





# Francisco Rowe

Geographic Data Science Lab  
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## RESEARCH INTERESTS

My research sits at the intersection between social and computational sciences focusing on human mobility and migration. It has a policy focus and seeks to advance our understanding of the causes and impacts of human movements for communities and individuals, particularly within urban areas. My work has developed from substantive interests around the socio-economic, spatial and temporal dimensions of population movements, focusing on spatial and socio-economic inequalities, urban sustainability and regional decline. My most recent work has expanded to understanding mobility systems through the novel application of geographic data science methodologies and digital footprint data seeking to understand the geography and impacts of population movements in near-real time at high spatio-temporal resolutions.

## EDUCATION

- Ph.D. 2013 - Economic Geography, University of Queensland, Brisbane, Australia.
- M.S. 2007 - MSc in Regional Science, Universidad del Norte, Antofagasta, Chile.
- B.S. 2006 - BA in Business Management with specialisation in Economics, *summa cum laude*, Universidad del Norte, Antofagasta, Chile.

## PROFESSIONAL TRAINING AND QUALIFICATIONS

- 2023 Heilbron Leadership Programme. The University of Liverpool, Liverpool, United Kingdom.
- 2018 Certificate in Professional Studies in Learning and Teaching in Higher Education (CPS) - Distinction. The University of Liverpool, Liverpool, United Kingdom.
- 2014 Spatial Scientist. VETASSESS, Brisbane, Australia.

## APPOINTMENTS

### Current appointments

- 2023– Professor in Population Data Science  
Department of Geography and Planning, University of Liverpool, Liverpool, United Kingdom
- 2022– Chair  
Quantitative Methods Research Group, The Royal Geographical Society with the Institute of British Geographers, United Kingdom.
- 2022– Secretary  
Steering Committee of the International Geographical Union (IGU) Commission on Population Geography, United Kingdom.

- 2020–     Lead of the Geographic Data Science Lab  
Department of Geography and Planning, University of Liverpool, Liverpool, United Kingdom
- 2020–     Visiting Professor  
National Tsing Hua University, Taiwan.
- 2021–     Visiting Professor  
Data Science Institute, Universidad del Desarrollo, Santiago, Chile.

### **Past appointments**

- 2018–23   Senior Lecturer in Quantitative Human Geography  
Department of Geography and Planning, University of Liverpool, Liverpool, United Kingdom
- 2018–22   Office of National Statistics, Government Statistical Service Advisory Committee. Use of administrative data.
- 2018–22   Institutional Lead of the Longitudinal Data Analysis Specialised Training Route  
Economic and Social Research Council - North West Social Science Doctoral Training Partnership, United Kingdom.
- 2021–22   Events Officer  
Population Geography Research Group, The Royal Geographical Society with the Institute of British Geographers, United Kingdom.
- 2016–18   Lecturer in Quantitative Human Geography  
Department of Geography and Planning, University of Liverpool, Liverpool, United Kingdom
- 2013–16   Postdoctoral Research Fellow  
School of Geography, Planning and Environmental Management, The University of Queensland, Brisbane, Australia.
- 2014–16   ResTeach Fellow  
School of Geography, Planning and Environmental Management, The University of Queensland, Brisbane, Australia.
- 2010–13   University Tutor  
School of Geography, Planning and Environmental Management; The University of Queensland, Brisbane, Australia.
- 2010–13   Research Assistant  
Queensland Centre for Population Research, School of Geography, Planning and Environmental Management, The University of Queensland, Brisbane, Australia.
- 2010–11   Research Assistant  
Queensland Centre for Population Research, School of Geography, Planning and Environmental Management, The University of Queensland, Brisbane, Australia.
- 2008–09   Research Officer  
Millennium Nucleus for Regional Science and Public Policy. The Chilean Ministry of Planning and Universidad Católica del Norte, Antofagasta, Chile.
- 2007–08   Research Analyst  
CONYMET, Antofagasta, Chile.
- 2007–08   Lecturer (Part-Time),  
Faculty of Business and Economics, Department of Economics, Universidad Católica del Norte, Antofagasta, Chile.

2007 Lecturer (Part-Time),  
School of Business Management, Universidad Santo Tomás, Antofagasta, Chile.

## EDITORIAL ROLES

- 2022– Managing Editor  
REGION. The Journal of the European Regional Science Association.
- 2024– Editorial board member  
Population, Space and Place.
- 2023– Editorial board member  
Spatial Economic Analysis.
- 2023–24 Guest Editor  
Special Issue: CATMOG2.0: ComputAtional noTebooks to enable MOdern Geographic data analysis. REGION. The Journal of the European Regional Science Association.  
Co-editors: Gunther Maier, Levi Wolf, Qunshan Zhao, Caitlin Robinson, Alessia Calafiore, Elisabetta Pietostefani and Stephen Law.
- 2023–24 Guest Editor  
Special Issue: GeoAI for Urban Sensing. Urban Informatics.  
Co-editors: Yuhao Kang, Arianna Salazar-Miranda, Yiyi He and Song Gao.
- 2023–24 Guest Editor  
Special Issue: Sustainable spatiotemporal analytics with repeatable, reproducible, and expandable (RRE) framework and design. International Journal of Applied Earth Observation and Geoinformation.  
Co-editors: Siqin Wang, Xiao Huang, Filip Bijjecki and Veruska Muccione.
- 2021–23 Social Media Editor  
Journal of Royal Statistical Society – Series A
- 2022–23 Guest Editor  
Special Issue: Internal Migration in Times of COVID-19, Population, Space and Place.  
Co-editors: Miguel Gonzalez-Leonardo and Tony Champion.
- 2018–21 Associate Editor  
REGION. The Journal of the European Regional Science Association.
- 2019–20 Guest Editor  
Special Issue: The Potential of Notebooks for Scientific Publication: Reproducibility, and Dissemination. REGION. The Journal of the European Regional Science Association.  
Co-editors: Dani Arribas-Bel, Gunther Maier and Serge Rey.
- 2015–17 Guest Editor  
Special Issue: Youth and graduate migration, The Annals of Regional Science.  
Co-editors: Alessandra Faggian and Jonathan Corcoran.

## COMMITTEE MEMBERSHIPS

- 2024 Programme Committee. Biases and Representativeness in Digital Forms of Spatiotemporal Data Panel Session. Symposium on Spatiotemporal Data Science 2024, Palma de Mallorca, Spain.

- 2023 Scientific Committee. Urban Challenges and Sustainable Technological Revolution. European Regional Science Association Conference 2023, Alicante, Spain.
- 2022 Programme Committee. Migration and Mobility Research in the Digital Era. Conference on Complex Systems 2022, Palma de Mallorca, Spain.
- 2022 Scientific Committee. Disparities in a Digitalising (Post-Covid) world – Networks, Entrepreneurship and Regional Development. European Regional Science Association Conference 2023, Pécs, Hungary.
- 2021 Programme Committee. Spatial and Temporal Thinking in Data-Driven Methods. Spatial Data Science Symposium 2021.
- 2021 Programme Committee. The 2nd international workshop on Migration and Mobility Research in the Digital Era. Satellite event of the Conference on Complex Systems 2021, Lyon, France.
- 2020–22 Spatial Inequality Expert Advisor. Teesside Task Force. The UK2070 Commission.
- 2020–22 Use of Administrative Data Expert Advisor. Office of National Statistics (ONS) Government Statistical Service Advisory Committee.
- 2018–19 Migration Expert Advisor. RECH Contribution Committee. Repayment mechanisms of Chile government’s international postgraduate scholarship programme.
- 2018 The North American Regional Science Council (NARSC) Graduate Student Paper Competition Committee. San Antonio, Texas.

## **FUNDING AND AWARDS**

### **Grants**

Research income - total £5,665,356.74; PI: £925,718.28; Co-I: £4,739,638.46.

- 2024 “DEBIAS - Developing a framework to measure and correct biases in human mobility data extracted from digital footprints”. Economic and Social Research Council (ESRC). PI £185,084.14.
- 2024 “RAISE - Building recovery and resilience in severe mental illness: Leveraging the role of social determinants in illness trajectories and interventions”. Medical Research Council. Co-I £4,346,865.
- 2023 “TIMELY - Validating an up-to-date dataset of internal migration to inform local and regional-scale spatial planning strategies in Chile”. Public Policy Quality-Related Funding. Research England. PI. £74,136.53
- 2022 “RECAST - Strengthening policy collaboration with the United Nations: Recovery and resilience through digital footprint data”. Public Policy Quality-Related Funding. Research England. PI. £89,913.60
- 2022 “Healthcare Communications and Information Distortion in Crisis Situations: The Case of COVID-19 in Merseyside”. Aviva / The Pandemic Institute: Recover Funding Call. Co-I. £49,999.10.
- 2022 “Digital Media & Society Institute”. University of Liverpool. Co-I. £169,881.
- 2022 “Supporting Post Pandemic Recovery and Resilience through New Forms of Data”. Economic and Social Research Council (ESRC). AHRC UK South Korea SSH Connections Grants.

- Co-I. £138,893.36.
- 2021 “InequaliTies IN Experiencing uRbAn fuNcTion (ITINERANT) During COVID-19”. Engineering and Physical Sciences Research Council (EPSRC) Impact Acceleration Accounts PI. £16,032.
- 2021 “InequaliTies IN Experiencing uRbAn fuNcTion (ITINERANT)”. Engineering and Physical Sciences Research Council (EPSRC) / The Alan Turing Institute. Co-I. £128,499.
- 2021 “Understanding Anti-Asian Sentiment During the COVID-19 Pandemic”. Research England. Public Policy Quality-Related Strategic Priorities Fund. PI. £25,000.
- 2021 “Assessing the Geography and Impacts of Socio-economic Inequalities in the UK”. Research England. Public Policy Quality-Related Strategic Priorities Fund. PI. £15,000.
- 2020 “Generating actionable evidence for containing the spread of misinformation”. Liverpool COVID-19 Partnership Strategic Research Fund. Co-I. £20,100.
- 2020 “Misinformation and COVID-19 in social media in Venezuela.” Global Challenges Strategy Group. Co-I. £5,000.
- 2020 “Supporting evidence-based policy actions”. Research England. Public Policy Quality-Related Strategic Priorities Fund. University of Liverpool. PI. £20,000.
- 2019 “Understanding and Predicting the Long-term Labour Market and Migration Trajectories of Immigrants and Their Children in the United Kingdom” (ES/P000665/1). Economic and Social Research Council (ESRC). PI. £135,400.
- 2017 “Past and future of urban structures in Latin American cities”. ODA Seed Fund Project, University of Liverpool. Co-I. £8,900.
- 2016 “Understanding the declining trend in internal migration in Europe”. Regional Studies Association (RSA). PI. £33,490.39.
- 2016 “4th Chilean Graduate Conference: Advanced knowledge to enhance Chile’s development”. Council on Australia Latin America Relations (COALAR) project. PI. AU\$10,000 (£5,600).
- 2016 “Application of advanced knowledge to enhance Chile’s development”. ChileGlobal Project. PI. AU\$22,500 (£12,569.86).
- 2014 “Improving Subnational Population Forecasts”. Australian Research Council (ARC) Discovery Project (DP150103343). PI. AU\$ 293,980 (£158,150.39).
- 2014 “ResTeach grant”. School of Geography Planning and Environmental Management. University of Queensland. PI. AU\$10,000 (£5,600).
- 2014 “UQ support grant for Engagement and Internationalisation”. School of Geography Planning and Environmental Management. University of Queensland. PI. AU\$1,620 (£905).
- 2013 “ResTeach grant”. School of Geography Planning and Environmental Management. University of Queensland. PI. AU\$10,000 (£5,600).
- 2012 “Doctoral studentship: Modelling the spatial patterns of labour mobility in Chile”. National Commission for Scientific and Technological Research (CONICYT). Government of Chile. PI. £140,000.
- 2007 “Business Platform for promoting innovation in the mining sector in Chile”, CONYMET Ltda and The Chilean Economic Development Agency (CORFO)-INNOVA. Project ID: 07DPN-6752. PI. CLP\$30,000,000 (£28,236.57)

## Consultancy

- 2021 “What do “left behind” areas look like over time?” Let Behind Neighbourhoods Local Trust. <https://localtrust.org.uk>
- 2020 “Analysis of Twitter data to measure anti-migration sentiment during COVID- 19”. International Organization for Migration. Global Migration Data Analysis Centre (GMDAC). <https://gmdac.iom.int>
- 2020 “Data science training programme”. The Universities and Colleges Admissions Service (UCAS). <https://www.ucas.com>

## Awards

- 2022 “Staff Awards - Outstanding contribution to Research”. School of Environmental Sciences.
- 2022 “Staff Awards - Partnership of the year, University of Liverpool Awards”. Finalist shortlisting - Geographic Data Science Lab.
- 2022 “Staff Awards - Research Impact of the Year, University of Liverpool Awards”. Finalist shortlisting - Geographic Data Science Lab.
- 2021 “Journal of Geographical Systems Editors’ Choice Award”. Best article: Projecting the demographic impact of Syrian migration in a rapidly ageing society, Germany. Special Issue “Spatial Demography in Regional Science”. [doi.org/10.1007/s10109-021-00357-3](https://doi.org/10.1007/s10109-021-00357-3)
- 2018 “Best Paper Spatial Economic Analysis”. An evolutionary approach to the delimitation of labour market areas: an empirical application for Chile. Regional Studies Association. [doi.org/10.1080/17421772.2017.1273541](https://doi.org/10.1080/17421772.2017.1273541)
- 2014 “Dean’s Award for Research Higher Degree Excellence”. University of Queensland. Fewer than 10% of PhD graduates from the University of Queensland are recognised this way each year.
- 2007 “Best educational performance award, 2002 Business Management cohort”. Universidad Catolica del Norte.

## PUBLICATIONS

### Journal Articles

I have published 83 journal articles and my Google citation score is 2373 (as of 27 Apr 2024), with a h-index of 26.

- 2024 González-Leonardo, M., Neville, R., Gil-Clavel, S. and Rowe, F. “Sensing population displacement from Ukraine using Facebook data: Identifying potential settlement areas within host countries.” *Population, Space and Place*. [doi.org/10.1002/psp.2790](https://doi.org/10.1002/psp.2790)
- 2024 González-Leonardo, M., Rowe, F., Potančoková, M. and Goujon, A. “Assessing the differentiated impacts of COVID-19 on the immigration flows to Europe.” *International Migration Review*. [doi.org/10.31219/osf.io/bsezk](https://doi.org/10.31219/osf.io/bsezk)
- 2024 Houlden, V., Robinson, C., Franklin, R.S., Rowe, F. and Pike, A. ““Left Behind” Neighbourhoods in England: Where They Are and Why They Matter.” *The Geographical Journal*.
- 2024 Pelikh, A., Rowe, F. “Increasing diversity, precarity and prolonged periods of education in the transition from school to work in Britain.” *Population, Space and Place*.

- 2024 Neville, R., Rowe, F., and Singleton, S. "Nonlinear relationships between human development and international student mobility: The prominent role of employment prospects and cultural and linguistic ties." *Population, Space and Place*, p.e2764.. doi.org/10.1002/psp.2764
- 2024 Rose, N., Dolega, L. and Rowe, F. "Using loyalty card data to understand the impact of weather on click & collect behaviours in UK retailing". *The International Review of Retail, Distribution and Consumer Research*, pp.1-22. doi.org/10.1080/09593969.2024.2316055
- 2024 Fierro, P., Aravena-Gonzalez, I., Aroca, P. and Rowe, F. "Geographies of discontent: measuring and understanding the feeling of abandonment in the Chilean region of Valparaíso (2019–2021)". *Cambridge Journal of Regions, Economy and Society*, p.rsae004. doi.org/10.1093/cjres/rsae004
- 2023 Calafiore, A., Samardzhiev, K., Rowe, F., Fleischmann, M. and Arribas-Bel, D. "Inequalities in experiencing urban functions. An exploration of human digital (geo-) footprints". *Environment and Planning B: Urban Analytics and City Science*, p.23998083231208507. doi.org/10.1177/23998083231208507
- 2023 Aparicio-Castro, A., Wiśniowski, A., Rowe, F. "A bayesian approach to estimate annual bilateral migration flows for south america using census data." *Royal Statistical Society. Journal. Series A: Statistics in Society*. doi.org/10.1093/jrssa/qnad127
- 2023 Rowe, F., González-Leonardo, M., and Champion, T. "Virtual special issue: Internal migration in times of COVID-19." *Population, Space and Place*. doi.org/10.1002/psp.2652
- 2023 Charles-Edward, E., Bernard, A., Rowe, F., Abel, G. "The Impact of International Migration on Global Population Redistribution, 1990-2015." *International Migration Review*. doi.org/10.1177/01979183231175114
- 2023 Owen, D., Arribas-Bel, D., Rowe, F. "Tracking the transit divide: a multilevel modelling approach of the relationship between urban inequalities, Covid-19, and public transport ridership disparities." *Sustainability*. doi.org/10.3390/sui5118821
- 2023 Graells-Garrido, E., Opitz, D., Rowe, F., Arriagada, J. "A data fusion approach with mobile phone data for updating travel survey-based mode split estimates." *Transportation research part C: emerging technologies*, 155, p.104285. doi.org/10.1016/j.trc.2023.104285
- 2023 Shang, L-D, Rowe, F., Lin, E., "Estimating the Causal Impact of Non-traditional Household Structures on Children Educational Performance Using a Machine Learning Propensity Score." *Asia Pacific Education Review*.
- 2023 Tseng, Y.W., Rowe, F. and Lin, E.S. "An Elon Musk generalist or a specialist? The impacts of interdisciplinary learning on post-graduation outcomes". *Studies in Higher Education*, pp.1-26. doi.org/10.1080/03075079.2023.2252889
- 2023 González-Leonardo, M., Rowe, F., "A 'donut effect'? Assessing housing transactions during COVID-19 across the Spanish urban–rural hierarchy". *Regional Studies, Regional Science*. 10(1), pp.471-472. doi.org/10.1080/21681376.2023.2191684
- 2023 Rose, N., Rowe, F., Dolega, L. "How consumer behaviours changed in response to COVID-19 lockdown stringency measures: A case study of Walmart" *Applied Geography*. https://doi.org/10.1016/j.apgeog.2023.102948
- 2023 González-Leonardo, M., Potančoková, M., Yildiz, D., Rowe, F. "Quantifying the impact of COVID-19 on immigration in receiving high-income countries" *Plos One*. https://doi.org/10.1371/journal.pone.0280324

- 2023 González-Leonardo, M., Newsham, N., Rowe, F. “Understanding Population Decline Trajectories in Spain: A Sequence Analysis Approach.” *Geographical Analysis*. <https://doi.org/10.1111/gean.12357>
- 2023 Rowe, F., Calafiore, A., Arribas-Bel, D., Samardzhiev, K., Fleischmann, M. “Urban Exodus? Understanding Human Mobility in Britain During the COVID 19 Pandemic Using Meta-Facebook Data.” *Population, Space and Place*. <https://doi.org/10.1002/psp.2637>
- 2023 Patias, N., Rowe, F., Arribas-Bel, D., “Local urban attributes defining ethnically segregated areas across English cities: A multilevel approach.” *Cities*. [doi.org/10.1016/j.cities.2022.103967](https://doi.org/10.1016/j.cities.2022.103967)
- 2023 Thomas, J., Rowe, F. and Lin, E.S. “Declining fertility in Taiwan: the deterring impact of housework imbalance”. *Asian Population Studies*, 19(3), pp.270-288. [doi.org/10.1080/17441730.2022.2035555](https://doi.org/10.1080/17441730.2022.2035555)
- 2022 Newsham, N., Rowe, F. “Understanding trajectories of population decline across rural and urban Europe: A sequence analysis.” *Population, Space and Place*. <https://doi.org/10.1002/psp.2630>
- 2022 Rowe, F. “Using digital footprint data to monitor human mobility and support rapid humanitarian responses.” *Regional Studies, Regional Science*. 9(1), pp.665-668. [doi.org/10.1080/21681376.2022.2135458](https://doi.org/10.1080/21681376.2022.2135458)
- 2022 González-Leonardo, M., Rowe, F. “Visualizing internal and international migration in the Spanish provinces during the COVID-19 pandemic.” *Regional Studies, Regional Science*. <https://doi.org/10.1080/21681376.2022.2125824>
- 2022 González-Leonardo, M., Rowe, F., , Fresolone-Caparrós, A. “Rise in internal migration to rural areas during the COVID-19 pandemic. Who moved and where?” *Journal of Rural Studies*. <https://doi.org/10.1016/j.jrurstud.2022.11.006>
- 2022 Rowe, F. “A Major Uplift: Recent Developments in REGION.” *REGION*. [doi.org/10.18335/region.v9i2.457](https://doi.org/10.18335/region.v9i2.457)
- 2022 Thomas, J., Rowe, F., Williamson, P., Lin, E., “The Effect of Parental Leave Policies on Increasing Fertility: A Systematic Review.” *Humanities & Social Sciences Communications*. [doi.org/10.1057/s41599-022-01270-w](https://doi.org/10.1057/s41599-022-01270-w)
- 2024 Tang, A, Perales, F., Rowe, F., Baxter, J. “From Bad to Worse: Examining the Deteriorating Labour Market Outcomes of International Graduates in Australia.” *Journal of Population Research*. [doi.org/10.1007/s12546-022-09291-7](https://doi.org/10.1007/s12546-022-09291-7)
- 2022 Graells-Garrido, E., Opitz, D., Rowe, F., “Measuring the Local Complementarity of Population, Amenities and Digital Activities to Identify and Understand Urban Areas of Interest.” *Environment and Planning B: Urban Analytics and City Science*. [doi.org/10.1177/2399808322111783](https://doi.org/10.1177/2399808322111783)
- 2022 Rowe, F., Robinson, C., Patias, N. Sensing Global Changes in Local Patterns of Energy Consumption in Cities During the Early Stages of the COVID-19 Pandemic. *Cities*. [doi.org/10.21203/rs.3.rs-846222/v2](https://doi.org/10.21203/rs.3.rs-846222/v2)
- 2022 González-Leonardo, M., López-Gay, A., Newsham, N., Recaño, J., Rowe, F. “Understanding Patterns of Internal Migration During the COVID-19 Pandemic in Spain” *Population, Space and Place*. [doi.org/10.1002/psp.2578](https://doi.org/10.1002/psp.2578)
- 2022 Samardzhiev, K., Fleischmann, M., Arribas-Bel, D., Calafiore, A., Rowe, F. “Functional Signatures in Great Britain: A dataset.” *Data in Brief*. [doi.org/10.1016/j.dib.2022.108335](https://doi.org/10.1016/j.dib.2022.108335)



- 2022 Tang, A, Perales, F., Rowe, F., Baxter, J. “The going gets rougher: exploring the labour market outcomes of international graduates in Australia.” *International Migration Review*. doi.org/10.1111/imig.12977
- 2022 Thomas, J., Rowe, F., Lin, E., “Declining Fertility in Taiwan: The Long-Term Detering Impact of Housework Imbalance.” *Asian Population Studies*. doi.org/10.1080/17441730.2022.2035555
- 2021 Rowe, F., Mahony, M., Graells-Garrido, E., Rango, M. and Sievers, N., “Using Twitter to Track Immigration Sentiment During Early Stages of the COVID-19 Pandemic.”. *Data & Policy* 3:e36, doi.org/10.1017/dap.2021.38
- 2021 Calafiore, A., Murage, N., Nasuto, A. and Rowe, F., 2021. “Deriving Spatio-Temporal Geographies of Human Mobility from GPS traces”. Spatial Data Science Symposium 2021 Short Paper Proceedings. doi.org/10.25436/E26K5F
- 2021 Patias, N., Rowe, F. and Arribas-Bel, D., “Trajectories of Neighbourhood Inequality in Britain: Unpacking Inter-regional Socioeconomic Imbalances, 1971–2011.” *The Geographical Journal*, doi.org/10.1111/geoj.1242
- 2021 Freire-Vidal, Y., Graells-Garrido, E. and Rowe, F., “A Framework to Understand Attitudes Towards Immigration Through Twitter.” *Applied Sciences*, 11(20), 9689 doi.org/10.3390/app11209689
- 2021 Arribas-Bel, D., Green, M., Rowe, F., Singleton, A., “Open Data Products. A Framework for Creating Valuable Analysis Ready Data.” *Journal of Geographical Systems*, 23, 497–51. doi.org/10.1007/s10109-021-00363-5
- 2021 Gietel-Basten, S. Sobotka, T., Rowe, F. et al. “Trends in population health and demography”. *The Lancet*, 398(10300), pp.580–581. doi.org/10.1016/S0140-6736(21)01051-5
- 2021 Patias, N., Rowe, F., Cavazzi, S. and Arribas-Bel, D., “Sustainable urban development indicators in Great Britain from 2001 to 2016.” *Landscape and Urban Planning*, published online ahead of print. doi:10.1016/j.landurbplan.2021.104148
- 2021 Riffe, T., Acosta, E., and Rowe, F., et al. “Data Resource Profile: COVerAGE-DB: a global demographic database of COVID-19 cases and deaths.” *International Journal of Epidemiology*, 50(2), pp.390-390f. doi.org/10.1093/ije/dyab027
- 2021 Graells-Garrido, E., Serra-Burriel, F., Rowe, F., Cucchiatti, F.M. and Reyes, P. “A city of cities: Measuring how 15-minutes urban accessibility shapes human mobility in Barcelona”. *PloS one*, 16(5), p.e0250080. doi.org/10.1371/journal.pone.0250080
- 2021 Dolega, L., Rowe, F. and Branagan, E. “Going digital? The impact of social media marketing on retail website traffic, orders and sales”. *Journal of Retailing and Consumer Services*, 60, p.102501. doi.org/10.1016/j.jretconser.2021.102501
- 2021 Newsham, N., Rowe, F. “Projecting the demographic impact of Syrian migration in a rapidly ageing society, Germany”. *Journal of Geographical Systems*. 23, 231-261. doi.org/10.1007/s10109-018-00290-y
- 2021 Gu, H., Rowe, F., Liu, Y. and Shen, T. “Geography of talent in China during 2000–2015: An eigenvector spatial filtering negative binomial approach”. *Chinese Geographical Science*, 31(2), pp.297-312. doi.org/10.1007/s11769-021-1191-y
- 2021 Green, M., Musi, E., Rowe, F., Charles, D., Pollock, F.D., Kypridemos, C., Morse, A., Rossini, P., Tulloch, J., Davies, A. and Dearden, E. “Identifying how COVID-19-related

- misinformation reacts to the announcement of the UK national lockdown: An interrupted time-series study”. *Big Data & Society*, 8(1), p.20539517211013869. doi.org/10.1177/20539517211013869
- 2021 Tang, A., Perales, F., Rowe, F. and Baxter, J. “The going gets rougher: exploring the labour market outcomes of international graduates in Australia”. *Life Course Centre Working Paper*, (2021-04). doi.org/10.2139/ssrn.3791715
- 2021 Backman, M., Lopez, E. and Rowe, F. “The occupational trajectories and outcomes of forced migrants in Sweden. Entrepreneurship, employment or persistent inactivity?”. *Small Business Economics*, 56(3), pp.963-983. doi.org/10.1007/s11187-019-00312-z
- 2020 Rowe, F., Maier, G., Arribas-Bel, D. and Rey, S. “The Potential of Notebooks for Scientific Publication, Reproducibility and Dissemination”. *Region*, 7(3), pp1-5. doi.org/10.18335/region.v7i3.357
- 2020 Chen, M., Fahrner, D., Arribas-Bel, D. and Rowe, F. “A reproducible notebook to acquire, process and analyse satellite imagery”. *Region*, 7(2), pp15-46. doi.org/10.18335/region.v7i2.295
- 2020 Rowe, F., Bell, M., Bernard, A., and Charles-Edwards, E. “Internal Migration Intensity and Impact in Europe”. *European Demographic Data Sheet 2020. Vienna Institute of Demography*. doi.org/10.31219/osf.io/a6x3q
- 2020 Green, M.A. and Rowe, F. “Explaining the widening distribution of Body Mass Index: A decomposition analysis of trends for England, 2002–2004 and 2012–2014”. *Area*, 53(2), pp.362-372. doi.org/10.1111/area.12675
- 2020 Rowe, F. and Patias, N. “Mapping the spatial patterns of internal migration in Europe”. *Regional Studies, Regional Science*, 7(1), pp.390-393. doi.org/10.1080/21681376.2020.1811139
- 2019 Rowe, F., Bell, M., Bernard, A., Charles-Edwards, E. and Ueffing, P. “Impact of Internal Migration on Population Redistribution in Europe: Urbanisation, Counterurbanisation or Spatial Equilibrium?”. *Comparative Population Studies*. 44. doi.org/10.12765/CPoS-2019-18
- 2019 Rodríguez Vignoli, J. and Rowe, F. “Efectos cambiantes de la migración sobre el crecimiento, la estructura demográfica y la segregación residencial en ciudades grandes: el caso de Santiago, Chile, 1977-2017”. *Serie Población y Desarrollo. United Nations*. 125, pp.1-91 hdl.handle.net/11362/44367
- 2019 Singer, L., Green, M., Rowe, F., Ben-Shlomo, Y., Kulu, H. and Morrissey, K. “Trends in multimorbidity, complex multimorbidity and multiple functional limitations in the ageing population of England, 2002–2015”. *Journal of comorbidity*, 9, p.2235042X19872030. doi.org/10.1177/2235042X19872030
- 2019 Singer, L., Green, M., Rowe, F., Ben-Shlomo, Y. and Morrissey, K. “Social determinants of multimorbidity and multiple functional limitations among the ageing population of England, 2002–2015”. *SSM-population health*, 8, p.100413. doi.org/10.1016/j.ssmph.2019.100413
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### Book Chapters

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- 2023 Rowe, F., Mahony, M., Graells-Garrido, E., Rango, M., and Sievers, N. "Using Twitter Data to Monitor Immigration Sentiment". In: Rango, M., Sievers, N., and Laczkó, F. (eds). *Harnessing Data Innovation for Migration Policy: A Handbook for Practitioners*. International Organization for Migration. Practitioner Guide Book. IOM, Geneva. *preprint*: <https://publications.iom.int/books/harnessing-data-innovation-migration-policy-handbook-practitioners>.
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- 2013 Rowe F. “The Geography and Determinants of Regional Human Capital in Eight Latin American and Caribbean Countries.”. In Cuadrado-Roura J., Aroca P. *Regional Problems and Policies in Latin America. Advances in Spatial Science (The Regional Science Series)* Springer, Berlin, Heidelberg doi.org/10.1007/978-3-642-39674-8\_17

### Conference Proceedings

- 2017 Rodriguez, J. and Rowe, F., “The Changing Impacts of Internal Migration on Residential Socio-Economic Segregation in the Greater Santiago.” *International Union for the Scientific Study of Population<sup>th</sup> International Population Conference*. Cape Town, South Africa.  
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### Edited Articles and Reviews

- 2018 Rodríguez-Vignoli, J., Rowe, F. “Internal migration and spatial de-concentration of population in Latin America.” *N-IUSSP news magazine, International Union for the Scientific Study of Population* <https://bit.ly/3xmEyJq>
- 2018 Corcoran, J., Pojani, D., Rowe, F., Zhou, J., Kim, J., Wei, M., Tao, S., Sigler, T. and Yan, L., “Too wet? Too cold? Too hot? This is how weather affects the trips we make” *The Conversation* <https://bit.ly/3lgPCFj>

### Reports and Other Publications

- 2022 Rowe, F., Arribas-Bel, D., Calafiore, A., MacDonald, J., Samardzhiev, K., Fleischmann, M., Mobility data in urban science. Workshop report. The Alan Turing Institute. London, United Kingdom.
- 2022 González-Leonardo, M., López-Gay, A., Recaño, J., Rowe, F. Changes of residence in times of COVID-19: a small respite from rural depopulation. *Perspectives Demographiques*. 26 (1), 1-4.
- 2021 Rowe, F., Mahony, M., Graells-Garrido, E., Rango, M., Sievers, N. “Sentiment towards Migration during COVID-19: What Twitter Data Can Tell Us”. International Organization for Migration (IOM), Geneva.

- 2021 Darlington-Pollock, F., Arribas-Bel, D., Fleischman, M., Newsham, N., Rowe, F. "Policy Brief: What do 'left behind' areas look like over time? Developing place-based typologies of left behind areas". Local Trust.
- 2021 Robinson, C., Rowe, F., Patias, N., Wray, I. "Socio-economic Inequality and Geographic Spread of the COVID-19 Pandemic in England". *Working paper series of the UK2070 Commission, Series 4*, 12.  
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- 2020 Robinson, C., Rowe, F. and Patias, N. "The Geography of the COVID-19 Pandemic in England". Policy Brief Series: Responding to COVID-19 in the Liverpool City Region. *Heseltine Institute for Public Policy, Practice and Place*. University of Liverpool  
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- 2020 Rowe, F. Robinson, C., Patias, N. "Policy Brief: Changes in Neighbourhood Socio-economic Structures in Teesside, 1971-2011". The UK2070 Commission.
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uk2070.org.uk/publications/
- 2015 Rowe, F. Corcoran, J and Bell, M. "Changing post-school pathways and outcomes: Melbourne and regional students." Department of Planning and Community Development. Spatial Analysis and Research Branch. State Government Victoria. Technical report 6.  
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- 2014 Rowe, F. Corcoran, J and Bell, M. "Determinants of post-school choices of young people: The workforce, university or vocational studies?," Department of Planning and Community Development. Spatial Analysis and Research Branch. State Government Victoria. Technical report 5. <https://bit.ly/3jc6lHa>
- 2014 Rowe, F. Corcoran, J and Bell, M. "Labour market outcomes and educational and occupational pathways of young movers starting off in regional Victoria" Department of Planning and Community Development. Spatial Analysis and Research Branch. State Government Victoria. Technical report 4. <https://bit.ly/3rISKem>
- 2014 Rowe, F. Corcoran, J and Bell, M. "Labour market outcomes and main educational and occupational pathways of young Victorians." Department of Planning and Community Development. Spatial Analysis and Research Branch. State Government Victoria. Technical report 3. <https://bit.ly/3rPk9LF>
- 2014 Rowe, F. Corcoran, J and Bell, M. "Patterns and sequences of mobility." Department of Planning and Community Development. Spatial Analysis and Research Branch. State Government Victoria. Technical report 2. <https://bit.ly/3lhXiEw>
- 2013 Rowe, F. Corcoran, J and Bell, M. "Analytical approach and data issues: report prepared for State Victoria government" Department of Planning and Community Development. Spatial Analysis and Research Branch. State Government Victoria. Technical report 1.  
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- 2013 Rowe, F. "Spatial labour mobility in a transition economy: Migration and commuting in Chile." PhD Thesis. Department of Geography, Planning and Environmental Management, University of Queensland, Australia. doi.org/10.14264/uql.2017.427

## Working papers

- 2021 Tang, A., Perales, F., Rowe, F. and Baxter, J., *From Bad to Worse: Examining the Deteriorating Labour Market Outcomes of International Graduates in Australia..* Life Course Centre Working Paper, University of Queensland, Australia.
- 2021 Tang, A., Perales, F., Rowe, F. and Baxter, J., *The going gets rougher: exploring the labour market outcomes of international graduates in Australia..* Life Course Centre Working Paper, University of Queensland, Australia.

## Manuscripts under Review

- 2024 Rowe, F., Cabrera-Arnau, C., González-Leonardo, M., Nasuto, A. and Neville, R. “Reduced mobility? Urban exodus? Medium-term impacts of the COVID-19 pandemic on internal population movements in Latin American countries”. Population and Development Series. United Nations. Under review. doi.org/10.48550/arXiv.2311.01464
- 2024 Tao, S., Rowe, F. and Shan, H. “Unveiling the influence of behavioural, built environment and socio-economic features on the spatial and temporal variability of bus use using explainable machine learning”. Under review. doi.org/10.48550/arXiv.2403.05545
- 2024 Newsham, N., Rowe, F. “The Demographic Causes of European Sub-National Population Declines”. Under review.
- 2024 Nasuto, A. and Rowe, F. “Exposing Hate–Understanding Anti-Immigration Sentiment Spreading on Twitter”. Under Review. doi.org/10.48550/arXiv.2401.06658
- 2024 Ward, C., Robinson, C., Singleton, A., Rowe, F. “Tracking Spatio-temporal Energy Vulnerability: A Composite Indicator for England and Wales.” Under Review.
- 2024 González-Leonardo, M., Cabrera-Arnau, C., Neville, R., Nasuto, A. and Rowe, F. ““Urban Exodus” During COVID-19 in Mexico? Using Digital Data to Analyze Medium-Term Pandemic Impacts on Internal Population Movements.” Under Review. doi.org/10.31219/osf.io/e4au9
- 2024 Rowe, F., Mahony, M., Tao, S., “Assessing Machine Learning for Near-Real Time Bus Ridership Prediction During Extreme Weather.” Under review. doi.org/10.48550/arXiv.2204.09792
- 2024 Ward, C., Robinson, C., Singleton, A., Rowe, F. “Spatial-Temporal Dynamics of Gas Consumption in England and Wales: Assessing the Residential Sector Using Sequence Analysis Energy Policy.” Under review.

## INVITED TALKS

- 2024 “Unleashing the potential of digital footprint data to understand human mobility: Opportunities, practice and challenges”. 2 Apr. University of St Andrews, St Andrews United Kingdom.
- 2023 “A Data Fusion Approach: Using Mobile Phone Data to Update Travel Survey-based Mode Split Estimates”. 10 Nov. Computer Science Department, University of Exeter, Exeter, United Kingdom.
- 2023 “Oportunidades y desafíos del uso de trazas digitales para el análisis de la movilidad y migración humana”. Uso de Datos Digitales en el Estudio de la Movilidad y la Migración Humana. 2 Nov. Online, Mexico.

- 2023 “Digital Footprint Data for Human Mobility: Opportunities, Practice & Challenges”. 31 Oct. Jönköping International Business School, Jönköping University, Jönköping, Sweden.
- 2023 “Identifying Place-based Trajectories of Spatial Inequality Using Sequence Analysis”. 10 Mar. Alan Turing Institute-Newcastle University, Newcastle, United Kingdom.
- 2023 “ITINERANT InequalITies IN Experiencing uRbAn fuNcTion”. 15 Feb. Online, NETwoRks, Data, and Society (NERDS), IT University of Copenhagen, Copenhagen, Denmark.
- 2022 “Digital footprint data: Opportunities, Practice and Challenges”. 17 Nov. Online, Cedeplar, Universidade Federal de Minas Gerais, Brasília, Brazil.
- 2022 “GIS Research Impact.” 5 Apr. GISRUK 2020, University of Liverpool, Liverpool, United Kingdom.
- 2022 “Big Data and Human Geography: Current Practice and Challenges”. 25 Mar. Centre d’Estudis Demogràfics (CED), Universitat Autònoma de Barcelona, Barcelona, Spain.
- 2021 “Data Innovation Event. Harnessing data innovation for migration policy in Europe and Africa State of the art and future directions”. 29 Nov. Hybrid, International Organization for Migration (IOM), Berlin, Germany.
- 2021 “Measuring how 15-minutes urban accessibility shapes human mobility in Barcelona”. 15 Nov. Online, Jönköping University, Sweden.
- 2021 “Geographic Data Science”. 2 Nov. Online, Instituto de Data Science, Universidad del Desarrollo, Chile.
- 2021 “Big Data: Opportunities and Challenges”. 14 Oct. Online, Instituto de Data Science, Universidad del Desarrollo, Chile.
- 2021 “Twitter: Maximising Research Impact Potential” 2021 Royal Statistical Society Conference, Young Statisticians Section of the Royal Statistical Society Special Session. 8 Sep. Manchester, United Kingdom.
- 2020 “Machine learning in the Social Sciences.” Methods Northwest. North West Social Science Doctoral Training Partnership. 12 Nov. Online. United Kingdom.
- 2020 “Using Machine Learning and Twitter To Profile Attitudes Towards Immigration.” Economics Seminar ICESI, 30 July, Universidad Icesi. Cali, Colombia.
- 2020 “Using Machine Learning and Twitter Data to Profile Attitudes Towards Immigration.”, Max Planck Institute for Demographic Research (MPIDR), 10 March, Rostock, Germany.
- 2019 “Measuring Urban Forest Using Street-Level Imagery and Deep Learning”. Building a future for the urban analytics blueprint. The Alan Turing Institute. 17 Oct. Bristol. United Kingdom.
- 2019 “International Migration: Busting Myths!.” Roxby Lecture. University of Liverpool. 16 May. Liverpool. United Kingdom.
- 2019 “Migration, Cities and Big Data.” Population and Development Division, United Nations, 15 April, New York, United States.
- 2019 “Migration, Urbanisation and Big Data.” University of Toronto, 4 April, Toronto, Canada.
- 2018 “The Impact of Internal Migration on Population Redistribution in Europe.” University of Manchester Seminar, 11 May, Manchester, United Kingdom.
- 2016 “Socioeconomic residential segregation, intrametropolitan spatial inequalities and internal



- migration in Latin America large cities.” Latin American Demographic Centre (CELADE), Economic Commission for Latin America and the Caribbean (CELADE), United Nations (UN), 30 May, Santiago, Chile.
- 2016 “The returns to migration and human capital accumulation pathways: Non-metropolitan youth in the school-to-work transition.” National Institute of Demographic and Economic Analysis, The University of Waikato, 17 May, 2016, Hamilton, New Zealand.
- 2015 “Careers and migration pathways and outcomes of young people.” Research Roundtable, educational, employment and migration pathways and outcomes of young people. Department of Education and Training, 15 October, 2015, Brisbane, Australia.
- 2015 “Internal migration and development in Latin America.” Latin American Demographic Centre (CELADE), Economic Commission for Latin America and the Caribbean (CELADE), United Nations (UN), 14-15 May, Santiago, Chile.
- 2014 “The effects of economic liberalisation on inter-regional labour migration in a transition economy, Chile.” Tinbergen Workshop, 19-20 May, Amsterdam, The Netherlands.

### **Campus Talks**

- 2024 “Geographic Data Science Lab Partnerships with the United Nations International Organization for Migration.” University of Liverpool. 24 Apr. Liverpool. United Kingdom.
- 2023 “Geographic Data Science Lab. Who we are.” University of Liverpool. 12 Jun. Liverpool. United Kingdom.
- 2023 “Machine Learning & AI projects.” University of Liverpool. 8 Mar. Liverpool. United Kingdom.
- 2022 “Urban Exodus? Human Mobility During COVID-19” University of Liverpool. 8 Sep. Liverpool. United Kingdom.
- 2020 “Using Twitter to Track Immigration Sentiment During Early Stages of the COVID-19 Pandemic.” University of Liverpool. 4 Jun. Liverpool. United Kingdom.
- 2018 “Regional Science.” University of Liverpool. 21 Oct. Liverpool. United Kingdom..
- 2018 “Totes amaze-balls data opportunity.” University of Liverpool. 12 Feb. Liverpool. United Kingdom.
- 2017 “Why has the distribution of BMI widened? Evidence for England, 2004-2013” University of Liverpool. 22 Mar. Liverpool. United Kingdom.

## **CONFERENCE ACTIVITY**

### **Plenary Addresses**

- 2023 “Enabling Reproducible Spatiotemporal Data Science: Practice & Challenges.” The Symposium on Spatiotemporal Data Science. 15 Jul. Harvard University, Cambridge, United States.
- 2023 “Digital Footprint Data for Human Mobility: Practice & Challenges.” British and Irish Regional Science Conference. 4 Jul. Newcastle University, Newcastle, United Kingdom.
- 2023 “Too Old? Updating Survey Transport Mode Estimates Using Mobile Phone Data.” OR Geospatial Data Science Knowledge Exchange Seminar Geospatial Data Science for Future

- Cities and Society: Focusing on Analysis of Digital Footprint Data. 8 Jun. Korea Research Institute for Human Settlements (KRIHS), Sejong, South Korea.
- 2022 “Digital Footprint Data for Human Mobility: Practice & Challenges.” The First Geospatial Innovation Conference Strengthening African Geospatial. Online, 11 Nov.
- 2022 “Non-traditional Data to Measure Human Mobility: Progress, Challenges and Practice.” Spatial Data Science Conference, 19 May, London, United Kingdom.
- 2017 “The Rise of International Graduates: Contributing to Regional Australia.” International Education Association of Australia 8th Mid-Winter Researchers’ Seminar, 4 July, Brisbane, Australia.
- 2015 “Existing Chilean-Australian relationships: The role of human capital mobility and research/policy implication.” Disseminating Knowledge to reinforce Chilean? Australian Networks, 4-5 Sep, Melbourne, Australia.
- 2015 “The role of human capital mobility in enhancing science.” Strengthening ties between Chile and Australia, First Meeting of Chilean Scientist in Brisbane Australian Networks, 31 July, Brisbane, Australia. Keynote presentation.

### **Sessions Organised**

- 2023 “Workshop: An Introduction to Network Analysis.” GIScience Conference. 12-15 Sep. University of Leeds, Leeds, United Kingdom. Co-organisers: Carmen Cabrera-Arnau, Andrew Renninger, Marin Maureira and Rafael Prieto-Curiel. [crmnc.github.io/nets4gis/](https://crmnc.github.io/nets4gis/)
- 2023 “Special Session: Digital footprint data for population science.” British Society for Population Studies Conference. 11-13 Sep. Keele University, Keele, United Kingdom.
- 2021 “Special Session: Human mobility, Migration and Stay-in-Place Patterns and Changes During Pandemic Times.” European Regional Science Association Conference. 24-27 Aug. Bolzano, Italy. Co-organisers: Alessandra Faggian and Rachel Franklin.
- 2018 “Special Session: Doing regional science with new sources of big data.” European Regional Science Association Conference. 28-31 Aug. Cork, Ireland.
- 2018 “Workshop Session: The Potential of Satellite Imagery for Studying Human Activity.” Workshop. 14-15 Jun. Liverpool, United Kingdom.

### **Symposium & Workshops**

- 2024 “Workshop.” (Spatial Data Science in an Age of Scientific Disruption) – University of California Santa Barbara (UCSB), Santa Barbara, California, US. December 8-9th 2023. <https://spatial.ucsb.edu/events/all/2023/spatial-data-science-age-scientific-disruption>
- 2023 “Training Workshop.” (Policy Workshop: RECAST project - Using Digital Footprint Data to Measure and Monitor Human Mobility) – Project Findings. United Nations. Santiago, Chile. July 20th 2023. <https://fcorowe.github.io/dfd4mobility/>
- 2023 “Policy Engagement Workshop.” (Policy Workshop: RECAST project - Using Digital Footprint Data to Understand Internal Population Movements in Latin America) – Project Findings. United Nations. Santiago, Chile. July 19th 2023.
- 2022 “Policy Engagement Workshop.” (Inequalities IN Experiencing uRbAn fuNcTion) – Project Findings. University of Liverpool. Liverpool, United Kingdom. July 21st 2022. <https://youtu.be/lhytz7ayTY>

- 2022 “Introduction to Geographic Data Science.” BIGSSS Computational Social Science Summer School on Social Cohesion. University of Groningen. Groningen, The Netherlands. July 5th 2022. <http://janlo.de/bigssscss/>
- 2021 “Spatial and Temporal Thinking in Data-Driven Methods.” Spatial Data Science Symposium 2021. University of California Santa Barbara. Online. <http://sdss2021.spatial-data-science.net>
- 2021 “Towards urban analytics 2.0.” The Alan Turing Institute. Leeds, United Kingdom. Nov. 29-30. <https://www.turing.ac.uk/events/towards-urban-analytics-20>
- 2021 “Using mobility data in urban science workshop.” The Alan Turing Institute. Online, United Kingdom. Oct. 27-28. <https://www.turing.ac.uk/events/urban-analytics-monthly-meet>
- 2020 “3rd Meeting. The 100 Questions Initiative: Migration cohort” the Big Data for Migration (BD4M) Alliance, International Organization for Migration (IOM), the European Commission and The GovLab. Online. Apr 28 2020. Online. <https://migration.the100questions.org>
- 2020 “AI and data science in the age of COVID-19 Workshops”. The Alan Turing Institute. Online, United Kingdom. Nov 25-Dec 9. <https://www.turing.ac.uk/events/ai-and-data-science-age-covid-19>
- 2019 “Second UK2070 Commission National Symposium”. Durham, United Kingdom. Nov 18.
- 2019 “The 100 Questions Initiative: Migration cohort - 2nd Meeting” the Big Data for Migration (BD4M) Alliance, International Organization for Migration (IOM), the European Commission and The GovLab. Online. Sep. 13 2019. Online. <https://migration.the100questions.org>
- 2019 “First UK2070 Commission National Symposium”, hosted by Leeds City Council. Leeds, United Kingdom. Jun 13.
- 2019 “The 100 Questions Initiative: Migration cohort - 1st Meeting” the Big Data for Migration (BD4M) Alliance, International Organization for Migration (IOM), the European Commission and The GovLab. Online. Jun. 27 2019. Online. <https://migration.the100questions.org>
- 2014 “Spatial Demography Symposium”: Spatial mobility patterns of overseas graduates in Australia. Hosted by the University of Queensland, Brisbane, Australia. Jul 2.

## **IMPACT & KNOWLEDGE EXCHANGE ACTIVITIES**

### **Recent**

- 2024 “ONS Outreach Engagement Meeting.” (The future of population and migration statistics) – Office for National Statistics. Greater Manchester. April 24th 2024.
- 2024 “Online Meeting.” (Learning from continuous surveying and operational use of forced displacement data in war-torn Ukraine) – World Bank Fragility Forum 2024: Adapting and Innovating in a Volatile World Partnership Day. Online. March 1st 2024. <https://events.teams.microsoft.com/event/dae456a2-d168-419a-b605-d0f41953722b@1588262d-23fb-43b4-bd6e-bce49c8e6186>
- 2024 “Online Meeting.” (Modelling accessibility to Early Years Educational providers) – Ofsted,

- Higher Analytical Officer, Early Years Data and Analysis. Online. February 20th 2024.  
<https://www.gov.uk/government/organisations/ofsted>
- 2023 “Online Meeting.” (Measuring cumulative impacts) – Equality Trust. Online. October 17th 2023.
- 2023 “Online Meeting.” (Using mobile phone data to estimate population displacement within Ukraine) – Project Findings. United Nations, International Organization for Migration. Online. November 9th 2023. <https://gmdac.iom.int>
- 2023 “Online Meeting.” (Empirical approaches to assessing interventions: Concepts, Data and Methods). Equality Trust. Online. October 17th 2023. <https://equalitytrust.org.uk>
- 2023 “Policy Engagement Workshop.” (Policy Workshop: RECAST project - Using Digital Footprint Data to Understand Internal Population Movements in Latin America) – Project Findings. United Nations. Santiago, Chile. July 19th 2023.
- 2022 “Policy Engagement Workshop.” (Inequalities IN Experiencing uRbAn fuNcTion) – Project Findings. University of Liverpool. Liverpool, United Kingdom. Jul 22.  
<https://youtu.be/lhyytz7ayTY>
- 2021 “An Equal Recovery Inquiry: Geographic Data Science Lab (GDSL) submission”. Submission of evidence to the United Kingdom Parliament to inform discussions at the Treasury Committee on An Inquiry on Equal Recovery in the context of COVID-19. Online, United Kingdom. Jun 27. Submission reference: *UXW268417*  
<https://committees.parliament.uk/work/1218/an-equal-recovery/>
- 2021 “Policy Brief: Tracking Sentiment about Immigration at the Early Stages of the COVID-19 Pandemic”. Submission to inform policy discussions and recommendations at the International Organization for Migration, Global Migration Data Analysis Centre and the German Ministry of Interior. Berlin, Germany. Approved: Jul 23.  
<https://gmdac.iom.int/the-team>
- 2021 “Experts Database: I was included in the United Nations Network Migration Database”. Online, United States. Jun 20.  
<https://migrationnetwork.un.org/hub/experts-database>
- 2021 “Policy Brief: What do ‘left behind’ areas look like over time? Developing place-based typologies of left behind areas”. Submission to inform policy discussions and recommendations at the All-Party Parliamentary Group for ‘Left Behind’ Neighbourhoods. London, United Kingdom. Approved: Mar 31.  
<https://www.appg-leftbehindneighbourhoods.org.uk>
- 2021 “2021 Census – how it matters for research”. Online, United Kingdom. Mar 15.  
<https://bit.ly/2WvMknK> <https://bit.ly/2WvMknK>
- 2021 “2021 Census – why should you fill it in?”. Online, United Kingdom. Mar 9.  
<https://bit.ly/2USknWj> <https://bit.ly/2USknWj>
- 2021 “Policy Brief: Socio-economic Inequality and Geographic Spread of the COVID-19 Pandemic in England”. Submission to inform policy discussions and recommendations at the UK2070 Commission. United Kingdom. <http://uk2070.org.uk>
- 2020 “Policy Brief: The Geography of the COVID-19 Pandemic in England. Responding to COVID-19 in the Liverpool City Region”. Submission to inform policy discussions and recommendations at the Liverpool City Region. Liverpool, United Kingdom. [https :](https://)

- [//www.liverpool.ac.uk/heseltine-institute/covid-19policybriefs/](http://www.liverpool.ac.uk/heseltine-institute/covid-19policybriefs/)
- 2020 “AI and data science in the age of COVID-19 Workshops”. Selected as an expert in the use of AI and data science to assess the implications of COVID-19, and contribute evidence to develop a report documenting the lessons during the COVID-19 pandemic and strategic priorities going ahead. Online. United Kingdom.  
<https://www.turing.ac.uk/events/ai-and-data-science-age-covid-19>
- 2020 “Policy Brief: Changes in Neighbourhood Socio-economic Structures in Teesside, 1971-2011”. Submission as part of the Teesside Task Force, part of the work programme of the UK2070 Commission: An Inquiry into a New Economic Vision for the Teesside Economic Region, to inform and develop regional policy recommendations. Online. United Kingdom.  
<http://uk2070.org.uk/2020/10/28/uk2070-commission-launches-teesside-taskforce/>
- 2020 “Data Innovation Resource: Estimating Global Migration Flows by Using Machine Learning”. Project to showcase how machine learning techniques can be used to produce data and inform policy. Project featured on the Data Innovation Directory of the International Organization for Migration. Berlin, Germany.  
<https://www.migrationdataportal.org/data-innovation/global-migration-traditional-innovative-data-machine-learning>
- 2020 “Data Innovation Resource: Using Twitter to Understand Attitudes Towards Immigration”. Project to showcase how novel data can be used to inform policy. Project featured on the Data Innovation Directory of the International Organization for Migration. Berlin, Germany.  
<https://www.migrationdataportal.org/data-innovation/understanding-public-attitudes-towards-migrants-chile-using-twitter-data>
- 2020 “Data Innovation Resource: Using Twitter to Understand Attitudes Towards Immigration”. Project to showcase how novel data can be used to inform policy. Project featured on the Data Innovation Directory of the International Organization for Migration. Berlin, Germany.  
<https://www.migrationdataportal.org/data-innovation/understanding-public-attitudes-towards-migrants-chile-using-twitter-data>
- 2019 “Bremen International Graduate School of Social Sciences (BIGSSS) Summer School in Computational Social Science on Social Cohesion in Groningen, Netherlands”. Selected as an expert and project leader to mentor and develop a group of young academics to develop and complete a research project during two weeks.  
<http://bigsss-css.jacobs-university.de>
- 2019 “The 100 Questions – Migration Domain”. The 100 Questions Initiative sought to map the world’s 100 most pressing, high-impact questions that could be answered if relevant datasets were leveraged in a responsible manner. Selected as a bilingual expert to contribute to formulate and vote for the most relevant questions related to migration research. Project led by the GovLab in collaboration with the European Commission, International Organization for Migration and Global Migration Data Analysis Centre.  
<https://migration.the100questions.org>
- 2019 “R package CIM: Compositional Impact of Migration reached over 2,300 downloads”. The package produces statistical indicators of the impact of migration on the socio-demographic composition of an area.  
<https://cran.r-project.org/web/packages/CIM/index.html>
- 2019 “Findings from my research on internal migration decline across Europe featured in an

- Institute for Public Policy Research report”. the Divided and Connected – Regional inequalities in the North, The UK and the developed world state of the north 2019.  
<https://www.ippr.org/files/2019-11/sotn-2019.pdf>
- 2019 “Findings from my research on the impacts of internal migration on the population structures of Latin America referenced in a UN expert group meeting ‘Commission on Population and Development’ at the fifty-first session on ‘Sustainable Cities, Human Mobility and International Migration’”.  
<https://www.un.org/development/desa/pd/events/CPD51>

## **TEACHING**

### **Postgraduate**

- 2023– Population Science. <https://www.population-science.net>
- 2020– Spatial Modelling for Data Scientists. <https://gdsl-uk.github.io/san>
- 2016– Geographic Data Science Dissertation.
- 2016–2017 Population, Health and Mortality.
- 2016–2018 Theorising Human Geography.

### **Undergraduate**

#### **University of Liverpool, United Kingdom**

- 2016– Geography undergraduate dissertation supervisions.
- 2016– Geography Year 1 and 2 Tutorials.
- 2018– Toronto Field Class Year 3.
- 2019–2020 Exploring the Social World.
- 2016–2021 Population and Societies.
- 2021–2022 Virtual Field Class Year 3.
- 2017–2018 Singapore Field Class Year 3.
- 2016–2019 Statistics for Social Scientists.
- 2016–2017 Human Geography through Merseyside.
- 2016–2017 Glasgow Field Class Year 2.

#### **University of Queensland, Australia**

- 2016 Global Population Issues.
- 2015 Human Mobility and Migration.
- 2014 Human Settlements.

#### **Universidad Catolica del Norte, Chile**

- 2008 Statistics.
- 2008 Macro-economics.

## **Universidad Santo Tomas, Chile**

2007 Algebra

2007 Macroeconomics

## **SUPERVISION**

### **Postdoctoral Research**

2021–22 Alessia Calafiore. “InequaliTies IN Experiencing uRbAn fuNcTion (ITINERANT)”. The University of Liverpool.

### **Research Assistance**

2024–24 Michael Mahony. “TIMELY – Validating an up-to-date dataset of internal migration to inform local and regional-scale spatial planning strategies in Chile”. The University of Liverpool.

2024–24 Rodgers Iradukunda. “Using mobile phone data to estimate internal population displacement in Ukraine during the start of the Russian invasion”. The University of Liverpool.

2023–23 Andrea Nasuto. “RECAST – Strengthening policy collaboration with the United Nations: Recovery and resilience through digital footprint data”. The University of Liverpool.

2023–23 Ruth Neville. “RECAST – Strengthening policy collaboration with the United Nations: Recovery and resilience through digital footprint data”. The University of Liverpool.

2022–22 Ruth Neville. “Understanding the mobility patterns of Ukrainians Using Twitter”. The University of Liverpool.

2021–21 Niall Newsham. “What do “left behind” areas look like over time?”. The University of Liverpool.

2020–20 Michael Mahony. “Analysis of Twitter data to measure anti-migration sentiment during COVID-19”. The University of Liverpool.

2019–21 Michael Mahony. “Assessing Machine Learning for Near-Real Time Bus Ridership Prediction During Extreme Weather”. The University of Liverpool.

### **Current PhD supervision**

2023– Rodgers Iradukunda. “Long-term spatial inequalities”. The University of Liverpool.

2022– Matt Mason. “Fuelling Hate: The Role of Social Media in Hate Crime”. The University of Liverpool.

2022– Andrea Nasuto. “Understanding the role of social media in promoting anti-migration sentiment and hate crime”. The University of Liverpool.

2022– Hannah Slocombe. “Beyond Food Banks: Everyday Geographies of Coping in Austere Times”. The University of Liverpool.

2020– Ruth Neville. “Exploring flows of international students into the UK using UCAS Application Data”. The University of Liverpool.

2019– Michael Mahony, “Understanding and Predicting the Long-term Labour Market and Migration Trajectories of Immigrants and Their Children in the United Kingdom”. The University of Liverpool.

2018– Danial Owen, “Urban sensors: exploiting the opportunities”. The University of Liverpool.

### **Complete PhD supervision**

2019–2024 Niall Newshaw. “Understanding the extent, causes, consequences and future of population decline in Europe”. The University of Liverpool.

2018–2023 Natalie Rose, “Quantifying the impact of weather on high street retail purchases.”. The University of Liverpool.

2018–2023 Andrea Apacio. “Modelling and forecasting the spatial and temporal patterns of bilateral international migration flows”. The University of Manchester.

2018–2023 Ya-Weng Tseng, “Evaluating Interdisciplinary Learning”. National Tsing-Hua University - The University of Liverpool.

2017–2021 Nikos Patias. “Scalable Analytical Framework for Spatio-temporal Data Analysis”. The University of Liverpool.

2017–2021 Jac Thomas. “Facilitating Childbearing in Taiwan: The Role of Domestic Gender Equity and Parental Leave”. National Tsing-Hua University - The University of Liverpool.

2018–2021 Li-Dan Shang. “The Education System and Labour Market Integration of Immigrants”. National Tsing-Hua University - The University of Liverpool.

2014–2020 Angelina Zhi Rou Tang, “Overseas graduates in Australia: Characteristics, dynamics and change”. The University of Queensland.

2016–2019 Leo Singer. “Life-course patterns of multimorbidity in its social contexts”. The University of Liverpool.

2016–2018 Alina Pelikh. “Transition to adulthood in England and Wales: The analysis of life trajectories of young adults”, The University of Liverpool.

2013–2015 Wilma Terblance, “Population Estimates and Projections for Australia’s Very Elderly Population at State and National Level”, The University of Queensland.

### **MSc supervision**

2022–23 Rodgers Iradukunda, “Using Smartphone Geolocation Data to Understand Displacement and Mobility Patterns of the Ukraine-Russian Conflict”. The University of Liverpool.

2018–22 Melanie Green, “Automating detailed urban data extraction from high resolution aerial imagery”. The University of Liverpool.

2020 Andrea Nasuto, “Determining the key sources, speed and evolution of the immigration debate on Twitter in the UK”, The University of Liverpool.

2020 Megan Clark, “A quantitative analysis of anti-migrant sentiment on Twitter during the COVID-19 pandemic”, The University of Bristol.

2020 Sultan Alotaibi, “COVID-19 Confirmed Cases and Deaths in United Kingdom and Association with Socio-Demographic Profile: A Spatial and Temporal Analysis”, The University of Liverpool.

2019 Michael Mahony, “Using satellite imagery and machine learning to estimate access to improved water sources: a case study of Malawi”, The University of Liverpool.

2018 Emma Branagan, “The Effects of Social Media on Trading Outcomes: A Company Case Study”, The University of Liverpool.



- 2017 Niall Newsham, “A Projection of the Demographic Impact of Syrian Migration in Germany”. The University of Liverpool. *Dissertation awarded the Bob Woods Postgraduate Dissertation Prize in population studies and reworked into a collaborative paper to be published in the Journal of Geographical Systems.*

### **Honours**

- 2013 Angelina Zhi Rou Tang, “Spatial mobility patterns of overseas graduates in Australia”, The University of Queensland.
- 2011 Rachel Ong, “Human capital and migration of international graduates in Australia: Investigating the impact of the graduate visa”, The University of Queensland.

### **PhD external examination**

- 2022 Miguel González-Leonardo, “Internal migration by educational attainment in Spain”, Centre d’Estudis Demogràfics (CED), Universitat Autònoma de Barcelona.

## **SERVICE**

### **Journal reviews**

Applied Economics Letters • Advances in Life Course Research • Applied Geography • Applied Spatial Analysis and Policy • Australian Population Studies • Cities • Comparative Population Studies • Computers, Environment and Urban Systems • Demography • Demographic Research • Economic Geography • Environment and Planning B • Environment and Planning C • Forests • Geographical Analysis • Habitat International • Humanities and Social Sciences Communications • GeoJournal • Journal of Geographical Systems • Humanities & Social Sciences Communications • The Australian Economic Review • The Australian Journal of Agricultural and Resource Economics • The Australian Economic Review • The Journal of Annals of Regional Science • Journal of Geographical Systems • Journal of Ethnic and Migration Studies • Journal of Regional Science • Journal of Population Research • Journal of the Royal Society Interface • Journal of Urban Technology • Papers in Regional Studies • PLOS One • Population and Development Review • Population Research and Policy Review • Population, Space and Place • Progress in Human Geography • Regional Studies • Royal Society Open Science • Regional Science, Regional Studies • NPJ Urban Sustainability • Nature Human Behaviour • Scientific Data • Scientific Reports • Socio-Economic Planning Sciences • Sustainable Cities and Society • The International Journal of Human Resource Management • Transportation Research Part D • Quality & Quantity • UCL Open Environment

### **Grant review**

Austrian Science Fund • Australian Research Council (ARC) • Caixa – Social Research Call • Chilean Intelligence National Agency • Chilean National Commission for Scientific and Technological Research (CONICYT) • Economic Social Research Council (ESRC) • National Science Centre Poland • Wellcome Trust.

### **Book review**

Routledge • Sage.

### **Professional Membership**

- 2022– Fellow, Royal Geographical Society.
- 2017– Member, British Society for Population Studies.
- 2016– Member, Regional Studies Association.
- 2014– Member, Regional Science Association International.
- 2013– Member, Chilean Society of Regional Science.

### **Scientific Software**

- 2021 Patias, N. and Rowe, F., extRatum, R package:  
<https://CRAN.R-project.org/package=extRatum>
- 2019 Rowe, F., Patias, N. and Rodríguez-Vignoli, J., Compositional Impact of Migration (CIM), R  
package: <https://CRAN.R-project.org/package=CIM>

### **Open data products**

- 2021 Left behind areas in England: <https://bit.ly/3aHs4TD>
- 2021 Neighbourhood trajectories in Great Britain 1971-2011: <https://data.cdrc.ac.uk/dataset/neighbourhood-trajectories-great-britain-1971-2011>
- 2017 The Chilean Internal Migration (CHIM) database:  
<https://s3.amazonaws.com/geoda/data/CHIM>
- 2017 Functional Labour Market Areas:  
<https://geodacenter.github.io/data-and-lab/FLMA/>

Updated April 2024