Wu, Mengersen, Maxwell, $40,000 2019

**2018** New Zealand Ministry of Health, Provision of Spatial Cancer Models, Workshops and Support Services for the Development of the New Zealand Cancer Atlas, Mengersen, Baade, Cramb, Duncan $32,000 2018-2019

**2018** Healthy Land and Water Ltd, Stage 4: Predictive modelling of Enterococcoi in Recreational Waterways, Wu, Mengersen, Maxwell, $40,000 2018

**2018** Expedia Inc, Stage 2 Strategic Decision Making Platform, Devitt, Pearce, Chowdhury, Mengersen $34,000

**2018** Australian Bureau of Statistics, Developing statistical machine learning capabilities, McGree, Mengersen, $238,000, 2018-2019

**2018** FrontierSI**,** Monitoring Through Many Eyes: Spatially Enabling People to Protect the Great Barrier Reef, Peterson, Winter, Mengersen, Brown, Vercelloni, Loder. $135,000. 2018

**2017** Ernst & Young CRC SI2 4.114 Australian Beef Cattle Digital Supply Chain Proof of Concept, Corry, McGree, Helmstedt, Mengersen, Katter, Foley, Tonking, Masoud, Hsieh. $125,000 2017-2018

**2017** Australian Institute of Marine Science, Management of future outbreaks of Crown of Thorns Starfish - a web based interactive tool - Mengersen, Wu, McBain, $19,000 2017

**2017** Queensland Department of State Development, Longitudinal Benefits & Impacts Study on Queen's Wharf Brisbane Development – Phase 2, Mengersen, McGree, Moyle, Scott, Cross, Chataway, Beatson, Corry, Miska, Winter, Wraith, Higginson; $548,000. 2018-2019

**2017** Queensland Department of State Development, Longitudinal Benefits & Impacts Study on Queen's Wharf Brisbane Development, Mengersen, Wraith, Beatson, Johnston, Corry, Miska, Winter, Mathews, Kenny, Roberts; $930,000. 2017-2018

**2017** Expedia Inc, Strategic Decision Making Platform, Devitt, Mengersen, Pearce, $65,000

**2017** Defence Advanced Research Projects Agency (DARPA), Dengue Virus TIPs, Aaskov, Harrich, Li, Devine, Hugo, Vasudevan, Mengersen, Burrage, Drovandi, $2,707,000, 2017-2020

**2017** Queensland Department of State Development, Queen's Wharf Development data plan for data design, acquisition, tracking and analysis, Mengersen, Tiller; $50,000

**2017** Department of Science, Information Technology and Innovation (DSITI), Innovation for Data and Analytics Workflows, Mengersen, Petersen, Harch, Wynn, Dimech; $250,000, 2017-2019

**2017** Department of Social Services, Data Exchange - Development of the Benchmarking Methodology, Mengersen, Wu, Taylor; $685,000, 2017-2019

**2016** CRC for Spatial Information. Utilisation of Spatial Cancer Models: A National Cancer Atlas, Mengersen, Baade, Cramb, Moraga Serrano, Burrage, McGree et al, $528,000 2016-2018

**2016** Australian Institute of Health and Welfare. Utilisation of Spatial Cancer Models: A National Cancer Atlas, Mengersen, Baade, Cramb, Moraga Serrano, Burrage, McGree et al, $100,000 2016-2018

**2015** Australian Research Council Laureate Fellow. Bayesian Learning for Decision Making in the Big Data Era; FL150100150 $2,413,112. 2015-2020

**2015** CRC Plant Biosecurity Developing Pest Risk models of Buffel Grass using Unmanned Aerial Systems and Statistical Methods Gonzalez, Hamilton, Mengersen, McMaugh. $230,000. 2015-2016

**2015** CRC for Spatial Information Monitoring Through Many Eyes: Spatially Enabling People to Protect the Great Barrier Reef, Mengersen, Bednarz, Winter, Petersen, Brown. $410,000. 2015-2016

**2015** Australian Agricultural Company (AACo) Development of Statistical Business Intelligence Dashboard to Trace and Track in Real Time the Movement of Livestock, Bednarz, Mengersen, Wu. $658,000. 2015-2016

**2015** CRC for Spatial Information A Big Data Approach for Estimating Carrying Capacity and Liveweight Gain Mengersen, Bednarz, $339,000. 2015-2016

**2014** Australian Research Council Centre of Excellence in Mathematical and Statistical Frontiers for Big Data, Big Models and New Insights. CE140100049 $20,000,000. 2014-2021.

**2014** ARC Discovery Project, New Directions in Bayesian Statistics: formulation, computation and application to exemplar challenges; DP140103564 Mengersen, $239,000. 2014-2015.

**2014** ARC Linkage Project, Improving Productivity and Efficiency of Australian Airports - A Real Time Analytics and Statistical Approach, LP140100282 Yarlagadda, Fookes, Mengersen, Sridharan, Goodwin, Allen, Gately et al; $877,000. 2014-2017.

**2014** ARC Linkage Project, Customer Responsive Risk-Managed Network Planning, Bell, Ledwich, Buys, Mengersen, Drogemuller, Walden, Walker; LP140100923 $686,000. 2014-2017.

**2014** Australian Institute of Marine Science (OCS), Model-Based Adaptive Monitoring: Improving the Effectiveness of Reef Monitoring Programs, Mengersen, McGree, Caley; $100,000.

**2014** State of Queensland acting through the Department of Environment and Heritage Protection, Effective strategies for translocation of endangered native fauna, Mengersen, Johnson, Bunce $10,000.

**2014** ARC Linkage Infrastructure Equipment and Facilities (LIEF), FlashLite: A High Performance Machine for Data Intensive Science; LE140100061 UQ, QUT, GU, Monash, UTS, Qld Cyber Infrastructure Foundation; Abramson, Zhou, Bernhardt, Zhang, Zhu, Mengersen, Griffiths, et al; $1,000,000.

**2014** Fitzroy Basin Association Inc, Provision of Statistical Support: Mengersen, Johnson, Pinto; $216,000

**2013** Department of Agriculture Fisheries and Forestry (QLD) (OCS). An Epidemiology Study of the Brisbane Infestation of Solenopsis Invicta (Fire Ant): Mengersen. $341,000.

**2013** Smart Futures Co-Investment Fund with Boeing Research and Technology - Australia (BR&T-A). Creating a more Resilient Queensland - Unmanned aircraft for emergency response and biosecurity (ResQu): Campbell, Alvarez, Gonzalaz, Upcroft, Fookes, Mengersen et al. $3,500,000. 2013-2014.

**2013** The Australian Mathematical Sciences Institute (AMSI Intern) (c/- University of Melbourne), Aus Tourism Data Warehouse; Mengersen, Thomas, Ballard; $17,000.

**2013** Hunter Industrial Medicine Pty Ltd, An Innovative Best Practice Framework for Monitoring, Managing and Reporting Occupational and Environmental Health, Mengersen, Tierney; $34,000. 2013-2016.

**2013** Healthy Waterways (OCS) Healthy Waterplay Statistical Decision Support Tools, Mengersen, Xie, Udy, Cleary, Wilson; $15,000.

**2012** NHMRC Centres of Research Excellence (CRE**):** Centre for Research Excellence in Reducing Healthcare Associated Infection: Graves, Paterson, Riley, Nimmo, Mengersen, et al. GNT1030103 $2,674,000. 2013-2016.

**2012** FAO, WHO, World Bank, WTO, OEI Standards and Trade Development Facility. Beyond Compliance: Integrated Systems Approach for Pest Management in South East Asia. Mengersen, Mumford, Quinlan, Whittle. US$600,000. 2012-2013.

**2011** CRC for Infrastructure Engineering Asset Management. An Adaptable Multi-Criteria Asset Management Decision Support Module; Fidge, Mengersen, Sun, Chakraborty, Ma, et al. $471,000. 2011-2013.

**2011** ARC Discovery Project, From Science to Policy: Quantifying and Managing the Risk of Mosquito Borne Disease in the Context of Climate Change; DP110100651 Tong, Dale, Mackenzie, Mengersen, $328,000. 2011-2013.

**2011** Grains Research and Development Corporation (GRDC). Integrated Data and Synthesis Framework for Reducing N20 Emissions from Australian Agricultural Soils; Grace, Mengersen, Roe, Hogan, Scheer. $1,745,000. 2011-2013.

**2011** CRC for Spatial Information. Spatial-temporal Modelling of Cancer Incidence, Survival and Mortality; Mengersen, Turrell, Kemich. $500,000. 2011-2013.

**2011** CRC for Spatial Information. Spatio-temporal Modelling for Biomass Business; Mengersen, Grace. $198,000. 2011-2013.

**2011** ARC Linkage Infrastructure Equipment and Facilities (LIEF), Integrated command and control facility for large-scale critical infrastructure management; LE110100023 QUT, UM, UTS Yarlagadda, Fookes, Piccardi, Mendis, Rosemann, Mengersen, Barnes, $500,000. 2011

**2011** ARC Linkage Project, Electricity Demand Side Management: Models, Optimisation and Customer Engagement; LP110201139 Ledwich, Buys, Ghosh, Wishart, Bell, Mengersen, $420,000. 2011-2014

**2010** ARC Linkage Project, Making the most of remotely sensed data: Bayesian spatio-temporal models for enhanced natural resource management and design; LP100100565 Mengersen, Turner, Denham. $466,000. 2010-2012.

**2010** NHMRC Project Grant. Climate Change and Ross River Virus; Tong, Mengersen, McBride. GNT1011459 $267,000. 2010-2013.

**2010** ARC Linkage Project. Bayesian Statistical Models for Understanding Outcomes and Improving Decision-making for Women Screened for Breast Cancer. LP100100570 Mengersen, Turrell, Baade. $101,000. 2010-2012.

**2010** NHMRC Project. Early Warning Systems for Ross River virus Outbreaks; Tong, Mengersen et al. $580000. 2010-2012

**2009** ARC Linkage Project, Airports of the Future; LP0990135 Yarlagadda, Sidrharan, Mengersen, Rosemann, Dawson, Fookes, Piccardi, et al. $4,319,800. 2009-2013.

**2009** CRC for National Plant Biosecurity. Plant Biosecurity Statistical Analysis and Modelling; Mengersen, Low Choy. $413,000. 2009-2012.

**2008** UK Health Protection Agency. Using Evidence to Reduce the Risk of Healthcare Acquired Infection Following Primary Hip Replacement; Health Protection Agency, UK National Institute for Health Research.; Graves, Mengersen, Crawford et al; $464,000. 2008-2013.

**2008** ARC International Linkage Project. International Networks in Applied Bayesian Statistics: Improving Australia's Knowledge Through Intelligent Data Analysis and Modelling; LX0882876. Mengersen, McVinish. $58,414. 2008-2012.

**2008** Roche Pharma. Adaptive Experimental Designs for Clinical Trials; Mengersen. $200000. 2008-2010

**2008** CRC National Plant Biosecurity and Chevron. Provision of Quarantine Management Systems; Mengersen. Project 1 $400000 2008-2011; Project 2 $305,000. 2008-2011, 2008-2009.

**2008** CRC National Plant Biosecurity and Chevron. Comparison of Quarantine Risk Assessment Systems; Mengersen. $268,000. 2008-2009.

**2007** ARC Linkage Project. Making the Most of Database Information in Patient-Based Decision-Making A Bayesian Approach; LP0775231 Mengersen, Johnson, Brighouse. $277,967. 2007-2010.

**2006** ARC Discovery Project. Doing Bayesian Statistics Better: an Inter-Disciplinary Perspective for Improving Models, Priors, Design and Applications; DP0667168 Mengersen. $275,372. 2006-2008.

**2006** ARC Linkage Project. Measuring and Presenting Uncertainty in Complex Natural Resource Monitoring Programs; LP0668185 Mengersen, Phinn, Denham. $486,270. 2006-2008.

**2006** ARC Linkage Project. Bayesian statistical methods for enhancing evidence-based practice in Australia's hospitals; LP0669670 Mengersen, Johnson, Yates. $368,824. 2006-2008.

**2006** Australian Academy of Science. International French-Australian Science Exchange. $6,800. 2006-2007

**2005** NHMRC Capacity Building Grant in Genetic Statistics; Visscher, Mengersen. $443,750. 2005-2007

**2005** ARC Linkage Project, Quantification of Interactions During the Dispersion of Corona Ions and Airborne Particles Near Power Lines; LP0562205 Morawska, Jamriska, Birtwhistle, Mengersen. $300,430. 2005-2007.

**2005** ARC Linkage Project. Elicitation and Integration of Expert Information for Natural Resource Management with a Focus on Water; LP0560544 Johnson, Mengersen, Steven. $224,000. 2005-2006.

**2003** ARC Centre of Excellence in Complex Dynamic Systems and Control. Program Leader, Complex Systems and Modelling; CE0348165 Mengersen. Centre funding $7.5M; Program funding $1,372,946. 2003-2009.

**2003** ARC Linkage Project. Bayesian methodology for analysis of genome data with focus on livestock industry. LP0347344 Mengersen, Hetzel. $261,000. 2003-2004.

**2003** ARC Linkage Project, Dynamic Spatio-Temporal Approach to Environmental Health Modelling; DP0346777 Tong, Mengersen, Ren. $221,897. 2003-2005.

**2003** ARC Discovery Project. New Bayesian methodology for understanding complex systems using hidden Markov models and expert opinion, environmental, robotics and genomics applications. Mengersen. DP0344114 $60,000. 2003-2005.

**2002** ARC Linkage Project. A toolkit of statistical methodology for a state-of-the-art-software and decision support system for forest assessment using new airborne data; LP0214188 Mengersen, Witte. $135,000. 2002-2004.

**2002** ARC Linkage Project. Statistical methodology contributing to decision support capability for Evidence-based practice using two public hospitals in Brisbane as models for Australia; Mengersen, Pettitt, Wolff, Fleming, Whitby, Morton. $299,000. 2002-2004.

**2002** ARC SPIRT. Statistical methods for remote sensing analysis; Mengersen, Denham. $135,000. 2002-2004

**2000** ARC SPIRT. Statistical decision support for evidence based medicine; Mengersen, Pettitt. $298,000. 2000-2002

**2000** ARC SPIRT. Operational procedures for mapping biomass; Mengersen, Lucas. $42,000. 2000-2001

**1999** ARC Large Project Grant. New statistical methodology for applied Bayesian analysis; Mengersen, Pettitt; $187,000. 1999-2001

**1998** ARC Large Project Grant. Diagnostics for Markov chains using nonlinear time series; Wolff, Mengersen. $150,000. 1998-2000

**1998** ARC SPIRT. Decision support for biodiversity in forests. Mengersen, MacElwain. $160,000. 1998-2000

**SOFTWARE LIST**

**(with colleagues)**

bayesImageS: spatial analysis of images

Zmix: analysis of mixture models

Datapasta: data wrangling

Queuecomputer: simulation and analysis of queues

MBSGS: sparse group subgroup variable selection and regression for big data

*AusEnHealth:* Co-founder of an online national platform for environmental health with Frontier SI

*Virtual Reef Diver:* Co-founder of an online citizen science platform with Aust. Inst. Marine Sciences

**MAJOR REPORTS**

*Australian Bureau of Statistics:* United Nations Global Working Group on statistical machine learning methodology for new big data sources such as imagery, mobile phone, web and scanner data.

*Dairy Australia:* Analytics Scorecard with digital dashboard of social, environmental, economic complex systems.

*Queens Wharf Brisbane:* Design and rollout of 20 year longitudinal monitoring plan for QWB, leading to a broader program for other major infrastructure

Plan for Longitudinal Monitoring Study for *Queens Wharf Brisbane* ($3B project), commissioned by Queensland Government, 2018 (https://www.qut.edu.au/news?id=129808 )

White Paper on "Location Matters: Realising the Value of People-Centred Spatial Information to Inform Policy", commissioned by *CRCSI, Dept PMC, AIHW, WA Health*, 2017 (52 pp.)

**PUBLICATION LIST**

**Scholarly Books:**

1. A Morton, KL Mengersen, M Whitby, G Playford. Statistical Methods for Hospital Monitoring with R. Wiley, West Sussex, United Kingdom, ISBN 978-1-118-59630-2, 2013.

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