

Personal details

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Career objective

To achieve research and teaching excellence in the field of biostatistics, and its application over a range of health related disciplines.

Areas of research interest and expertise

- Clinical biostatistics. Especially, clinical trials, longitudinal methods for cohort studies, prognostic modelling and methods for diagnostic test development
- Analysis of complex datasets especially high dimension data from high-throughput Genetic, Genomic and Proteomic platforms
- Epidemiology of chronic diseases (esp. Diabetes, Hypertension and neoplastic diseases)
- Biostatistics: the analysis of data arising from medical, health and biomedical studies.
- Statistical computing and computer-intensive statistical techniques
- Multivariate methods

Key skills

- Experienced biostatistical consultant and research biostatistician with a strong background in biostatistical modelling, protocol development and study design
- Comprehensive experience in the management of research projects, and the management of many research projects at any one time (at any one time, I oversee 10-20 research projects)
- Excellent communicator, both oral and written
- Very experienced instructor in clinical biostatistics and related research methods
- Strong in both individual and collaborative research
- Excellent interpersonal skills
- Proven administrative skills

Educational background

1998-2005 Doctor of Philosophy (Applied Statistics)
 Griffith University

Thesis Title: Factors effecting the power and validity of Permutation-based Multivariate Tests for Difference among Ecological Assemblages

- 2007-2011 Masters of Biostatistics
Biostatistics Consortium of Australia
Home (awarding) university: University of Queensland.*
- 1995-1996 Bachelor of Science with Honours (First class) in Applied
Mathematics and Statistics, Faculty of Science, Griffith University
Honours Dissertation: An Application of Ordination and Discriminant
Function Techniques in Forensic Osteology
- 1992-95 Bachelor of Science in Environmental Sciences,
Faculty of Environmental Sciences, Griffith University
Major: *Quantitative modeling and statistics*

**Note: I didn't bother completing this degree (I already had my PhD). I undertook this program just for the knowledge and skills (not the qualification). I completed all subjects except the final subject (which required a 'reflection report' on what was learnt throughout the program). At this time I was already a Senior Lecturer in Biostatistics (so thought I had nothing to gain by undertaking this subject)*

Refereed publications

At this time I have over 60 research articles published in international peer-reviewed journals. Listed below are my articles published **in the last 5 years** (2011-2015). I have also included my *in press* articles (those accepted, but not yet published).

Note: Articles listed with a '★' are those for which I was corresponding and/or supervisory author (i.e. main intellectual driver).

Stallman, H. **Hurst, CP.** (*in press*) The University Stress Scale: Measuring domains and extent of stress in university students. *The Australian Psychologist*.

Photipim, M., Laohasiriwong., W., Thinkhamrop, B., Sethasathien, A. **Hurst, CP.**★ (*in press*) The effect of response time on survival among non-traumatic out-of-hospital cardiac arrest patients in Thailand. *Journal of Health Research*.

Thorberg FA, Young RM, Sullivan KA, Lyvers M, Hurst CP, Connor JP, Tyssen R, London ED, Noble EP, Feeney GF. (2016). A Longitudinal Mediatonal Study on the Stability of Alexithymia Among Alcohol-Dependent Outpatients in Cognitive-Behavioral Therapy. *Psychology of addictive behaviours*

Staton, SL., Smith SS., Hurst C., Pattinson, CL, Thorpe, KJ (2016) Mandatory nap times and group napping patterns in child care: An observational study. *Behavioral Sleep Medicine*, DOI: 10.1080/15402002.2015.1120199

Sieng, S., Thinkhamrop, B, **Hurst, C.P.** ★(2015) Achievement of processes of care for patients with type 2 diabetes in general medical clinics and specialist diabetes clinics in Thailand. *Epidemiology: Open access*

Piralam, B., Tomczyk, SM., Rhodes, JC., Thamthitiwat, S., Gregory, CJ., Olsen. SJ., Papasiri, P., Sawatwong, P., Naorat, S., Chantra, S., Areerat,P., **Hurst, CP.**, Moore, MR., Muangchana, C. Baggett, HC. (2015) Incidence of pneumococcal pneumonia among adults in rural Thailand, 2006-2011. *American Journal of Tropical Medicine and Hygiene*

Alumran, A., Hou, X., Sun, J., Yousef, A. **Hurst, C.** ★(2015) The Parental use of antibiotics in children in Saudi Arabia, *Epidemiology: Open access*

Hurst, CP.★ Thinkhamrop, B., Muktabhant, B. Tran. HT. (2015) Is Hypertension associated with Hyperglycemic complication among type 2 diabetics: A nationwide cross-sectional study in Thailand. *Journal of Diabetes and Metabolic Disorders.*

Wyatt, C., Lucas, RM, **Hurst, C.** Kimlin, MG. (2015) Vitamin D Deficiency at Melanoma Diagnosis Is Associated with Higher Breslow Thickness. *PLoS ONE* 05/2015; 10(5):e0126394. DOI:10.1371/journal.pone.0126394

Tran, HT. Thinkhamrop, B., Laohasiriwong, W., **Hurst, C.** ★(2015) The effect of hypertension comorbidity on the development of hypoglycemia in patients with type 2 diabetes. *International Journal of Diabetes in Developing Countries* 01/2015; DOI:10.1007/s13410-015-0379-z

Sieng, S., Thinkhamrop, B., Laohasiriwong, W., **Hurst, CP.**★ (2015) Comparison of HbA1c, Blood Pressure, and Cholesterol (ABC) control in Type 2 diabetes attending General Medical Clinics and Specialist Diabetics Clinics. *Diabetes Research and Clinical Practice* 02/2015; 108(2). DOI: 10.1016/j.diabres.2015.02.005

Panitchote,A., Charoensri, S., Chetchotisakd, P., **Hurst: C.** (2015) Pilot study of a non-return catheter valve for reducing catheter-associated urinary tract infections in critically ill patients.. *Journal of the Medical Association of Thailand = Chotmaihet thangphaet* 02/2015; 98(2):150-5.

Banu, S., Hu, W., Guo, Y., **Hurst, C.**, Tong, S. (2014) Projecting the impact of climate change on dengue transmission in Dhaka, Bangladesh. *Environment international* 63:137-142.

Plant, HC., Abhishek, S., Manton, KJ., Hollier, BG., **Hurst, CP.**, Stein, SR., Francis, GD., Beadle, GF., Upton, Z., Leavesley, DI. (2014) Differential subcellular and extracellular localisations of proteins required for insulin-like

growth factor- and extracellular matrix-induced signalling events in breast cancer progression. *BMC Cancer*.

Chatsantiprapa, K., **Hurst, C.**, Thepsuthammarat, K. Thapunkaw, N., Khrisanapant, W. (2014) Acute effects of hot red chili on autonomic and metabolic functions in healthy subjects. *Thai Journal of Pharmaceutical Sciences* 10/2014; 38(4):195.

Tribuddharat, S., Sathitkarnmanee, T., Ngamsangsirisup, K., Charuluxananan, S., **Hurst, CP.**, Silarat, S., Lertmemongkolchai, G. (2014) Development of an open-heart intraoperative risk scoring model for predicting a prolonged intensive care unit stay. *BioMed research international*. 01/2014; 2014:158051.

Reid, C., Courtney, M., Anderson, D., **Hurst, C.★** (2014) The ‘caring experience’: Testing the psychometric properties of the Caring Efficacy Scale. *International Journal of Nursing Practice* 06/2014;

Alumran, A., Hou, XY., Sun, J., Yousef, AA., **Hurst, C.★** (2014) Assessing the construct validity and reliability of the parental perception on antibiotics (PAPA) scales. *BMC Public Health* 14(1):73.

Lazzarini, P., Ng, V., Kinnear, E., Kamp, M., Kuys, S., **Hurst, C.**, Reed, L. (2014) The Queensland high risk foot form (QHRFF) - is it a reliable and valid clinical research tool for foot disease? *Journal of Foot and Ankle Research* 7(1): 1146-1157.

Luo, H., Turner, LR., **Hurst, C.**, Mai, H., Zhang, Y., Tong, S. (2013) Exposure to ambient heat and urolithiasis among outdoor workers in Guangzhou, China. *Science of The Total Environment* 472C:1130-1136.

Reid, C., Courtney, M., Anderson, D., **Hurst, C.★** (2013) Testing the psychometric properties of the Brisbane Practice Environment Measure using Exploratory Factor Analysis and Confirmatory Factor Analysis in an Australian registered nurse population. *International Journal of Nursing Practice* 11/2013;

Alumran, A., Hou, XY., **Hurst, C. ★**(2013) Assessing the overuse of antibiotics in children in Saudi Arabia: Validation of the parental perception on antibiotics scale (PAPA scale). *Health and Quality of Life Outcomes* **11**:39 doi: 10.1186/1477-7525-11-39

Sampson, D L, Chang, Y L, Upton, Z, **Hurst, C P**, Parker, A W, Parker, T J (2013) The High Abundant Urinary Metabolite, Urobilin, Interferes with the Bicinchoninic Acid Assay. *Analytical Biochemistry* 07/2013;

Alumran, A., Hou, XY., **Hurst, C.★**(2013) Assessing the overuse of antibiotics in children with URTIs in Saudi Arabia: Development of the parental perception on antibiotics scale (PAPA scale). *Journal of epidemiology and global health*. 3(1):3-10.

Auster, J., **Hurst, C.**, Neale, RE., Youl, P., Whiteman, DC., Baade, P., Janda, M. (2013) Determinants of uptake of whole-body skin self-examination in older men. *Behavioral Medicine* 39(2):36-43.

Reid, C., **Hurst, C.★**, Anderson, D. (2013) Examination of socio-demographics and job satisfaction in Australian registered nurses. *Collegian Journal of the Royal College of Nursing Australia* 20(3):161-9.

Thorberg, F.A., Young, R., Sullivan, K., Iyvers, M., **Hurst, C.**, Tyssen, R., Connor, J., Feeney, G (2012) A confirmatory factor analysis of the Observer Alexithymia Scale (OAS) in treatment seeking alcohol dependent patients. *Journal of Substance Use* 18(6):492-498

Rodger, S., Stephens, E., Clark, M., Ash, S., **Hurst, C.**, Graves, N. (2012) Productivity and Time Use during Allied Health Clinical Education: A Cohort Study. *PLoS One*

Reid, C., **Hurst, C.P.★**, Anderson, D. (2012) Examination of socio-demographics and job satisfaction in Australian registered nurses. *Collegian*
DOI information: 10.1016/j.colegn.2012.06.004

Banu, S., Hu, W., **Hurst, C.**, Guo, Y., Islam, M.Z., Tong, S. (2012) Space-time clusters of Dengue fever in Bangladesh. *Tropical Medicine and International Health* doi:10.1111/j.1365-3156.2012.03038.x

Mair S., Soyer H.P., Youl P., **Hurst C.**, Marshall A., Janda M. (2012) Personalised electronic messages to improve sun protection in young adults. *J Telemed Telecare*

Alumran, A., Hou, X., **Hurst, C.★** (2012) Validity and reliability of instruments directed to measure factors influencing overuse of antibiotics: A review article. *Journal of Infection and Public Health* (DOI: 10.1016/j.jiph.2012.03.003)

Stallman, H. M., **Hurst, C. P★**. (2011). Factor structure of the Frost Multidimensional Perfectionism Scale in university students. *Australian Psychologist*. **46(4)**: 229–236.

Alumran, A., Hou, J., **Hurst, C.**★ (2011) Antibiotics Overuse in Children with Upper Respiratory Tract Infections in Saudi Arabia: Risk Factors and Potential Interventions. *Clinical Medicine and Diagnostics* **1(1)**: 8-16

Thorberg, F.A., Young, R. M., Sullivan, K.A., Lyvers, M., **Hurst, C.**, Connor, J., Feeney, G. (2011) Attachment Security and Alexithymia in a Heavy Drinking Sample. *Addiction Research & Theory* **19(6)**: 566-70

Sampson, D.L., Parker, T.J, Upton, Z., **Hurst, C.P.**★ (2011) A comparison of methods for classifying clinical samples based on proteomics data: A cases study for statistical and machine learning approaches. *PLoS One* **6(9)**

Banu, S. Tong, S., Hu, W., **Hurst, C.** ★(2011) Dengue transmission in the Asia- Pacific region: Impact of climate change and socio-environmental factors. *Tropical Medicine and International Health* **16(5)**: 598-607

Thorberg, F.A, Young, R.M, Sullivan, K.A., Lyvers, M, **Hurst, C.**, Connor, J.P., Feeney, G.F.X, (2011) Alexithymia in alcohol dependent patients is partially mediated by alcohol expectancy. *Drug and Alcohol Dependency*

Submitted manuscripts: At this time I also currently have 9 manuscripts currently under review, and a further 8 to be submitted in the next three months.

Books and book Chapters

FitzGerald, Gerard Joseph, Shaban, Ramon Z., Arbon, Paul, Aitken, Peter, Considine, Julie, Clark, Michele J., Finucane, Julie, McCarthy, Sally M., Cloughessy, Liz, Holzhauser, Kerri, Patrick, Jennifer R., Fielding, Elaine L. and **Hurst, Cameron**, *Pandemic (H1N1) 2009 influenza outbreak in Australia : impact on emergency departments*. Published 2010; ISBN: 9781741073225

Michael Craig Steele, Neil Smart, **Cameron Hurst**, Janet Chaseling: A comparison of the power of the discrete Kolmogorov-Smirnov and Chi-Square goodness-of-fit tests.. *Some Recent Developments in Statistical Theory and Applications*, Edited by Kumar, Chaturvedi, 01/2012; , ISBN: 161233573-X

Research funding (2011-2015 only)

Note: all grants represented in Australian dollars (Note: 1 AUD = 30 THB)

Past and current funding

Project title (current): A prospective evaluation of the impact of the nurse practitioner role on emergency department service and outcomes

Funding: Australian Research Council (Linkage)

Amount: \$3, 000, 000 (AUD)

Role: Chief investigator (Biostatistician)

Project Title (current): E4Kids study

Funding: Australian Research Council (Linkage: 2010-2012)

Amount: \$5, 200, 000

Role: Chief investigator (Biostatistician)

Note: Principal investigator is Prof Karen Thorpe (one of my referees)

Project title: Development and validation of risk assessment tools to guide management and prevention of venous leg ulcers (Part of a larger project investigating new technology for wound healing)

Funding: Australian Research Council (CRC: 2010-2013)

Amount: \$3, 100, 000

Role: Chief investigator (Biostatistician)

Project title: A randomized trial of low intensity intervention model within a university health service to improve the mental health of students.

Funding: Australian Rotary Health (2010-2012)

Amount: \$70,000

Role: Chief investigator

Project title: Postoperative Enteral Nutrition in Patients with Advanced Epithelial Ovarian Cancers 631524 (2010-2012)

Funding: Cancer Australia

Amount: \$476,200

Role: Chief investigator and Biostatistician (with CIs: Obermair A, Janda M, Graves N, Bauer J)

Statistical consultation

- Over the last 20 years, I have been consulted in a statistical capacity on hundreds of research projects. A large majority of these consultations have been health-related studies, although a sizeable proportion has been in fields not directly concerned with health research.
- I have been consulted by countless students (undergraduate, post-graduate and research), colleagues (ranging from early career to very experienced) and clients outside of the university / research setting (e.g. Government and the private sector).
- I have extensive consultation experience in both clinical research design and data analysis. I have provided advice on a large number of grant applications, especially on matters of research design, analytical planning and sample-size

considerations. I have consulted regarding the design and analysis of projects ranging from rigorously designed RCTs to highly confounded observational studies.

- Consultations have ranged from one-off consultations, to full involvement in projects including considerable input into both the design (sampling and experimental) to the analysis phases of the project.

Research and higher degree supervision and assessment

- Currently supervising 13 PhD students (Epidemiology and Biostatistics)

Over the course of my career I have:

- Supervised 21 PhD students and eight research masters student through to successful completion.
- Attained Principal Supervision Accreditation from my previous 2 universities.
- Been consulted by hundreds of research students regarding analytical planning, statistical and research methods advice.
- Have examined many PhD and Research Master theses, and been a panel member on many PhD proposal and final defence seminars

Academic history

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| 2012- | Associate Professor (Biostatistics), Data Management and Statistical Analysis Center (DAMASAC), Faculty of Public Health, Khon Kaen University |
| 2012- | (Principal) Clinical Biostatistician, Clinical Epidemiology Unit, Faculty of Medicine, Khon Kaen University |
| 2009-2012 | Senior Lecturer (Level C), Biostatistics, School of Public Health, Faculty of Health, Queensland University of Technology |
| 2007-2008 | Institute Biostatistician (Level B), Institute of Health and Biomedical Innovation, Queensland University of Technology |
| 2005-2007 | Lecturer (Level B), Applied Statistics, School of Information Technology and Mathematical Sciences, University of Ballarat |

- 2002-2004 Associate Lecturer (Level A), Applied Mathematics and Statistics. School of Information Technology and Mathematical Sciences, University of Ballarat
- 2000-2002 Sessional Lecturer, Applied Mathematics and Statistics (Griffith University)
- 2000-2002 PhD scholarship-Australian Postgraduate Award with Stipend (Griffith University)

National and international workshops

International workshops

Over the last five years (2011-present), I have run many workshops on clinical biostatistics, clinical epidemiology and clinical research methods in both Thailand (Khon Kaen, Mahidol and Chulalongkorn Universities, Royal College of Ophthalmologists) and Vietnam (Vietnamese Epidemiology Special Interest Group, Ho Chi Min City University of Medicine and Pharmacy, Hue University of Medicine and Pharmacy and Nguyen Tri Phuong Hospital).

These workshops have ranged from introductory through to more advanced clinical biostatistics and clinical epidemiology topics and on some occasions involved presenting novel and state-of-the-art statistical methods (specifically for the analysis of high throughput genomic and genetic data, and the analysis of data arising from longitudinal cohort studies). In general, attendees of the workshops have been postgraduate, MDs (enrolled in clinical epidemiology programs) or post-doctoral participants, and biostatistical/epidemiological academics and/or researchers. In almost all workshops there has been a strong emphasis of the open-source *R* statistical language.

National workshop (Australia)

Microarray Data Analysis using R and Bioconductor (2009) A national workshop held at the Institute of Health and Biomedical, QUT. A three-day workshop solely developed and delivered by myself.

Mater Research institute (2011): Workshop on clinical research methods. A two-day workshop solely developed and delivered by myself.

Queensland health (2011): The workup of psychometric and clinimetric tools for health evaluation and diagnostics. A two-day workshop solely developed and delivered by myself.

Traditional (University) teaching

Below is a list of subjects for which I have **convened/coordinated**, lectured and/or *tutored*.

<i>First year subjects</i>	<i>Second year subjects</i>	<i>Third year, Honours and Postgraduate subjects</i>
Business Statistics (UB)	<i>Statistical Inference (GU)</i>	Applied Statistics (GU)
Mathematics for the Environment (GU)	<i>Experimental Design and Statistics (UB)</i>	Mathematical Techniques (GU)
Statistics and Data Management (GU)	Research Methods (GU)	Multivariate Analysis (UB)
Statistics for the Environment (GU)	Operations Research I (GU)	Modeling Reality (UB)
Introduction to Modeling (UB)	<i>Engineering Mathematics II (GU)</i>	Adv Multivariate Methods (UB)
Environmental Systems Modeling (GU)	<i>Mathematical Methods (GU)</i>	Health Statistics (Masters QUT)
<i>Statistics I (GU)</i>	Applied Mathematics II (Engineers; UB)	Advanced Quantitative Research Methods (Masters QUT)
<i>Statistics II (GU)</i>	Statistics for Prediction (UB)	
Sampling and Survey Design (UB)	Profit, Loss and Gambling (UB)	
Statistics for Public Health (GU)	Statistics for Public (QUT)	
Introduction to Epidemiology (GU)	Advanced Research Methods (QUT)	
Statistical Methods (UB)		
<i>Statistics for Nurses (UB)</i>		

GU = Griffith University; UB = University of Ballarat; QUT = Queensland University of Technology

Curriculum and teaching material development

Over the course of my career I have developed approximately 25 statistics, biostatistics, research methods and clinical epidemiology subjects (or programs), ranging from introductory to advanced units. In these units, I either had to develop them from the ground up, or at the very least, perform a major rework of the subject's fundamental content and/or structure.

In my capacity as biostatistician, and over the course of my international engagements, I have developed a large number of specialised seminars and workshops regarding the application of biostatistical and research methods to

clinical/health related research. In terms of delivery, these workshops have ranged from informal to formal, and in content, from introductory to advanced.

Statistical computing and application development

Statistical computing represents a major interest for me. I have extensive experience in a number of programming languages and statistical / mathematical analysis packages. These include:

Statistical and mathematical languages/packages (in order of expertise):

(1) R; (2) SAS; (3) Stata; (4) SPSS(incl. AMOS); (5) Minitab; and (6) MATLAB;

Programming languages (in order of expertise):

(1) Java; (2) C/C++; (3) Visual Basic (v6); (4) Pascal; and (5) Fortran 77.

Organizational roles and memberships and other service

- 2012- Deputy director (Academic affairs), Data management and Statistical Analysis Centre (DAMASAC), Faculty of Public Health, Khon Kaen University
- 2013- Member of the management committee - PhD (Epidemiology and Biostatistics), Faculty of Public Health, Khon Kaen University
- 2013- Member of the management committee - Masters of Health Science (Clinical Epidemiology), Faculty of Medicine, Chulalongkorn University
- 2010-2011 Membership of Faculty of Health committees/Boards: Health Academic Board, and FOH-Teaching and Learning Committee
- 2010-2011 Membership of School of Public Health committees: Public Health Executive Committee, and SPH Learning and Teaching Committee
- 2011- Postgraduate Coordinator, School of Public Health, Faculty Health, Queensland University of Technology.
- 2009-2010 Subject Area Coordinator, Public Health. School of Public, Faculty of Health, Queensland University of Technology.
- 2009-2011 Public Health staff representative on Teaching and Learning Committee. Faculty of Health (QUT)
- 2009-2011 Expert reviewer on QUT internal Early Career Researcher and Mid-Career Researcher Grants

- 2007- Peer reviewer on many submitted journal articles
- 2005-2007 Staff representative on the Research and Professional Development Group committee (University of Ballarat)
- 1995- Member of the Statistical Society of Australia

Referees

Professor Michael Dunne

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Manager QUT-Vietnam Public Health curriculum development program,
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Professor Karen Thorpe

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Associate Professor Janet Chaseling (former PhD supervisor)

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