

Faculty of Science: 2019 Report for the Queensland Centre for Population Research



Queensland Centre for Population Research

Message from the Director of the Centre

First established in 2001, the Queensland Centre for Population Research (QCPR) is supported by the School of Earth and Environmental Sciences (SEES) operating as a school-level centre. QCPR wishes to express its thanks to the School, Faculty of Science and Vice Chancellor's Strategic Research Fund for ongoing support allied with the significant backing of the Queensland Government Statistician's Office. This report provides a summary of Centre activities during the period January 2019 to March, 2020.

QCPR is established to:

- provide a focus for pure and applied research on population-related issues, particularly those relating to Queensland, but also encompassing issues of national and international significance;
- develop and enhance the provision of training in demographic methods and the analysis of population-related issues, within and beyond UQ;
- promote and advance understanding of population dynamics, their origins, processes and implications throughout academia, governments, and the community; and,
- serve as a focal point for demographic research at the University of Queensland.

QCPR Priority Areas

Five guiding themes underscore the structure and foci of the Centre:

1. *Demographic Analysis and Forecasting*

Demographic analysis and forecasting is the central pillar of our collaborative research partnership with the Queensland Government Statisticians Office (QGSO). QCPR contributes to a range of priority projects that have demonstrated ongoing impact on government policy and practice both at the State and Local level. Impact has been via the provision of models to project population and households, school enrolment demand models, child and community care adequacy assessment models, reviews of QGSO population estimation methodology and analyses of change in population, household and family distribution and structure within Queensland. This work informs the development of the South East Queensland Regional Plan and other policy instruments. This impact is grounded by rigorous empirical research that promotes and enhances our understanding of complex population dynamics, their origins and processes.

In 2019, QCPR were successful in obtaining a \$1.2 million grant through the iMove Cooperative Research Centre partnering with the Queensland Department of Transport and Main Roads and QGSO to develop an Integrated Demographic and Transport Demand Modelling Framework. The ground-breaking work seeks to develop a responsive tool for modelling the impact of demographic, land use and infrastructure change on transport behaviours.

QCPR is also involved in an assessment of the *Queensland Housing Strategy* for the Department of Housing and Public Works in partnership with UQ's Institute for Social Science Research (\$833K) providing expert demographic advice.

In addition to our research, members of QCPR have also provided advice to state government through fora including the South East Queensland Housing Supply Expert Panel (Charles-Edwards) and the Crime Research Reference Committee (Corcoran) as well as to the federal government via membership of the expert panel for the Centre for Population (Corcoran) and 2019 and 2020 to the Department of Home Affairs Migration Roundtable (Charles-Edwards).

2. Internal and International Migration

QCPR is a national and international leader in the field of internal migration research. We have strong international research collaborations with other major centres of demographic expertise, including The Asian Demographic Research Institute at Shanghai University and the Max Planck Institute of Demographic Research, Germany. In 2019, centre staff undertook collaboration with extra-national organisations including the OECD and UNESCO. In 2019, QCPR staff published 11 journal articles in the field of internal and international migration, and co-edited a book on Internal Migration in the Countries of Asia with 20 scholars from 15 countries in Asia (Springer 2020). QCPR staff were awarded two Australian Research Council Discovery Projects in the 2020 round as lead CIs. In 2019, Emeritus Professor Martin Bell was appointed as a Fellow of the Academy of Social Sciences Australia for his work on internal migration.



Rising Star: Aude Bernard At a FTE of four years post PhD, Aude has already accrued category A and B grant funding totalling 1.8 million, including three ARC Discovery projects of which one as sole CI (DECRA) one as lead CI and a third as second CI. She is rapidly establishing an international reputation as an innovative migration scholar, with sole and first-authored publications in leading demographic journals. Her scientific excellence has been recognised with guest speaker invitations by the OECD and consultancy work as lead author for the UNESCO. In 2018 she received the IPUMS International Research Award for a global assessment of the educational selectivity of migrants.

In addition to our work on internal migration, QCPR has a significant research profile in environmental migration through the work of A/Prof McNamara. A prolific researcher, Dr McNamara is a Steering Committee member of the global Population-Environment Research Network (2019-2022) and has reviewed multiple chapters for the Intergovernmental Panel on Climate Change sixth assessment report as well as securing an ARC Future Fellowship in 2019.

3. City Science (Urban Regional Spaces and Flows)

Given that cities are the most important change agent globally functioning as economic drivers, innovation and knowledge capitals, and lifestyle and education centres for the world's rapidly urbanising populations, QCPR has sought to grow its profile in this space. More specifically, QCPR has an active research agenda in the field of city science, with a focus on intra-urban mobility. A current flagship project has been an ARC Linkage Project *Reclaiming lost ground: Transitions of mobility and parking*, which aims to understand the role of parking in mobility, urban consolidation, and transit-oriented development. This project has compiled the first comprehensive parking inventory data set for Brisbane, Melbourne and Sydney and led discussions in academic and policy arenas to shine a new light on how car mobility and immobility (i.e. parking) are persistent urban problems. The discussions and associated academic outputs have considered how new transitions and trends in land-use and transport, including car-sharing and automated vehicles, and the revival of urban living, raise important questions concerning how cities might redesign and repurpose urban space – the project have delivered on generating a new evidence base and toolkit to determine how best to repurpose

the space currently accommodating private motor vehicles to make cities more attractive, efficient, liveable places.

QCPR continues to develop this research theme around three initial themes:

1. PEOPLE – social and demographic change, sustainable behaviours, civic governance and public participation.
2. PLACE – urban sustainability, with a focus on minimising impacts on finite resources and adapting to growing challenges including climate change.
3. PRACTICE – design-led and policy approaches and industry capability to accelerate shift to sustainable cities.

Led by A/Prof Liu, QCPR has drawn on both established and emergent national and international collaborations for city-related research such as East China Normal University (ECNU) Sustainable Shanghai, Jakarta and Gold Coast and funded by ECNU to continue to build and profile this thematic area.

4. Economic Change and Globalisation

A fourth research priority is related to economic change and globalisation. This theme is led primarily by Dr Thomas Sigler and Prof Jonathan Corcoran, and incorporates a number of PhD students (Adeniyi, Mahmuda, Sobyra) and research associates (Loginova, Panczak). A major focus in 2019 was the sharing economy. QCPR was awarded an ARC Discovery Project in *Who Benefits from the Sharing Economy? Disruption in Australian Cities (2020–2022)*. This project seeks to provide new empirical evidence to explain transformative change in cities and knowledge as to who benefits from the sharing economy, and how progressive regulation can enhance the outcomes of disruptive technologies. A number of key collaborations have emerged through this, including with the University of Sydney and McGill University. Dr Sigler and Prof Corcoran are currently editing a book on the urban sharing economy (Edward Elgar Publishing), which will be in press by late 2020. The edited volume features 21 chapter contributions from notable scholars in sharing economy research around the world.



Rising Star: Julia Loginova Julia graduated from the University of Melbourne in April 2019 supported by the Australian Postgraduate Awards scholarship. She is currently undertaking her second post-doctoral research fellowship at the QCPR displaying an emerging international profile in human geography with sole, first-authored and co-authored publications. Julia's academic merit has been recognised by her selection to participate in the highly competitive 10th Summer Institute of Economic Geography, the 2019 SEES's Early Career Research award, and competitive grants to attend international and national conferences. She is an invited member of the International Panel on Arctic Environmental Responsibility since 2018.

QCPR researchers in the economic theme also continue to work closely with individuals from previous UQ positions, including Dr Jiangping Zhou (currently, HKU) and A/Prof Glen Searle. Between these and other collaborations, members of QCPR have published numerous high impact papers related to economic change in globalisation, with several more under review in key international journals including PLOS One and Economic Geography.

5. Enhancing the provision of training in demographic methods within and beyond the University of Queensland

QCPR has continued its commitment to the provision of demographic training to the University of Queensland with a current cohort of 30 PhD students. QCPR students have participated in internships with our funding partner, the Queensland Government Statisticians Office. QCPR students have an excellent track record in publication in peer reviewed journals as well as publishing multiple pieces in *The Conversation*.



Rising Star: Dr Annah Piggott-McKellar submitted her PhD thesis for examination in December 2019. The feedback from the examiners was excellent, and Annah was awarded her PhD with no changes required. Following an extremely competitive process, Annah is now working full-time in the School of Geography at the University of Melbourne as a Postdoctoral Research Fellow. During Annah's time as a PhD student, she published five journal papers based on her PhD – an outstanding effort – including in high-impact journals such as *Regional Environmental Change* and *Local Environment*. She also published an article in *the Conversation* that received over 18,713 views.

Strategic Overview of the Centre's Research Activities

QCPR is configured in a manner to contribute across all four of the Faculty of Sciences objectives as outlined in the Strategic Plan.

Under Objective One (*transform students into game changing graduates*), QCPR has developed a broad suite of training in sought after demographic skills to its growing cohort of research and PhD students. Our PhD graduates have transitioned and excelled in a variety of occupations post-graduation including academic, government and the private sector including the University of Melbourne (Piggott-McKellar) and Queensland Land and Spatial Information Unit (Pickering).

Under Objective Two (*deliver globally significant solution to challenges*), through its five guiding themes, QCPR delivers research excellence on a number of fronts.

- First, through its very high success rate in the ARC Linkage, Discovery and Fellowship schemes and via which we have sought to ensure and embed a culture of including ECR and MCR researchers into grants, where possible. It is with this level of success that is backed through high quality publications that we have positioned the Centre to continue to deliver high quality results in the Excellence in Research for Australia (ERA) process (under the FoR, 1604) and we are confident that in the next round (2023) we have positioned UQ to be competitive (for the first time) for a 5 in 1604 (Human Geography).
- Second in terms of engagement and impact, as a Centre that has a focus on applied research we engage primarily with government (at all levels) and develop innovative empirical solutions that are used by government to, project population and households, enumerate changing demand for school enrolment, and assess child and community care adequacy to name a select few. The Centre stands as a showcase for successful translation of research to address practical problems that continue to vex governments around the world.

- Third in terms of research infrastructure; our recent iMove project has allowed the Centre to upgrade and expand its research infrastructure ensuring it is world-class and able to meet the growing demands by Centre staff and its collaborators, as well as meeting our future aspirations in growing the Centre's international profile and impact. Parallel with this process the Centre has actively engaged in centralising as much of the computing infrastructure and its management as possible.

Under Objective Three (*attract and retain outstanding staff*), QCPR seeks through both its grant and strategic funding to nurture its ECRs/MCRs into world-class scholars. This is primarily through the ARC fellowships (DECRA and Future Fellowship) both of which we have enjoyed success in and an excellent pathway through which we are able to both attract and retain our best and brightest. Furthermore, we actively seek to involve Centre staff into teaching opportunities to ensure we prepare them for a number of possible career pathways. Embedded throughout the attraction, retention and promotion of Centre staff is a deep commitment to ensure equity, diversity and inclusion.

Under Objective Four (*expand business development and maintain financial sustainability*) we have continued to seek funding opportunities beyond the traditional preserves of the Centre – i.e. the ARC. This focus has seen recent success nationally in the CRC iMove project and internationally with project funding from East China Normal University (ECNU). As the Centre now has a critical mass of senior and experienced staff, this is a model of diversification will continue to be pursued helping to ensure financial sustainability.

Centre Membership in 2019

Title	First name	Last name	School	FTE	For academic staff, nominate level A/B/C/D/E. For professional/technical staff, nominate HEW level.
Dr	Aude	Bernard	SEES	0.8	B
Dr	Elin	Charles-Edwards	SEES	1.0	C
Em/Prof	Martin	Bell	SEES	n/a	E
Mr	James	Cooper	SEES	0.8	C
Prof	Jonathan	Corcoran	SEES	1.0	E
Dr	Jiafei	Hu	SEES	1.0	A
Dr	Anthony	Kimpton	SEES	1.0	A
Dr	Scott	Lieske	SEES	1.0	B
A/Prof	Yan	Liu	SEES	1.0	D
Dr	Julia	Loginova	SEES	1.0	A
A/Prof	Karen	McNamara	SEES	1.0	D
Dr	Radoslaw	Panczak	SEES	1.0	A
Dr	Svitlana	Pyrohova	SEES	1.0	A
Dr	Thomas	Sigler	SEES	1.0	C
Dr	Sisi	Wang	SEES	1.0	A
Dr	Pia	Wohland	SEES	0.8	B

Numbers of **virtual** members of the Centre.

Faculty of Science	Elsewhere in UQ	Outside of UQ
0	0	0

Grants in 2019

Total Research Income for the Centre in 2019 was \$ 7 million

Break down into grants that were awarded in 2019 and grants that were active in 2019

Grants Awarded 2019				
<i>Lead CI</i>	<i>Funding Body</i>	<i>Dates of Grant</i>	<i>Total Amount Awarded</i>	<i>Amount in 2019</i>
Charles-Edwards	ARC DP: Asian Migration in the 21st Century: An Integrated Account	2020-2022	167,911	0
Bernard	ARC DP: Where migrants go: A study of immigrants' post-arrival moves in Australia	2020-2022	220,311	0
Sigler	ARC DP: Who Benefits from the Sharing Economy? Disruption in Australian Cities	2020-2022	302,343	0
Wachsmuth (Sigler QCPR)	Canadian SSHRC Insight Grant: Cities, Short-term Rentals and the Sharing Economy: Housing Impacts, Social Dynamics, and Policy Options	2019-2021	464,000	0
McNamara	ARC FF: Working through loss from climate change in the Pacific Islands	2020-2024	875,778	0
Hunter (Liu, Corcoran QCPR)	Australian Research Data Commons (ARDC): The Australian Transport Research Cloud (ATRC)	2020-2023	1,482,000	0
Wickes (Corcoran QCPR)	ARC DP: Everyday guardianship: A space time approach to crime prevention	2020-2022	365,706	0
Wohland	CRC-iMove: An Integrated Demographic and Transport Demand Modelling Framework (ID-TDM)	2019-2022	1,209,648	121,000
Sigler	Qld TMR: Short Term Rentals in Australia	2019-2022	8,642	8,642
Liu	National Natural Science Foundation of China (NSFC) grant: Ventilation based planning methods to respond urban haze supported by multi-source spatial-temporal big data	2019-2022	140,000	35,000
Liu	Open Fund of Key Laboratory of Geographic Information Science (Ministry of Education), East China Normal University: Coastal Cities: Environmental Evolution, Climate Change, and Human Adaptation	2019	47,000	47,000

Liu	UQ TPRN: Understanding socio-spatial connectedness for older people from culturally and linguistically diverse (CALD) backgrounds: Testing a mixed-methods approach	2019	17,022	17,022
Liu	ASSA: Ageing well: Place, belonging, and well-being of older Chinese in Australia and China	2019	7,000	7,000
Lieske	BIRRS-SWIF: SCIENCE WITH IMPACT FUND: Developing culturally appropriate, collaborative resource mapping techniques with Indigenous communities: North East Arnhem Land, Northern Territory	2020	29,675	0
Lieske	UQ TPRN: Factors motivating bicycling in Australian Capital Cities	2019	24,996	24,996

Grants Active in 2019				
<i>Lead CI</i>	<i>Funding Body</i>	<i>Dates of Grant</i>	<i>Total Amount Awarded</i>	<i>Amount in 2019</i>
Bernard	ARC DECRA: Understanding the Long-Term Decline in Internal Migration	2016-2020	374,360	93,590
Charles-Edwards	ARC LP: Estimating Temporary Populations	2016-2019	362,000	42,706
Brooks (Corcoran QCPR)	ARC DP: So what do you do? Graduates in the Creative and Cultural Industries	2016-2019	270,477	0
Corcoran	ARC DP: Barriers and Facilitators of Neighbourhood Networks and Cohesion	2015-2019	295,137	0
Corcoran	ARC LP: Reclaiming lost ground: transitions in mobility and parking	2016-2019	340,000	37,500
Liu	ARC DP: New modelling approaches for sustainable coastal city development	2017-2019	308,000	105,000
Liu	Qld DEHP: Improved Offsets for Koala Conservation	2017-2020	88,000	88,000
McMichael (QCPR McNamara)	ARC DP: Sea-level rise and everyday lives in small island states	2019-2022	445,000	147,000
McNamara	ARC LP: Transformative human mobilities in a changing climate	2019-2022	379,768	162,039
McNamara	ARC LP: Optimising community-based climate change adaptation in the Pacific Islands	2016-2019	180,098	25,049
Sigler	ARC DP: The globalisation of the resources sector(s) in Australian cities	2017-2020	222,074	49,519

Appendix One: List of Centre members by name and affiliation

Staff member's name	Brief profile	Thematic Area of QCPR	Affiliation
Prof (Emeritus) Martin Bell	A quantitative demographer whose primary interests lie in robust measurement of internal migration and temporary population mobility in a cross-national context.	Demographic analysis and forecasting	UQ-SEES
Dr Aude Bernard	Aude's research focuses on understanding migration processes and their consequences for individuals, regions and nations from a demographic perspective. Most of her work is comparative and has a strong methodological focus to allow robust comparisons over time and between countries, including Australia. She is the co-editor of the Journal of Population Research.	Internal and International migration	UQ-SEES
Dr Elin Charles-Edwards	Elin is a population geographer with research interests in mobility, migration, and small area population change. She is the co-editor of Australian Population Studies and a member of the editorial board of Population, Space and Place. She is a member of the SEQ Housing Supply Expert Panel, providing demographic expertise.	Internal and International migration	UQ-SEES
Mr Jim Cooper	Jim has a research focus on the development and refinement of models for population analysis and forecasting, particularly at small area level. These are used for population, household and family projections as well as forecasts such as the demand for services and facilities for Early Childhood and Community Care and the impact of proposed new schools on the level of enrolments, by grade and year, in all affected schools.	Demographic analysis and forecasting	UQ-SEES
Prof Jonathan Corcoran	Jonathan's research interests lie in the fields of Population Geography, Spatial Science and Regional Science. Through a quantitative spatial lens he contributes to methodological and theoretic understandings across topics including human mobility and migration, human capital, and social problems. He is the co-editor of Australian Population Studies and Secretary of the Applied Geography Commission, a commission of the International Geographical Union.	Urban regional spaces and flows	UQ-SEES
Dr Jiafei Hu	Jiafei's research focuses on empirical studies in applied microeconomics, especially in the areas of urban economics and labour economics. She is currently analysing how shifts in fare structures impact travel behaviours of public transit riders and identify how sensitive public transportation users in South East Queensland are to price changes.	Urban regional spaces and flows	UQ-SEES

Dr Anthony Kimpton	Anthony's research interests include developing tools for spatio-temporal analysis and visualisation, and repurposing big data for examining how transport and land use planning influences urban social sustainability. His overarching research aim is strengthening evidence-based policy to create equitable and smart cities where communities are safe, inclusive, cohesive and ultimately, sustainable.	Urban regional spaces and flows	UQ-SEES
Dr Scott Lieske	Scott's research interests are in using spatial tools, data and technology for built environment and natural resources policy development and decision making. Research topics include city analytics; analysis of crowdsourced human movement data, hedonic modelling in support of urban infrastructure development, the relationship between urban morphology, infrastructure and services.	Urban regional spaces and flows	UQ-SEES
Dr Julia Loginova	Julia's research focuses on geographies of globalisation, population and development in which she is concerned with building a greater sensitivity to 'peripheral' (physically, economically and politically isolated or excluded) regions and populations. Using qualitative and quantitative methods, she researches firm and city networks, Indigenous population dynamics, and relational dynamics in resources industry. Julia also involved in developing value added data products, such as interactive dashboards.	Economic Change and Globalisation, Urban regional spaces and flows	UQ-SEES
A/Prof Yan Liu	Yan's research focuses on GIS, spatial analysis and modelling. She develops and applies cellular automata and agent based models to describe, understand, simulate and predict urban and human change dynamics and processes. She also develops spatially integrated analytical and modelling approaches for applications in social geographic research including spatial accessibility modelling, spatial inequality in health and wellbeing, neighbour relations, spatial travel behaviours, participatory GIS, and spatial science education. She is the co-editor of the Journal of Spatial Science and the Editorial Board member of Environment and Planning B: Urban Analytics and City Science.	Urban regional spaces and flows	UQ-SEES
A/Prof Karen McNamara	Karen is a human geographer that is ultimately concerned with livelihoods and how people make and sustain a living in diverse places throughout the Asia-Pacific region. Resilience and sustainable livelihoods is the pivot by which she explores a host of issues, most notably climate change impacts and adaptation, disaster risk, development issues and the relocation of people from their	Internal and International migration	UQ-SEES

	<p>homelands. Karen is the Pacific Editor for the journal Asia-Pacific Viewpoint and serves on the Editorial Boards of a number of other journals, and is a Steering Committee member for the global Population-Environment Research Network.</p>		
Dr Svitlana Pyrohova	<p>Svitlana is a transport engineer interested in the role of transportation in urban space. The areas of her research include transport infrastructure and land use modelling, spatial analysis, accessibility, public transport, and social aspects of urban mobility. She studies how long-term decisions of people where to live and work are related to short-term mobility choices of the day-to-day activity and travel.</p>	Urban regional spaces and flows	UQ-SEES
Dr Thomas Sigler	<p>Thomas is an urban and economic geographer with an interest in the impacts of globalisation in contemporary cities. He applies a mixed-methods approach to a number of interrelated projects focussing on global firm geographies, economic networks, digital economies, and housing & residential mobility. He is on the editorial boards of Urban Geography and Geographical Research.</p>	Economic Change and Globalisation	UQ-SEES
Dr Sisi Wang	<p>Sisi Wang's research interests focus on urban geography, population studies, and urban modelling and simulation. Specific topics include international migration, human mobility and settlement, neighbourhood problems, travel behaviour, and the effects of climate change on residential location decisions. She is an honour member of Gamma Theta Upsilon (The International Geographic Honour Society) and a reviewer of Australian Geographer, The Journal of the Economics of Ageing, International Migration Review, EPA-Economy and Space.</p>	Urban regional spaces and flows	UQ-SEES
Dr Pia Wohland	<p>Pia is a health geographer with expertise in: health inequalities – across geographical areas, time, and population subgroups; population projections for local areas and population subgroups; population aging. Pia has worked on a wide range of projects including research in ethnic mortality in the UK and health differences for local areas in the UK and across European countries and has done extensive work projecting the population of UK ethnic groups. She is also a data scientist who is skilled in developing value added data products.</p>	Demographic analysis and forecasting	UQ-SEES

Appendix Two: Copy of VC Strategic Funding Annual Report (if applicable)

Funding for QCPR is via the Transport and Population Research Network (TPRN) – a VC Strategic Project (2017-2021). A copy of the TPRN annual report is supplied as an annex to this Report.

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CRICOS Provider Number 00025B