

Curriculum Vitae

David O'Sullivan

Address School of Environment
 The University of Auckland
 Private Bag 92019
 Auckland 1142
 New Zealand.

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Employment

2007 – present **Associate Professor** Geography, University of Auckland

2004 – 2007 **Senior Lecturer** Geography, University of Auckland

2001 – 2004 **Assistant Professor** Geography, Pennsylvania State University

1990 – 1996 **Product manager** (previously applications engineer) at Image Automation Ltd, a part of the Sira group of companies, Chislehurst, Kent, UK.

1988 – 1990 **Electronic design engineer** at STC telecom (now Nortel), North London.

Education

1997 – 2000 **Ph.D.** University of London, Centre for Advanced Spatial Analysis (CASA), University College London.
Title: *Graph-based Irregular Cellular Automaton Models of Urban Spatial Processes*. Examined by Professor Peter M. Allen, Cranfield University and Professor David Unwin, Birkbeck College, University of London. PhD supervisor Professor Michael Batty, University College London.

1996 – 1997 **M.Sc.** Cartography and Geo-information Technology (with distinction) University of Glasgow.
Title: *Using GIS to create public transport travel time isochrones for the Glasgow area*. Dissertation was awarded both the Royal Institute of Chartered Surveyors (RICS) and Association for Geographic Information (AGI) Student of the Year awards.

1989 – 1990 Part-time Certificate in Industrial Relations and Trade Union Studies (with distinction), Middlesex Polytechnic (now University of Middlesex).

1985 – 1988 **B.A./M.A.** Engineering, University of Cambridge.

Publications

Refereed journals

- Mavoa, S., K. Witten, T. McCreanor, **D. O'Sullivan**. 2011. GIS based destination accessibility via public transit and walking in Auckland, New Zealand. *Journal of Transport Geography*. Available online 8 November, <http://dx.doi.org/10.1016/j.jtrangeo.2011.10.001>.
- Mateos, P., P. A. Longley, and **D. O'Sullivan**. 2011. Ethnicity and Population Structure in Personal Naming Networks, *PLoS ONE*, **6**(9) e22943
- Xue, J. W. Friesen and **D. O'Sullivan**. Online 2011. Diversity in Chinese Auckland: Hypothesising Multiple Ethnoburbs. *Population, Space and Place*, <http://onlinelibrary.wiley.com/doi/10.1002/psp.688/pdf>
- Pearson, J., R. Lay-Yee, P. Davis, **D. O'Sullivan**, M. von Randow, N. Kerse, and S. Pradhan. 2011. Primary care in an aging society: Building and testing a microsimulation model for policy purposes. *Social Science Computer Review*, **29**(1), 21-36. <http://dx.doi.org/10.1177/0894439310370087>.
- O'Sullivan, D.** 2009. What's critical about critical GIS? *Cartographica*, **44**(1), 7-8.
- O'Sullivan, D.** and G. L. W. Perry. 2009. A discrete space model for continuous space dispersal processes. *Ecological Informatics*, **4**(2), 57-68.
- O'Sullivan, D.** 2009. Changing neighborhoods – neighborhoods changing: a framework for spatially explicit agent-based models of social systems. *Sociological Methods and Research*, **37**(4), 498-530.
- Reardon, S. F., C. R. Farrell, S. A. Matthews, **D. O'Sullivan**, K. Bischoff, G. Firebaugh. 2009. Race and space in the 1990s: changes in the geographic scale of racial residential segregation, 1990-2000. *Social Science Research*, **38**, 55-70.
- Lee, B. A., S. F. Reardon, G. Firebaugh, C. R. Farrell, S. A. Matthews, and **D. O'Sullivan**. 2008. Beyond the census tract: patterns and determinants of racial segregation at multiple geographic scales. *American Sociological Review*, **73** (October), 766–791.
- Reardon, S. F., S. A. Matthews, **D. O'Sullivan**, B. A. Lee, G. Firebaugh, C. R. Farrell, K. Bischoff. 2008. The geographic scale of metropolitan segregation. *Demography*, **45**(3), 489–514.
- O'Sullivan, D.** 2008. Geographical information science: agent-based models. *Progress in Human Geography*, **32**(2), 541–50.
- O'Sullivan, D.** and D. W. Wong. 2007. A surface-based approach to measuring spatial segregation. *Geographical Analysis*, **39**(2), 147–68.
- O'Sullivan, D.** 2006. Geographical information science: critical GIS. *Progress in Human Geography*, **30**(6), 783–91.
- Rygel, L., **D. O'Sullivan** and B. Yarnal. 2006. A method for constructing a social vulnerability index: an application to hurricane storm surges in a developed country. *Mitigation and Adaptation Strategies for Global Change*, **11**(3), 741–64.
- Manson, S. M. and **D. O'Sullivan**. 2006. Complexity theory in the study of space and place. *Environment and Planning A*, **38**(4), 677–92.
- Editorial: O'Sullivan, D., J. P. Messina, S. M. Manson and T. W. Crawford.* 2006. Space, place, and complexity science. *Environment and Planning A*, **38**(4), 611–17.

- O'Sullivan, D.** 2005. Geographical information science: time changes everything. *Progress in Human Geography*, **29**(6), 749–56.
- Editorial:* Crawford, T. W., J. P. Messina, S. M. Manson and **D. O'Sullivan**. 2005. Complexity science, complex systems, and land-use research. *Environment and Planning B: Planning & Design*, **32**(5), 792–98.
- Reardon, S. F. and **D. O'Sullivan**. 2004. Measures of Spatial Segregation. *Sociological Methodology*, **34**(1), 121–62.
- O'Sullivan, D.** 2004. Complexity science and human geography. *Transactions of the Institute of British Geographers*, **29**(3), 282–95.
- O'Sullivan, D.** 2002. Toward micro-scale spatial modelling of gentrification. *Journal of Geographical Systems*, **4**(3), 251–74.
- O'Sullivan, D.** 2001. Graph-cellular automata: a generalised discrete urban and regional model. *Environment and Planning B: Planning & Design*, **28**(5), 687–705.
- Haklay, M., T. Schelhorn, **D. O'Sullivan** and M. Thurstain-Goodwin. 2001. "So go down town": Simulating pedestrian movement in town centres. *Environment and Planning B: Planning & Design*, **28**(3), 343–59.
- Editorial:* Torrens, P. T. and **D. O'Sullivan**, 2001. Cellular automata and urban simulation: where do we go from here? *Environment and Planning B: Planning & Design*, **28**(2), 163–68.
- O'Sullivan, D.** and A. Turner. 2001. Visibility graphs and landscape visibility analysis. *International Journal of Geographical Information Science*, **15**(3), 221–37.
- Turner, A., M. Doxa, **D. O'Sullivan** and A. Penn. 2001. From isovists to visibility graphs: a methodology for the analysis of architectural space. *Environment and Planning B: Planning & Design*, **28**(1), 103–21.
- O'Sullivan, D.** 2001. Exploring spatial process dynamics using irregular cellular automaton models. *Geographical Analysis*, **33**(1), 1–18.
- O'Sullivan, D.** and M. Haklay. 2000. Agent-based models and individualism: is the world agent-based? *Environment and Planning A*, **32**(8), 1409–25.
- O'Sullivan, D.**, A. Morrison and J. Shearer. 2000. Using desktop GIS for the investigation of accessibility by public transport: an isochrone approach. *International Journal of Geographical Information Science*, **14**(1), 85–104.

Books

- O'Sullivan, D.** and D. J. Unwin. 2010. *Geographic Information Analysis*, 2nd edn. (Wiley: Hoboken, NJ).
- O'Sullivan, D.** and D. J. Unwin. 2002. *Geographic Information Analysis* (Wiley: Hoboken, NJ).

Book chapters and refereed proceedings volumes

- O'Sullivan, D.**, J. D. A. Millington, G. L. W. Perry and J. Wainwright. 2012. Agent-Based Models – Because They're Worth It? In A. Heppenstall, A. J. Crooks, L. M. See, and M. Batty (eds), *Agent-Based Models of Geographical Systems* (Springer: Dordrecht, Netherlands), pages 109-123.

- Heppenstall, A. J., A. J. Evans, M. H. Birkin, J. R. Macgill and **D. O'Sullivan**. 2005. The Use of Hybrid Agent-Based Systems to Model Petrol Markets. In T. Terano, H. Kita, H. Kaneda, K. Arai, and H. Deguchi (eds), *Agent-Based Simulation: From Modelling Methodologies to Real-World Applications*, Springer Series on Agent-Based Social Systems, pages 154–62.
- O'Sullivan, D.** 2004. Too much of the wrong kind of data: implications for the practice of micro-scale spatial modelling. In M. F. Goodchild and D. Janelle (eds), *Spatially Integrated Social Science: Examples of Best Practice* (Oxford University Press: Oxford), pages 95–107.
- O'Sullivan, D.,** J. R. Macgill and C. Yu. 2003. Agent-based residential segregation: a hierarchically structured spatial model. In C. Macal, M. North and D. Sallach (eds), *Agent 2003: Challenges in Social Simulation*, pages 493–507 (Argonne National Laboratory: Chicago). [<http://www.agent2004.anl.gov/Agent2003.pdf>]
- O'Sullivan, D.** 2002. Understanding the difference that space can make: toward a geographical agent modeling environment. In C. Macal and D. Sallach (eds), *Agent 2002: Ecology, Exchange, and Evolution*, pages 13-25 (Argonne National Laboratory: Chicago). [<http://www.agent2003.anl.gov/proceedings/2002.pdf>]
- O'Sullivan, D.** and P. M. Torrens. 2001. Cellular models of urban systems. In S. Bandini and T. Worsch (eds), *Theoretical and Practical Issues on Cellular Automata*, Proceedings of the Fourth International Conference on Cellular Automata for Research and Industry (ACRI 2000), October 4–6, Karlsruhe, Germany (Springer-Verlag: London), pages 108–16. [Also available as *CASA Working Paper 22* at <http://www.casa.ucl.ac.uk/cellularmodels.pdf>]

Reviews and other writing

- Encyclopedia entry:* ‘Complexity Theory, Nonlinear Dynamic Spatial Systems’ in Kitchin R. and Thrift N. (eds). 2009. *International Encyclopedia of Human Geography* (Oxford: Elsevier), Volume 1, 239-244.
- Encyclopedia entry:* ‘Neural Computing’ in *Encyclopedia of Geographic Information Science*, Kemp, K. (ed.). 2008. Sage, Thousand Oaks, CA.
- Review:* Batty, M. 2006. *Cities and Complexity: Understanding Cities with Cellular Automata, Agent-Based Models and Fractals* (MIT Press: Cambridge, MA). In *Environment and Planning A*, **39**(5), 1273-4, 2007.
- Encyclopedia entries:* ‘Cellular Automata’ and ‘Neural Computing’ in *Encyclopedia of Human Geography*, Warf, B. (ed.). 2006. Sage, Thousand Oaks, CA.
- Review:* Fotheringham, A. S., C. Brunson and M. Charlton. 2002. *Geographically Weighted Regression: The Analysis of Spatially Varying Relationships* (Wiley: New York). In *Geographical Analysis*, **35**(3), 272–5, 2003.
- Review:* Byrne, D. 2001. *Understanding the Urban* (Palgrave: Basingstoke, Hants). In *Environment and Planning B: Planning & Design*, **29**(2), 303–4, 2002.
- Review:* Wilson, A. G. 2000. *Complex Spatial Systems: The Modelling Foundations of Urban and Regional Analysis* (Prentice Hall/Pearson Education: Harlow, Essex). In *Environment and Planning B: Planning & Design*, **28**(3), 475–6, 2001.

Invited presentations (by self, except as indicated by *)

- O'Sullivan, D.** 2009. Invited speaker. Agent-Based Models in Social Science. Presented at Workshop on Agent-Based Models in Archaeology, University of Auckland, July 31.
- O'Sullivan, D.** 2009. Invited speaker. What's in a (Kiwi) Name? Presented to University of Auckland, Statistics Department Seminar Series, March 26.
- O'Sullivan, D.** 2008. Invited speaker. What's in a (Kiwi) Name? Presented at Centre of Methods and Policy Application in the Social Sciences (COMPASS), University of Auckland, December 12.
- O'Sullivan, D.** 2008. Invited speaker. What's in a (New Zealand) Name? Presented at Centre for Advanced Spatial Analysis, University College London, October 8.
- O'Sullivan, D.** 2008. Invited speaker. Spatial structure and spatial processes in simulation models. Presented to University of Leicester, Department of Geography, October 2.
- O'Sullivan, D.** 2008. Invited speaker. Representing dynamic neighbourhoods. Presented to City University London, Department of Information Science, September 17.
- O'Sullivan, D.** 2008. Invited speaker. Spatial structure and spatial processes in simulation models. Presented at National Centre of Geocomputation, National University of Ireland, Maynooth, August 7.
- O'Sullivan, D.** 2008. Invited panellist, panel discussion 'Straddling the Fence: Critical GIS'. *104th Annual Meeting of the Association of American Geographers*, Boston, MA, April 15–19.
- O'Sullivan, D.** 2008. Invited speaker. Modelling human behaviour: pie in the sky, or useful? *Rethinking Consumption: A Symposium on Sustainable Consumption*, Royal Society of New Zealand, Wellington, New Zealand, March 12-13.
- O'Sullivan, D.** 2007. Invited keynote speaker. The production of space in social simulation models. *International Workshop on Social Space and Geographic Space*, Melbourne, Australia, September 19.
- O'Sullivan, D.** and M. N. Gahegan. 2007. Issues around verification, validation, calibration, and confirmation of agent-based models of complex spatial systems. *NSF-ESRC Workshop on Agent-based Models of Complex Spatial Systems*, Santa Barbara, CA, April 14–16.
- O'Sullivan, D.** 2006. Dynamic spatial models of urban processes. *World University Network Global GIS Academy Virtual Seminar Series*, e-seminar, December 13/14. This is a global seminar series using virtual classroom technology with seminar participants in several countries in North America and Europe.
- O'Sullivan, D.** 2006. Applying multiple methods to researching spatial problems: the New Zealand school system. Presented at *The Sixth Australasian Postgraduate Workshop on GISc; Social and Environmental Modelling*, Kioloa, NSW, August 29–31.
- O'Sullivan, D.** 2006. Spatial analysis: a roadmap. Presented at *National Institutes of Health Workshop on GIS and Population Science*, Penn State, University Park, PA, June 13.
- O'Sullivan, D.** 2005. Virtual spaces, places and communities: simulating urban change. Presented to University of Auckland Social Simulation Interest Group, Department of Sociology, Auckland, New Zealand, November 29.

- O'Sullivan, D.** 2005. Simulating urban dynamics. Presented to New Zealand Geographical Society, Old Government House, Auckland, New Zealand, October 12.
- O'Sullivan, D.** 2005. Simulating urban neighbourhood change. Presented to University of Canterbury, Department of Geography, Seminar Series. Christchurch, New Zealand, September 14.
- O'Sullivan, D.** 2005. Virtual spaces, places and communities: simulating urban change. Presented to University of Auckland, School of Geography and Environmental Science, Seminar Series. Auckland, New Zealand, August 25.
- O'Sullivan, D.** 2005. Simulating urban neighbourhood dynamics. Presented to University of Melbourne, Department of Geomatics, Seminar Series. Melbourne, Australia, August 11.
- O'Sullivan, D.** 2005. Spatial analysis: a roadmap. Presented at *National Institutes of Health Workshop on GIS and Population Science*, Penn State, University Park, PA, June 3.
- Reardon, S. F.* and **D. O'Sullivan**. 2004. Measuring spatial segregation. Presented to Population Research Institute, The Pennsylvania State University, University Park, PA, April 20.
- O'Sullivan, D.** 2004. Schelling bound and unbound: modeling residential segregation with complex spatial structure. Presented to *Complex Systems Advanced Academic Workshop* at Center for the Study of Complex Systems, University of Michigan, Ann Arbor, MI, March 11.
- O'Sullivan, D.** 2003. Spatial analysis: a primer. Presented at *Center for Spatially Integrated Social Science Population Science and GIS Workshop*, Penn State, University Park, PA, May 19–23.
- O'Sullivan, D.** 2003. The geography of complexity: learning from models of gentrification. Presented to Center for the Study of Complex Systems, University of Michigan, Ann Arbor MI, March 13.
- O'Sullivan, D.** 2001. From cells to agents: putting some life into GIS. Presented at *GeoInfo 2001 III WorkShop Brasileiro de GeoInformatica*. Rio de Janeiro, October 4–5.

Presentations (by self, except as indicated by *)

- Millington, J. D. A.*, **D. O'Sullivan**, and G. L. W. Perry. 2011. Model Histories: The Generative Properties of Agent-Based Modelling. Presented at *Annual Conference of the Royal Geographical Society with the Institute of British Geographers*, Royal Geographical Society, London, August 31 – September 2.
- D. O'Sullivan, D.** and P. Mateos. 2011. Naming networks and population structure. Presented at the *107th Annual Meeting of the Association of American Geographers*, Seattle, WA, April 12–16.
- Manson, S. M.* and **D. O'Sullivan**. 2011. Do physicists have geography envy? Presented at the *107th Annual Meeting of the Association of American Geographers*, Seattle, WA, April 12–16.
- Morgan, F. J.* and **D. O'Sullivan**. 2010. Residential developers: Competition, behaviour and the resulting urban landscape. Presented at the *106th Annual Meeting of the Association of American Geographers*, Washington, DC, April 14–18.

- O'Sullivan, D.** and G. L. W. Perry. 2009. Simulating long distance dispersal processes in spatially heterogeneous landscapes. Presented at *Geocomputation 2009*, University of New South Wales, Sydney, Australia, November 30 – December 2.
- Morgan, F. J.* and **O'Sullivan, D.** 2009. Residential developers: Competition, behaviour and the resulting urban landscape. Presented at *Geocomputation 2009*, University of New South Wales, Sydney, Australia, November 30–December 2.
- Tate, N. J.*, **D. O'Sullivan**, and P. F. Fisher. 2009. Postpositivisms and GIScience. Presented at the *105th Annual Meeting of the Association of American Geographers*, Las Vegas, NV, March 22–27.
- O'Sullivan, D.**, S. F. Reardon, C. R. Farrell, S. A. Matthews, K. Bischoff and G. Firebaugh. 2008. Race and Space in the 1990s: Changes in the Geographic Scale of Racial Residential Segregation, 1990-2000. Presented at the *104th Annual Meeting of the Association of American Geographers*, Boston, MA, April 15–19.
- Morgan, F. J.* and **O'Sullivan, D.** 2008. Understanding the human dynamics of neighbourhood re-development with agent-based models. Presented at the *103rd Annual Meeting of the Association of American Geographers*, San Francisco, CA, April 17–21.
- Mahdavi, B.*, **O'Sullivan, D.**, and P. Davis. 2007. An Agent-based Microsimulation Framework For Investigating Residential Segregation Using Census Data. Presented at *MODSIM 2007 International Congress on Modelling and Simulation*, Christchurch, New Zealand, December 10-13.
- Firebaugh G.*, S. F. Reardon, B. A. Lee, S. A. Matthews, K. Bischoff, C. R. Farrell, and **D. O'Sullivan**. 2007. Methods for studying the geographical scale of metropolitan racial segregation. Presented at *Meeting of the International Sociological Association Research Committee on Stratification*, Brno, Czech Republic, May 25.
- O'Sullivan, D.** and C. J. McDowall. 2007. School Choice and Neighborhood Change in New Zealand, 1998-2005. Presented at the *103rd Annual Meeting of the Association of American Geographers*, San Francisco, CA, April 17–21.
- Morgan, F. J.* and **O'Sullivan, D.** 2007. Understanding the human dynamics of neighbourhood re-development with agent-based models. Presented at the *103rd Annual Meeting of the Association of American Geographers*, San Francisco, CA, April 17–21.
- O'Sullivan, D.** and G. L. W. Perry.* 2006. An Approach to Simulating Localised Diffusion Processes on Large-scale Landscapes. Presented at *SIRC 2006: 18th Annual Colloquium of the Spatial Information Research Centre*, University of Otago, Dunedin, New Zealand, November 6–7.
- Reardon, S. F.*, G. Firebaugh, **D. O'Sullivan**, and S. A. Matthews. 2006. New Approaches to Measuring Socio-Spatial Economic and Racial Segregation. Paper Proposal for the *29th General Conference of the International Association for Research on Income and Wealth (IARIW)*, Joensuu, Finland, August.
- O'Sullivan, D.**, T. Clephane and R. Amor. 2006. Integrating agent models and GIS: towards an extensible open source solution. Presented at *International Geographical Union 2006: Regional Responses to Global Changes - A View from the Antipodes*, Queensland University of Technology, Brisbane, Aust., July 3–7.

- Reardon, S. F.*, S. A. Matthews, **D. O'Sullivan**, B. A. Lee, G. Firebaugh, and C. Farrell. 2006. Segregation and scale: The use and interpretation of spatial segregation profiles for investigating the causes, patterns, and consequences of residential segregation. Presented at the *Population Association of America*, Los Angeles, CA, March.
- Lee, B. A.*, S. F. Reardon, G. Firebaugh, C. R. Farrell, S. A. Matthews, and **D. O'Sullivan**. 2006. Beyond the Census Tract: Patterns and Determinants of Racial Residential Segregation at Multiple Scales. Presented at the *Population Association of America*, Los Angeles, CA, March.
- O'Sullivan, D.** and J. R. Macgill. 2005. Impacts of neighbourhood scale on the dynamics of segregation. Presented at *SIRC 2005: 17th Annual Colloquium of the Spatial Information Research Centre*, University of Otago, Dunedin, New Zealand, November 24–25.
- O'Sullivan, D.**, G. L. W. Perry and J. D. A. Millington*. 2005. Science Fictions: Narrative as a tool for model-based research. Presented at *Annual Conference of the Royal Geographical Society with the Institute of British Geographers*, Royal Geographical Society, London, August 31 – September 2.
- Haklay, M.* and **D. O'Sullivan**. 2005. Complexity science in geography: understanding the limits of narratives. Presented at *Annual Conference of the Royal Geographical Society with the Institute of British Geographers*, Royal Geographical Society, London, August 31 – September 2.
- O'Sullivan, D.** and J. R. Macgill. 2005. Modelling urban residential neighbourhood dynamics. Presented at *EXYSTENCE Workshop on Modelling Urban Social Dynamics*, University of Sussex, Guilford, UK, April 7–8.
- O'Sullivan, D.** and D. W. S. Wong. 2004. A Surface-based Approach to Measuring Spatial Segregation. Presented at the *100th Annual Meeting of the Association of American Geographers*, Philadelphia, PA, March 14–19.
- O'Sullivan, D.**, J. R. Macgill and C. Yu. 2003. Agent-based residential segregation: a hierarchically structured spatial model. Presented at *Agent 2003*, University of Chicago, Argonne National Laboratory, October 2–4
- O'Sullivan, D.** 2003. Complexity science and human geography. Presented at *99th Annual Meeting of the Association of American Geographers*, New Orleans, LA, March 5–8.
- O'Sullivan, D.** 2002. Understanding the difference that space can make: toward a geographical agent modeling environment. Presented at *Agent 2002*, University of Chicago, Argonne National Laboratory, October 10–12.
- O'Sullivan D.** 2002. What about people in geographic information science? Presented at *GIScience 2002*, University of Colorado at Boulder, September 25–28
- O'Sullivan, D.** 2002. Modeling complex social spaces: the case of gentrification. Presented at Penn State Department of Geography Coffee Hour, March 29.
- O'Sullivan, D.** 2001. Toward micro-scale modeling of gentrification in relational spaces. Presented at the *97th Annual Meeting of the Association of American Geographers*, New York City, NY, February 27–March 3.
- Torrens, P. M.* and **D. O'Sullivan**. 2000. Cities, cells and complexity: developing a research agenda for urban geocomputation. Presented at *Geocomputation 2000*, University of Greenwich, London, August 25–28.

- Schelhorn, T., **D. O'Sullivan**, M. Haklay and M. Thurstain-Goodwin. 1999. STREETS: an agent-based pedestrian model. Presented at *Computers in Urban Planning and Urban Management*, Venice, 8–10 September. [Also available as *CASA Working Paper 9* at <http://www.casa.ucl.ac.uk/streets.pdf>]
- O'Sullivan, D.** 1999. Exploring the structure of space: towards geocomputational theory. Presented at *GeoComputation 99*, Mary Washington College, Fredericksburg, VA, July 25–28.
- Jiang, B. and **D. O'Sullivan**. 1998. Urban Morphology in the Context of GIS. Presented at *GIS Research UK*, University of Edinburgh, March 30–April 2.

Research support

2009	Co-investigator	Performance-Based Research Fund support for visit by Prof. John Wainwright (Sheffield)
2006/08 (current)	PI	University of Auckland Research Fund New Staff Award , 'Exploring the relationships between school choice, school zones, and urban social geography' using spatial analysis methods and GIS. Total support NZ\$13,900
2008	PI	Host, Distinguished Visitor Dr Dimitris Ballas, University of Sheffield, funded by Performance Based Research Fund and Social Policy Evaluation and Research unit of Ministry of Social Development. Total support NZ\$ 8,500
2007/08	Co-investigator	Modelling Primary Care in an Aging Society (PCASO) funded by Health Research Council, PI Prof Peter Davis (Sociology, Auckland). 20% salary contribution. A project to develop a simulation model of the impact of changes in population demographics on the New Zealand primary health care system.
2005/08 (current)	Consultant / co-investigator	Social Science Methodology grant to develop improved measures of spatial segregation funded by US National Science Foundation. PI Prof. Sean Reardon, Stanford University, Sociology and Education. This is a two year project to develop GIS-based methods for measuring ethnic or income-based segregation of urban populations. I am coordinating technical aspects of the project, and contributing spatial analysis expertise. Total support over 2 years (extended to 3) US\$225K.
2006 (completed)	PI	Host to University of Auckland Distinguished Visitor Awardee Prof Mark Gahegan. Total support NZ\$8,500

2003/04 (completed)	Co-investigator	<p>A Model GIS/Atlas for State Comprehensive Cancer Control funded by The Centers for Disease Control with the Association of American Medical Colleges. PI Prof. Gene Lengrich, Penn State Hershey Medical Center.</p> <p>I am no longer working on this project having left Penn State, but continue to serve on the project Advisory Committee.</p> <p>Total support over 3 years US\$300K.</p>
2003/04 (completed)	Co-PI	<p>The Segregation Project a Penn State Children Youth and Families Consortium Level II project to support development of proposals for externally funded research on <i>spatial</i> measures of urban residential segregation.</p> <p>Total support over one year US\$15,000.</p>
2003/04 (completed)	One month salary support	<p>Ford Foundation One Nation supplemental grant awarded to PI Prof. Amy Glasmeier, Penn State Geography.</p>
Summer 2003 (completed)	One month salary support	<p>Choosing Schools, Choosing Neighborhoods: Understanding the 'New Segregation', funded by National Academy of Education Postdoctoral Fellowship project, PI Prof. Sean Reardon, Education and Sociology, Penn State.</p>
2002/03 (completed)	PI	<p>Feasibility of geographical agent-based modelling tools, funded by College of Earth and Mineral Sciences, Penn State. Total support US\$4,000.</p>

Teaching

Full courses

University of Auckland

Current

Geog 318 **GIS for Human Environments** Lecturer and coordinator

Semester 1 2010, S1 2009

Developed S1 2009

Geog 771 **Spatial Analysis** Main lecturer and course coordinator

Semester 1 2010, S1 2009, S1 2008, S1 2007, S2 2006

Course coordinator S2 2005

Developed S2 2006

Geog 774 **GIS and Spatial Modelling** (since S2 2009 EnvSci 704)

Lecturer and coordinator

Semester 2 2010, S2 2009, S2 2008, S2 2007, S2 2006, S1 2005
Developed S1 2005
Substantially updated: S2 2006, S2 2009

Geog 779 **GIS Customization and Programming** Lecturer and coordinator
Semester 2 2010, S2 2009, S1 2008
Developed S1 2008

Geog 250 **Research Practice in Geography** Lecturer (with 3 others)
Semester 1 2010, S1 2009, S1 2008
Developed S1 2008

Past

Geog 319 **Advanced Methods in GIS** Lecturer and coordinator
Semester 1 2007, S1 2006, S1 2005
Developed S1 2005

Geog 204 **Geographic Data Analysis** Main lecturer and coordinator
Semester 1 2007, S1 2006, S1 2005
Developed S1 2005

Pennsylvania State University

Geog 455 **Spatial Analysis II** Lecturer and coordinator
Taught Spring 2004, 2003, 2002, 2001
Developed Spring 2001

Geog 597A Graduate Seminar **Geographic modeling and complexity**
Spring 2004

Geog 454 **Spatial Analysis I** Lecturer and coordinator
Taught Fall 2003, 2002, 2001
Developed Fall 2001

Geog 586 Professional Masters in GIS **Geographic Information Analysis**
Online course materials developed Fall 2003
Course delivered (11 times): Fa 2010, Sp 2010, Su 2009, Fa 2008,
Sp 2008, Fa 2007, Su 2007, Sp 2007, Fa 2006, Fa 2005, Wi 2005

Geog 596 **Independent study** Spatial analysis
Taught Fall 2003 (1 student), Spring 2001 (3 students)

Geog 596 **Independent study** Multi-agent systems
Taught Spring 2003 (1 student)

Geog 356 **Programming for Geographers** Lecturer and coordinator
Taught Fall 2002, Spring 2002
Developed Spring 2002

Geog 597A Seminar: **Urban dynamics and gentrification: models and metaphors**
Fall 2001

Contributions to other courses

University of Auckland

- S2 2005–09 Environmental Science 310 **Environmental modelling** guest lectures on ‘Simulation modelling of social systems’
- S1 2005 Geography 701 **Theory and Practice of Geography** guest lecture on ‘Methodologies in Geography’
- S2 2004–06 Geography 208 **GIS and human environments** guest lecture on ‘Pedestrian modelling’
- S2 2004 Geography 771 **Spatial Analysis** guest lecture on ‘Multicriteria decision support’
- S2 2004 Geography 774 **Geographical Information Systems and modelling** guest lecture on ‘Model verification’

Pennsylvania State University

- Fall 2003 Geography 597A Research topics in Geographic Information Science, Guest lecture: “**Introduction to spatial analysis and spatial modeling**”
- Fall 2002 Geography 500 Introduction to Geographic Research, Guest lecture: “**An Introduction to GIScience, Cartography, Visualization, and Modeling**” or “**What is GIScience?**”
- Fall 2002 Geography 580 Research topics in Geographic Information Science, Guest lecture: “**Introduction to spatial analysis and spatial modeling**”

Graduate student advising

Advisees:

Current PhD

- Matthew Bradbury – building a sustainable waterfront
- Suzanne Mavoia – effects of neighbourhood definition in the context of studies of health and physical activity
- Cheng Liu – combining housing and household life cycles in a model of gentrification
- Babak Mahdavi – simulating urban social change

Current Masters

- Phil Donovan – modelling the effects on urban form of the roading v transit balance

Completed PhD

- Fraser Morgan – simulating urban development
- Seong-Yun Hong – Korean community in Auckland, New Zealand

Completed Masters

- Chris Rudge. 2011. *Modelling kauri forest dynamics with an Individual-based model*
- Jingjing Xue. 2008. *Chinese Ethnoburbs in Auckland, New Zealand – A Spatial Approach*
- Yin Ting Fong. 2007. *Buying into School Zones? An Approach Based on Council Land Valuation*
- Birgit Muehlenhaus. 2004. *The Diffusion of Retail Location-based Services: Geography and the Privacy Issue*

Doctoral Committees: Thesis*Completed*

- James O'Brien. 2005. *A Framework for Representing, Manipulating and Reasoning with Geographic Semantics*
- Frank Hardisty. 2003. *Strategies for Designing Coordinated Geographic Visualization Software for Enumerated Data: A Component-based Approach*

Doctoral Committees: Candidacy*Completed*

- Tanuka Bhowmick, Xiping Dai, Chen Guo, Junyan Luo, James O'Brien, Bill Pike, Michael Rios, Reuben Rose-Redwood, Anu Sabhlok

Masters Committees*Completed*

- Lisa Rygel. 2004. *Modeling the Vulnerability of Coastal Communities to Hurricane Storm Surge Associated with Sea-Level Rise: A Case Study of Hampton Roads, Virginia*
- Joel Staub. 2004. *Re-Creating Hollow Landscapes: The Former Shenandoah National Park Residents*
- Geoffrey Hatchard. 2003. *A Study of Road Network Representation on a Typical Highway Map*
- Christine Mares. 2003. *Effects of Three Fuel Treatments on Forest Fuels and Fire Effects in a Ponderosa Pine Forest in Northeastern California.*
- Jennifer Nolan. 2002. *Digital Cultural Heritage: Expanding Preservation's Abridged Context along Chestnut Street in Philadelphia.*

Other teaching contributions

2005/06	Co-advisor (with Assoc. Prof Robert Amor, Computer Science) Faculty of Science Summer Scholarship Student, Tim Clephane
S2 2006–07	Guest lecture on GIS as part of the Postgraduate Diploma in Education Teaching Geography EDCURSEC 627

Service**Departmental**

2009 – present	School of Environment Head of Postgraduate Research, responsible for PhD programme of ~50 research students
2007/08	SGGES Visitor Programme coordinator
2007/08	SGGES Research Committee
Oct 2007	SGGES Environmental Science Student presentation judge
Nov 2006	Presenter, outreach meeting with Auckland Geography Teachers' Association
Oct 2006	SGES Environmental Science Student presentation judge
2005/06	SGES Undergraduate Committee
2004/06	Active driver of redevelopment of the GIS teaching programs at University of Auckland
2003/04	Geography Internship Committee

	Miller Lecture Series Committee
	Resources and Environment Committee
Spring 2003	Miller Award Committee
2002 – 2004	Geographic Information Science Curriculum Subcommittee
Spring 2002	Graduate Selection Committee
Spring 2001	Miller Award Committee

Faculty and University

March 2011	Faculty of Science Vice-Chancellor's PhD Thesis Prize Committee member
Oct 2010 – present	Faculty of Science Scholarships subcommittee of the Postgraduate Committee
Aug – Sep 2010	Department Staffing Advisory Committee (DSAC) to Director (promotions)
March 2010	Faculty of Science Vice-Chancellor's PhD Thesis Prize Committee member
October 2009	Judge, Faculty of Science Poster Competition
2009 – present	Faculty of Science Postgraduate Committee (ex officio)
Feb 07 – Jan 09	Sub-Professorial member Vice-Chancellor's Staff Advisory Committee
Oct 07	Participant HR Staff Survey follow up workshops
Feb – May 06	University host to Prof. Mark Gahegan, Distinguished Visitor from Penn State Geography and Information Science. Contributions included: organisation of specialist international workshop, co-organiser of departmental seminar and public lecture, organisation of visitor contributions to graduate and undergraduate courses
2003 – present	Penn State World Campus Masters in Geographic Information Systems Advisory Board
Winter 05	Faculty host to James Millington, visiting PhD candidate from Geography at King's College London
Spring 04	Assisted with Penn State Department of Landscape Architecture faculty search
Spring 03	Penn State College of Earth and Mineral Sciences Wilson Research Initiation Grant Committee
Spring 03	Penn State 18 th Annual Graduate Exhibition Awards Judge

Disciplinary

Oct 11 – present	Scientific Committee of <i>the International Symposium on Cellular Automata Modeling for Urban and Spatial Systems</i> , 2012, Oporto, Portugal
Sept 11 – present	Programme Committee member <i>GIScience 2010</i>
2011 – present	Co-editor <i>Environment and Planning B: Planning & Design</i>
Mar 10 – present	Programme Committee Member <i>First International Conference on Spatial Thinking and Geographic Information Science 2011</i>
Dec 09	Paper reviewer, submissions to GIS Research UK (<i>GISRUK</i>) 2010

Dec 09	Expert reviewer, 3 proposals, to Swiss Secretariat for Education and Research, under the COST (European Cooperation in the Field of Scientific and Technical Research) programme
2009 – 10	Programme Committee member <i>GIScience 2010</i>
2009 – present	Advisory Board Member, COMPASS research group, University of Auckland
2008	Programme Committee member <i>GIScience 2008</i>
2009	External Examiner PhD Thesis Curtin University of Technology (Australia)
Nov 07 – present	Editorial board <i>International Journal of Geographical Information Science</i>
Jun 07 – present	Editorial board <i>Computers, Environment and Urban Systems</i>
2007	External Examiner PhD Thesis Otago University, Information Science
2007	External Assessor on Promotion Application for a major Australian University
2007	External Examiner MSc Thesis (×2) University of Melbourne, Department of Geomatics
2007	Program Committee Member, International Workshop on Social Space and Geographic Space, Melbourne, Australia
2006 –07	Program Committee Member, International Cartographic Association Workshops on Geospatial Analysis and Modeling (2 events)
2006 – present	Secretary Auckland branch, New Zealand Geographical Society
2005 – present	Editorial board <i>Transactions in GIS</i>
2004 – present	External assessor/reader for University of Canterbury Geography Honours and Masters dissertations (3 or 4 per year).
2006	GeoCart 2006 New Zealand Cartographic Society International Conference, Organising Committee
2006	Reviewer of Israel Science Foundation proposal
2006	Organiser of Specialist International Workshop on ‘Intelligent GIScience’ held at University of Auckland.
2004 – 05	Program Committee member EU funded <i>EXYSTENCE Workshop on Modelling Urban Social Dynamics</i> , University of Sussex, Guilford, UK.
2004	Co-organiser with Steven Manson (Minnesota), Joe Messina (Michigan State) and Tom Crawford (East Carolina) of two paper sessions on ‘Geographical Perspectives on Complexity’ at the 100 th Annual Meeting of the Association of American Geographers, March 2004. Co-organiser with David Wong (George Mason), of three paper sessions on urban segregation at the 100 th Annual Meeting of the Association of American Geographers, March 2004.
2003	USGS proposal reviewing
2001	Program Committee <i>GeoInfo 2001</i>
2001 – present	NSF proposal reviewing – one or two per year
2001 – 11	Editorial board <i>Environment and Planning B: Planning & Design</i> (currently a co-editor)

2001 – present	Regular book proposal and chapter reviewer (about one a year) Wiley, OUP.
2000	Co-organiser with Paul Torrens, Specialist Workshop on ‘Urban Cellular Automata: Where Are We Now?’, Centre for Advanced Spatial Analysis, University College London, October.

Other professional service

May 06	Invited participant Auckland Regional Council “A skilled and responsive labour force for Auckland” Metro Auckland project.
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Refereeing for journals

I have done reviewing work for journals as follows. Each review in a year is recorded once (re-submissions appear only once):

Advances in Complex Systems 2007
American Journal of Sociology 2007
Annals of the Association of American Geographers 2008 2003 2002
Computational Statistics 2003
Complexity 2010
Computers and Geosciences 2009 2007
Computers, Environment and Urban Systems 2011 2011 2010 2010 2010 2009 2008
2008 2007 2007 2006 2005 2002 2001
Discrete Dynamics in Nature and Society 2006
Environment and Planning A 2010 2009 2008 2007 2005 2005 2004 2004 2003
Environment and Planning B: Planning & Design 2009 2009 2009 2007 2007 2007
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2002 2002 2002 2002 2001 2001 2001 2000 1999 1999 1998
Geoforum 2006
Geographical Analysis 2008 2005 2004 2004
Geography Compass 2009
Health and Place 2009 2008
IEEE Transactions on Evolutionary Computation (IEEE-TEC) 2003
International Journal of Geographical Information Science 2011 2011 2010 2009
2009 2009 2008 2008 2008 2007 2007 2006 2005 2005 2004 2003 2003 2001
International Regional Science Review 2011
Journal of Artificial Societies and Social Simulation 2011 2011 2010 2009 2007 2001
Journal of Computational and Graphical Statistics 2002
Journal of Environmental Management 2006
Journal of Land Use Science 2011
Journal of Mathematical Sociology 2006
Journal of Spatial Information Science 2011 2010 2009
Progress in Human Geography 2010 2008
Professional Geographer 2007
Review of Urban and Regional Development Studies 2005
Transactions in GIS 2008 2008 2007 2006 2006 2006 2006 2006
Transactions of the Institute of British Geographers 2005
Transportation Record 2002
Urban Geography 2011
Urban Morphology 2005 2004

Urban Studies 2010 2010

Professional memberships

2005 – present	Associate of New Zealand Geographical Society
2000 – present	Fellow of Royal Geographical Society – Institute of British Geographers
2000 – present	Member of the Association of American Geographers