



DEREK T. ROBINSON

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Curriculum Vitae

AREAS OF INTEREST

My research program is focused in land-use science, biogeochemistry and the carbon cycle within the context of geography and geomatics. I answer interdisciplinary questions related to the interactions, feedbacks, and impacts between human land use and natural systems. Part of this agenda involves the design and construction of agent-based models that provide a critical approach to formalize (in computer code) and synthesize our current understanding of land-use and land-management decisions and their ecological impacts. This work has led to novel methodological developments involving 1) empirically informing agent-based models (ABMs) using different approaches, equipment, and types of data; 2) calibrating ecosystem models to assess carbon storage in highly fragmented and human dominated landscapes, which includes the collection, analysis, and publication of field data; and 3) integrating ABMs, geographical information systems (GIS), and ecosystem models (e.g., BIOME-BGC).

A growing area of my research program lies in the spatial analysis and forecasting of market demand for commercial retail developments. While most ABMs developed and applied in land use science focus on residential or farming households, the behaviours and decision-making of commercial actors remains an under-explored area of representation. Research in this area is difficult due to the proprietary nature of commercial sales and customer data, but the experience for students is high-quality industry-relevant training and expertise that provides a more holistic understanding of land-use change and the broader science of land systems.

This overarching program assesses the drivers, impacts, and responses between natural (e.g., climate, carbon cycle) and human systems (e.g., land use, land management) and is driven by theories in geography, ecology, and complexity science. To investigate questions within these areas requires the creation and use of ecological and human decision-making models, computational experiments, and novel approaches for collecting, analyzing, and visualizing ecological and social data.

Keywords of Research: land use, land management, ecosystem function, carbon, social survey, field measurements, unmanned aerial vehicle, human decision making, agent-based modelling, suitability analysis and site selection, UAV

ACADEMIC APPOINTMENTS

2012 – Assistant Professor, University of Waterloo, Department of Geography and Environmental Management
2010 – 2011 Post-doctoral Research Associate, University of Edinburgh, School of GeoSciences
2009 – 2010 Post-doctoral Research Associate, University of Michigan, School of Natural Resources & Environment

EDUCATION

2003 – 2009 PhD, University of Michigan, School of Natural Resources & Environment
2001 – 2003 MES, University of Waterloo, Department of Geography
1996 – 2001 BES, University of Waterloo, Department of Geography

AWARDS, HONOURS, & SCHOLARSHIPS

	<i>Sum of Awards, and Scholarships (\$CDN):</i>	\$118,700
2014 Outstanding Performance Award, University of Waterloo		
2012 Humboldt Colloquium, "Excellence in Research", Alexander von Humboldt Foundation 3-day early career researcher program, Toronto, ON, November 2-4.		\$150
2009 NASA – MSU Professional Enhancement Award		\$700
Travel Grants, AAG SAM, Rackham, SNRE		\$1100

2008	Terrestrial Ecosystem Faculty Award, faculty elected student for outstanding scholarship, UM.	
	American Association of Geographer's GIS Specialty Group Student Paper Competition, 2 nd Place	\$750
	Travel Grants, Rackham, SNRE.	\$800
2007	Graham Environmental Sustainability Institute (GESI) Fellow, UM.	\$50,000
	AAAS/Science Program for Excellence in Science Award.	
2006	Natural Sciences & Engineering Research Council of Canada (NSERC) PGS-D.	\$42,000
	Dissertation Research Grant, American Association of Geographers.	\$400
	Doctoral Research Grant, SNRE, UM.	\$300
	Rackham Discretionary Candidate Award, UM.	\$2,500
2005	Rackham Interdisciplinary Workshop Grant, UM.	\$6,000
	Rackham Discretionary Pre-Candidate Award, UM.	\$1,500
	Doctoral Research Grant, SNRE, UM.	\$300
	Travel Grants, SNRE, Rackham, UM, 2005-2007.	\$2,200
2003	Recruitment Scholarship, SNRE, UM.	\$10,000
2002	Lorne Russwurm Excellence in Teaching Award, Dept. of Geog., University of Waterloo.	

REFEREED JOURNAL PUBLICATIONS

underline indicates graduate student authors and double underline indicates undergraduate student authors

25. 2016, Currie, W.S., Kiger, S., Nassauer, J.I., Hutchins, M., Marshall, L.L., Brown, D.G., Riolo, R.L., **Robinson, D.T.**, and S. Hart. Human-dominated residential land in southeastern Michigan stores carbon similar to secondary forests. *Ecological Applications*, 26(5), 1421-1436.
24. 2016. Evans, I., Miki, J., Ho., J., and **D.T. Robinson**. Benchmarking stereo-derived DSMs to LiDAR by land cover and slope for resource development in northern Ontario, Canada. *International Journal for Remote Sensing*, 37(6): 1411-1430.
23. 2015. Rooney, R., **Robinson, D.T.**, and R. Petrone. Megaproject reclamation and climate change. *Nature Climate Change*, 5: 963-966.
22. 2015. Bell, A.R., **Robinson, D.T.**, Malik, A., and S., Dewal. Modular ABM development for improved dissemination and training. *Environmental Modelling and Software*, 73: 189-200.
21. 2015. Guillem, E.E., Murray-Rust, D., **Robinson, D.T.**, Barnes, A., and M. Rounsevell. Modelling farmer decision-making to anticipate tradeoffs between provisioning ecosystem services and biodiversity. *Agricultural Systems*, 137: 12-23.
20. 2014. Murray-Rust, D., **Robinson, D.T.**, Guillem, E., Karali, E., and M. Rounsevell. Aporia: an open framework for agent based modeling of land use change. *Environmental Modelling and Software*, 61: 19-38.
19. 2014. Murray-Rust, D., Brown, C., van Vliet, J., Alam, S.J., **Robinson, D.T.**, Verburg, P.H., and M. Rounsevell. Combining Agent Functional Types, capitals and services to model land use dynamics. *Environmental Modelling and Software*, 59: 187 – 201.
18. 2014. Huang, Q., **Robinson, D.T.** and D.C. Parker. Quantifying spatial-temporal change in land cover among exurban residential parcels. *Landscape Ecology*, 29: 275-291.
17. 2014. Sun, S., Parker, D.C., Huang, Q., Filatova, T., **Robinson, D.T.**, Riolo, R.L., Hutchins, M.D., and D.G. Brown. Market Impacts on Land Use Change: An Agent-Based Modeling Experiment. *Annals of the Association of American Geographers*, 104(3): 460-484.

16. 2013. Murray-Rust, D., Rieser, V., **Robinson, D.T.**, Milicic, V., and M. Rounsevell. Agent-based modelling of land use dynamics and residential quality of life for future scenarios. *Environmental Modelling and Software*, 46: 75-89.
15. 2013. **Robinson, D.T.**, Shipeng, S., Hutchins, M., Riolo, R.L., Brown, D.G., Parker, D.C., Currie, W.S., Filatova, T., and S. Kiger. Effects of land markets and land management on ecosystem function: A framework for modelling exurban land-changes. *Environmental Modelling and Software*, 45: 129-140. DOI: 10.1016/j.envsoft.2012.06.016
14. 2013. Luus, N., **Robinson, D.T.** and P.J. Deadman. Representing environmental processes in agent-based models of land use and cover change using ecological model approaches. *Journal of Land Use Science*, 8(2): 175-198. DOI: 10.1080/1747423X.2011.640357
13. 2013. Agrawal, A., Brown, D.G., Rao, G., Riolo, R., **Robinson, D.T.**, and M. Bommarito. Interactions between Organizations and Networks in Common-Pool Resource Governance, *Environmental Science & Policy* 25, 138-146. Model Available online at <http://www.openabm.org/model/3352/version/1/view>
12. 2012. **Robinson, D.T.**, Murray-Rust, D., Rieser, V., Melicic, V., and M. Rounsevell. Modelling the impacts of land system dynamics on human well-being: using an agent-based approach to cope with data limitations in Koper, Slovenia. *Computers, Environment, and Urban Systems* 36(2): 164-176. DOI:10.1016/j.compenvurbsys.2011.10.002
11. 2012. Rounsevell, M., **Robinson, D.T.** and D. Murray-Rust. From actors to agents in socio-ecological systems models. *Philosophical Transactions of the Royal Society B* 367: 259-269. DOI: 10.1098/rstb.2011.0187
10. 2012. **Robinson, D.T.**, Land-cover fragmentation and configuration of ownership parcels in an exurban landscape. *Urban Ecosystems*. 15: 53-69. DOI: 10.1007/s11252-011-0205-4
9. 2009. **Robinson, D.T.** and D.G. Brown, Evaluating the effects of land-use development policies on ex-urban forest cover: an integrated agent-based GIS approach. *International Journal of Geographical Information Science* 23(9): 1211-1232.
8. 2009. **Robinson, D.T.**, Brown, D.G., and W.S. Currie. Modelling carbon storage in highly fragmented and human dominated landscapes: linking land-cover patterns and ecosystem models. *Ecological Modelling* 220: 1325-1338.
7. 2009. Zellner M.L., Page S.E., Rand W., Brown D.G., **Robinson D.T.**, Nassauer J., and B. Low. The emergence of zoning policy games in exurban jurisdictions. *Land Use Policy* 26: 356-367.
6. 2008. Rindfuss, R.R., Entwistle B., Walsh, S.J., An, L., Badenoch, N., Brown, D.G., Deadman, P., Evans, T.P., Fox, J., Geoghegan, J., Gutman, M., Kelly, M., Linderman, M., Liu, J., Malanson, G.P., Mena, C.F., Messina, J.P., **Robinson, D.T.**, Sawangdee, Y., Verburg, P., Zong, G., Land use change: complexity and comparisons. *Journal of Land Use Science* 3(1): 1-10.
5. 2008. Brown D.G., **Robinson D.T.**, Nassauer J.I., An L., Page S.E., Low B., Rand W., Zellner M., and R. Riolo. Exurbia from the Bottom-Up: Agent-Based Modeling and Empirical Requirements. *Geoforum* 39: 805-818.
4. 2007. **Robinson D.T.**, Brown D.G., Parker D.C., Schreinemachers P., Janssen M.A., Huigen M., Wittmer H., Gotts N., Promburom P., Irwin E., Berger T., Gatzweiler F., and C. Barnaud. Comparison of Empirical Methods for Building Agent-Based Models in Land Use Science. *Journal of Land Use Science* 2(1): 31-55.

3. 2006. Brown, D. G. and **D. T. Robinson**. Effects of Heterogeneity in Residential Preferences on an Agent-Based Model of Urban Sprawl. *Ecology and Society* 11(1): 46. [online] <http://www.ecologyandsociety.org/vol11/iss1/art46/>
2. 2005. Brown D., Riolo R., **Robinson D.T.**, North M., and W. Rand. Spatial Process and Data Models: Toward Integration of Agent-Based Models and GIS. *Journal of Geographical Systems* (7)1: 25-47.
1. 2004. Deadman, P. J., **Robinson, D.T.**, Moran, E., and E. Brondizio. Colonist household decision-making and land-use change in the Amazon Rainforest: an agent-based simulation. *Environment and Planning B: Planning and Design* (31)5: 693 – 709.

OTHER REFEREED PUBLICATIONS

9. Accepted. Parker, D.C. and **D.T. Robinson**. Agent Based Modeling. (eds., Noel Castree, Michael Goodchild, Weidong Liu, Audrey Kobayashi, Richard Marston, and Editor in Chief Douglas Richardson) in *AAG International Encyclopedia of Geography*, Wiley.
8. Accepted. **Robinson, D.T.** and D.G. Brown. Representation, Dynamic Complex Systems. (eds., Noel Castree, Michael Goodchild, Weidong Liu, Audrey Kobayashi, Richard Marston, and Editor in Chief Douglas Richardson) in *AAG International Encyclopedia of Geography*, Wiley.
7. 2013. Brown, D.G., **Robinson, D.T.**, French, N.H.F., and B.C. Reed (eds). *Land Use and the Carbon Cycle: Advances in Integrated Science, Management, and Policy*. Cambridge University Press. New York, NY, USA. pp. 586
6. 2013. **Robinson, D.T.**, Brown, D.G., French, N.H.F., and B.C. Reed. Linking land use and the carbon cycle: A conceptual framework. Brown, D.G., **Robinson, D.T.**, French, N.H.F., and B.C. Reed (eds), in *Land use and the carbon cycle: Advances in Integrated Science, Management, and Policy*. Cambridge University Press. pp. 3-23.
5. 2013. Evans, T., **D.T. Robinson**, and M. Schmitt-Harsh. Limitations, challenges, and solutions to integrating carbon dynamics with land-use models. Brown, D.G., **Robinson, D.T.**, French, N.H.F., and B.C. Reed (eds), in *Land use and the carbon cycle: Advances in Integrated Science, Management, and Policy*. Cambridge University Press. pp 178-208.
4. 2013. Brown, D.G., **Robinson, D.T.**, and N.H.F. French. Perspectives on land-change science and carbon management. Brown, D.G., **Robinson, D.T.**, French, N.H.F., and B.C. Reed (eds), in *Land use and the carbon cycle: Advances in Integrated Science, Management, and Policy*. Cambridge University Press. pp 539-548.
3. 2012. **Robinson, D.T.**, and D.G. Brown. Querying and Changing Raster Data with Agent Analyst. Kevin Johnston (ed), in *Agent Analyst: Agent-Based Modeling in ArcGIS*. ESRI Press, 380 New York Street, Redlands, California 92373-8100.
2. 2012. D.C. Parker, D.G. Brown, T. Filatova, R. Riolo, **D.T. Robinson**, and S. Sun. Do land markets matter? A modeling ontology and experimental design to test the effects of land markets for an agent-based model of ex-urban residential land-use change. A. Heppenstall, A. Crooks, L.M. See, and M. Batty (eds), in *Agent-Based Models of Geographical Systems*, 525-542, DOI: 10.1007/978-90-481-8927-4_26
1. 2010. **Robinson, D.T.**, Filatova, T., Sun, S., Riolo, R.L., Brown, D.G., Parker, D.C., Hutchins, M., Currie, W.S. and J.I. Nassauer. Integrating land markets, land management, and ecosystem function in a model of land change. in *Proceedings of 2010 International Congress on Environmental Modelling and Software*, D.A. Swayne, W. Yang, A.A. Voinov, A.Rizzoli, T.Filatova (Eds.), Fifth Biennial Meeting, Ottawa, Canada.

OTHER PUBLICATIONS

6. 2010. Rounsevell, M., **Robinson, D.T.**, Murray-Rust, D., Rieser, V., and V. Milicic. Conceptual agent-based model of RUR land-use dynamics. Deliverable D4.2.2, Peri-urban land use relationships – strategies and sustainability assessment tools for urban-rural linkages, Integrated project, Contract No. 03691. www.plurel.net/images/D422.pdf
5. 2009. Brown, D.G., French, N.H.F., Reed, B.C., and **D.T. Robinson**. Land Use/Land Cover Change and the Carbon Cycle. Report submitted to the Land Use and Carbon Cycle Steering Groups of the US Global Change Research Program.
4. 2009. Brown, D.G., Höll, B., Mauser, W., and **D.T. Robinson**. Tough Choices – Land use under a Changing Climate. White paper – on joint German-US research activities in the field of Land Use and Global Change. Report submitted to Deutsche Forschungsgemeinschaft (DFG)/Federal Ministry of Education and Research (BMBF) and National Science Foundation (NSF).
3. 2005. Rand, W., Brown D., Riolo, R., and **D. Robinson** – *Toward a Graphical ABM Toolkit with GIS Integration*. Proceedings of Agent 2005, Chicago, IL, Oct. 13-15. <http://agent2003.anl.gov/proc2005.html>
2. 2004. Shepardson, B.L. and **D.T. Robinson** - *Land Use and Resource Management in an Agent-Based Commons Model*. Proceedings of Santa Fe Institute's Complex Systems Summer School, Santa Fe, NM, June 6 – July 2.
1. 2002. Deadman, P. J., Lim, K., **Robinson, D.**, Moran, E. and McCracken, S. *LUCITA: Multi-Agent Simulations of Land Use Change near Altamira, Brazil*. in Agent-Based Models of Land-Use and Land-Cover Change. LUC Report Series No. 6. (Eds) D. C. Parker, T. Berger and S. Manson. Irvine, California, USA, October 4-7, 2001.

CONFERENCE PAPERS, POSTERS, & PRESENTATIONS

36. 2016. Smith, A., and **D. Robinson**. Examining the relationship between land cover and land use at the parcel scale. Presented at the American Association of Geographers Annual Meeting, San Francisco, CA, USA – March 29 – April 2.
35. 2016. Evans, I., and **D. Robinson**. Methodology to relate wetland configuration and composition to human disturbance in Alberta. Presented at the American Association of Geographers Annual Meeting, San Francisco, CA, USA – March 29 – April 2.
34. 2016. **Robinson, D.T.**, and L. Zhang. Comparison of assessment methodologies on carbon storage in northern Ontario, Presented at the American Association of Geographers Annual Meeting, San Francisco, CA, USA – March 29 – April 2.
33. 2015. **Robinson, D.T.**, Caradima, M.B., and A. Balulescu. Identifying city analogues for retail location decisions. GIS in Education and Research Conference, Toronto, ON, Canada, November 30.
32. 2015. Bell, A., and **D. Robinson**. Modular ABM development for improved dissemination and training. 22nd ACM Conference on Computer and Communications Security, Denver, CO. USA, Oct. 12-16.
31. 2015. **Robinson, D.T.**, Balulescu, A., and M.B. Caradima. Multi-Scale Approach to Retail Site Selection. Presented at the American Association of Geographers Annual Meeting, Chicago, IL, USA – April 21-25.
30. 2015. Dou, Y., Deadman, P., **Robinson, D.**, Almeida, O., Rivero, S., and N. Vogt. Exploring the impacts of cash transfers on household resilience in Amazon estuary region of Brazil—an agent-based simulation. Spatial Knowledge and Information, Canada, February 27 - March 1.

29. 2014. Brown, D.G., Sun, S., Currie, W.C., Nassauer, J.I., Page, S.E., Parker, D.C., Riolo, R.L., **Robinson, D.T.**, and S.E. Kiger. Linking land markets and landscape carbon in exurban development. Global Land Project Open Science Meeting, Berlin, Germany, March 19 – 21.
28. 2014. **Robinson, D.T.**, Murray-Rust, D., Karali, E., Rounsevell, M.D.A and E.E. Guillem. Impacts of agricultural land management on human well-being and ecosystem services. Global Land Project Open Science Meeting, Berlin, Germany, March 19 – 21.
27. 2013. Brown, D.G, French, N.H., **Robinson, D.T.**, and B.C. Reed. Land Use and the Carbon Cycle: Advances in integrated science, management, and policy: A new book reviewing the influence of Land Use on the Carbon Cycle. Poster and abstract presented at the North American Carbon Program (NACP) All-Investigators Meeting, Albuquerque, NM, February 4 – 7.
26. 2013. Parker, D., Brown, D., Nassauer, J., Currie, B., Riolo, R., Page, S., Sun, S., Hutchins, M., **Robinson, D.**, Kiger, S., Huang, Q., Filatova, T., and R. Wyman. Modeling exurban development trajectories and terrestrial carbon sequestration in Southeastern Michigan, USA. Presented at the American Association of Geographers Annual Meeting, Los Angeles, CA, April 9-13.
25. 2013. Currie, W., Brown, D.G., Kiger, S., Nassauer, J.I., and **D.T. Robinson**. Scaling up carbon storage in human-dominated heterogeneous landscapes in the Great Lakes region. Presented at the American Geophysical Union Annual Fall Meeting, San Francisco, CA, December 9-13.
24. 2012. **Robinson, D.T.**, Murray-Rust, D., Rieser, V., Melicic, V., and M. Rounsevell. Using ABM experiments and scenarios to evaluate potential impacts of land-use change on human well-being in Koper, Slovenia. Applications and Developments in Simulating Land-Use Change session at the Canadian Association of Geographers Annual Conference, Waterloo, ON, May 28 - June 2.
23. 2012. Karali, E., Murray-Rust, D., **Robinson, D.T.**, Guillem, E.E., Hersperger, A.M., Brunner, B., Omann, I., Bohunovsky, L., Wesely, J., Dendoncker, N., Fontaine, C.M., Acosta-Michlik, L., and M.D.A. Rounsevell. Investigating farmer land-use decisions using an empirically informed agent-based model. Presented at A European perspective on the future of biodiversity and ecosystems - Final Conference of the ECOCHANGE FP6 *Project*, ETHZ, Rämistrasse 111, Zürich, Switzerland, March 21-22.
22. 2012. Omann, I., Bohunovsky, L., Wesely, J., Ramirez Camargo, L., Hersperger, A.M., Stoica Ilie, A., Pintea, S., Karali, E., Murray-Rust, D., **Robinson, D.T.**, Dendoncker, N., Fontaine, C.M., Acosta-Michlik, L., Rounsevell, M.D.A., and N. Zimmermann. Exploring future pathways. An integrated sustainability assessment in three European regions. Presented at A European perspective on the future of biodiversity and ecosystems - Final Conference of the ECOCHANGE FP6 *Project*, ETHZ, Rämistrasse 111, Zürich, Switzerland, March 21-22.
21. 2012. **Robinson, D.T.**, Land Use and Biophysical Carbon Cycling. Panel presenter in special session on the future directions of land use modeling and integrated assessment. Workshop on Climate Change Impacts and Integrated Assessment (CCI/IA), Snowmass, CO, USA, July 23-24.
20. 2012. Currie, W.S., Brown, D.G., Brunner, A., Fouladbash, L., Hadzick, Z., Hutchins, M., Kiger, S.E., Makino, Y., Nassauer, J.I., **Robinson, D.T.**, Riolo, R., Sun, S. Incorporating ecosystem processes controlling carbon balance into models of coupled human-natural systems. Presented at the annual meeting of the American Geophysical Union, San Francisco, CA, December 3-7.

19. 2012. Brown, D.G., Sun, S., Currie, W.S., Nassauer, J.I., Page, S.E., Parker, D.C., Riolo, R.L., **Robinson, D.T.**, An Integrated Model of Market-Driven Dynamics of Carbon in Exurban Landscapes. Presented at the annual meeting of the American Geophysical Union, San Francisco, CA, December 3-7.
18. 2011. **Robinson, D.T.**, Murray-Rust, D., Rieser, V., Rounsevell, M., Karali, E. and E. Guillem. Estimating the impacts of land-use change on human well-being and the provision of ecosystem services. Proceedings of the IALE-UK, Wolverhampton University, Telford, UK, Sept. 6-8.
17. 2011. Bone, C., Ligmann-Zielinska, A., Manson, S.M., Morgan, F., Sun, S., Brown, D., Dragicevic, S., and **D. Robinson**. Design Principles for Agent-based Models of Land-use/Land-cover change. Panelist Discussion at the Association of American Geographers Annual Conference, Seattle, WA, April 12-16.
16. 2011. **Robinson, D.T.**, Murray-Rust, D., Rieser, V., Melicic, V., and M. Rounsevell. Evaluating the impacts of land use change on human well-being and the provision of ecosystem services. Modelling Complexity, at the Association of American Geographers Annual Conference, Seattle, WA, April 12-16.
15. 2009. **Robinson, D.T.**, Brown, D.G., and W.S. Currie – *Evaluating the effects of land-use development policies on forest carbon storage: an integration of ABM, GIS, and BIOME-BGC*. Presented in the ‘Agent-based modelling of land use effects on ecosystem processes and services’ Global land project symposium at the International Association of Landscape Ecology, Snowbird, UT, April 12-16.
14. 2009. **Robinson, D.T.**, Brown D.G., and W.S. Currie – *Modelling carbon storage in highly fragmented and human-dominated landscapes: linking land-cover patterns and ecosystem models*. Association of American Geographers Annual Conference, Las Vegas, NV, March 22-27. (Session Chair)
13. 2008. **Robinson, D.T.** and D.G. Brown - Moving towards carbon storage estimates based on integrated land-use and forest process models. Joint German-U.S. Conference "Tough Choices - Land Use under a Changing Climate", Berlin, Germany, Oct. 2-3
12. 2008. **Robinson, D.T.** and D.G. Brown – *Development of a GIS-based ABM as a platform to evaluate ecological land-use development policies*. Association of American Geographers Annual Conference, Boston, MA, April 15-19. 2nd place finish in GIS specialty group student paper competition.
11. 2008. Brown, D.G., **Robinson, D.T.**, Taylor, J.T., Nassauer, J.I., Page, S.E., and R.L.Riolo – *Human Agents and Landscape Ecological Function at the Urban-Rural Fringe*. U.S. Chapter of the International Association for Landscape Ecology Conference, Madison, Wisconsin, April 6-10.
10. 2007. **Robinson, D.T.** and D.G. Brown – *Evaluation of Publicly versus Privately Directed Land-Use Policies using a GIS-Centric ABM*. Framing Land Use Dynamics II, Utrecht, Netherlands, April 18-20.
9. 2006. **Robinson, D.T.**, Brown D.G., and W.S. Currie - *Linking Ecosystem and Land-Use Process Models: A Way Forward*. Association of American Geographers Annual Conference Chicago, IL, Mar. 7-11.
8. 2005. **Robinson, D.T.** - *Identification and use of Land-Use Modelling Primitives ‘LUMPS’*. Method2Method Workshop on Multi-Agent Modeling and Collaborative Planning, Bonn, Germany Oct. 8-9.
7. 2005. **Robinson, D.T.** - *Modeling Urban Growth Using Eulerian & Lagrangian Perspectives*, Summer Institute on Agent-based Modeling and Natural Resources. Indiana University, Center for the study of Institutions, Populations and Environmental Change (CIPEC), Bloomington, IN, June 2-4.

6. 2005. **Robinson, D.T.** et al. - *Mapping Heterogeneity Levels & Neighbourhood Similarity in an Urban ABM*. Association of American Geographers Annual Conference, Denver, CO, April 5-9.
5. 2004. **Robinson, D.T.** - *Site Evaluation and Cultural Influence Extensions to a Residential Location Model*. SWARMFEST, University of Michigan, Ann Arbor, MI, May 9-11. (Poster)
4. 2003. Deadman, P.J. and **D.T. Robinson** - *Linking Multi-Agent Systems and Geographic Information Systems for Land Use Land Cover Change Modelling: A Case Study from the Brazilian Amazon*. Canadian Association of Geographers Annual Meeting, Toronto, ON, May 28 – June 1.
3. 2003. Deadman, P.J. and **D.T. Robinson** - *Framing Land Use Dynamics: Exploring Theories of Land Use Change through Agent-based Simulation*. Presented at Framing Land Use Dynamics, Utrecht, Netherlands, April 16-18.
2. 2003. **Robinson, D.T.** and P. Deadman - *Agent Based Modeling of Household Decision Making in the Brazilian Trans-Amazon Frontier*. Assoc. of American Geographers Annual Conference, New Orleans, LA, March 5-8.
1. 2001. **Robinson, D.T.** - *Private Campground Management Facilitated By GIS and VB*. Canadian Association of Geographers Ontario Division Meeting, Carleton University, Ottawa, ON, Oct. 26.

PUBLISHED EXTENDED ABSTRACTS

2. 2005. **Robinson, D.T.** and D.G. Brown. Comparison of Eulerian & Lagrangian Models for Representing a Landuse Change Process. GeoComputation 2005, University of Michigan, Ann Arbor, MI, USA, August 1-3.
1. 2004. Daniel G. Brown, Rick Riolo, **Derek T. Robinson**, William Rand, Michael North, and Kevin Johnston. Toward Integration of Spatial Data Models and Agent-Based Process Models. In Proceedings of the 3rd International Conference on GIScience, abstracts volume. Adelphi, MD, USA, October 20-23.

RESEARCH GRANTS

<i>Acquired at University of Waterloo since February 2012</i>	<i>Sum of All Project Grants (\$CDN):</i>	\$1,756,922
	<i>Sum of Funds Directed by Robinson (\$CDN):</i>	\$775,701
2016 – MRI – Early Researcher Award (2016 – 2021)		\$190,000
Project Title: Integrating Drones and Simulation to Estimate the Impacts of Climate, Technology, and Policy on Ontario Farming		
Funding Source: Ministry of Research and Innovation		
Applicant(s): Dr. Derek T. Robinson		
2015 – Husky Oil (2015 – 2016)		\$453,500
Project Title:		
Funding Source: Direct Funding from Industry Partner		
Applicant(s): Dr. Rebecca Rooney, Dr. Richard Petrone, Dr. Derek T. Robinson (\$89,973)		
2014 – NSERC – Discovery Grant (2014 – 2019)		\$130,000
Project Title: Advances in Modelling Land Change and Estimating Ecosystem Function Across Ontario		
Funding Source: National Science and Engineering Research Council of Canada		
Applicant(s): Dr. Derek T. Robinson		
2014 – MITACS – Accelerate (May – October)		\$20,000
Project Title: Natural Heritage Risk and Vulnerability Assessment in the Region of Peel		
Funding Source: Mathematics of Information Technology and Complex Systems		
Applicant(s): Dr. Johanna Wandel, Dr. D.T. Robinson, Dr. Christine Tu, and the Region of Peel		
2014 – Graduate Student Support by New Faculty Member Award (May – August 2014)		\$5,500
Funding Source: University of Waterloo		
Applicant(s): Dr. Derek T. Robinson		
Administered as Waterloo Special Graduate Entrance Award to MSc. student Ian Evans		
2013 – AI-EES – Water Resources (2013 – 2016)		\$715,837
Project Title: Sustainable wetland habitat: reclamation targets, design criteria and wetland policy implementation		
Funding Source: Alberta Innovates – Energy and Environmental Solutions		
Applicant(s): Dr. Suzanne Bayley, Dr. Rebecca Rooney – Collaborator: D.T. Robinson (\$98,116)		
2013 - CFI Leaders Opportunity Fund (October 2013 – December 2015)		\$143,278
Project Title: Infrastructure for Modelling Human-Environment Interactions in Agricultural Systems		
Funding Source: Canadian Foundation for Innovation and Ontario Research Fund		
Applicant(s): Dr. Derek T. Robinson		
2013 - UW/SSHRC Seed Grant (July 2013 – May 2015)		\$5,500
Project Title: Modelling land-use and land-management decision making		
Funding Source: University of Waterloo – Competitive Original Application		
Applicant(s): Dr. Derek T. Robinson		
2013 - Mitacs-Accelerate Cluster (May 2013 – December 2014)		\$93,334
Project Title: Estimating market potential and location allocation for land-use modelling		
Funding Source: Mathematics of Information Technology and Complex Systems		

Applicant(s): Dr. Derek T. Robinson

STUDENT LEAD GRANTS

- 2015 – Waterloo Environment Students Endowment Fund (WESEF)** \$11,000
 Project Title: An Unmanned Aerial Vehicle for the Faculty of Environment
 Funding Source: Waterloo Environment Students Endowment Fund (WESEF)
 Applicant(s): Tholath Mathew Joseph and faculty representative Dr. Derek T. Robinson
- 2015 – Undergraduate Student Research Assistant (USRA)** \$6,000
 Project Title: Effects of land-cover resolution on carbon storage estimation across southern Ontario
 Funding Source: National Science and Engineering Research Council (NSERC \$4500)
 Supplemental Funding: Undergraduate Research Internship (University of Waterloo \$1600)
 Applicant(s): Paulina Marczak and Dr. Derek T. Robinson

WORKSHOPS & INSTITUTES ATTENDED

13. 2015. Land Use and ABM Workshop, University of Edinburgh, Edinburgh, UK, May 4-5.
12. 2014. Spatial Land Use Change and Ecological Effects: Land Markets, Land Management, and Land Carbon in Exurban Environments, NSF-sponsored workshop, University of Michigan, MI, May 19-20.
11. 2013. National Center for Atmospheric Research, Integrated Assessment Modelling Working Group Annual Meeting, Boulder, CO, August 19-20.
10. 2012. Strategic Workshop on Integrated Water Management in the Three Gorges Reservoir Basin, University of Waterloo, August 7 – 8.
9. 2012. Humboldt Colloquium, “Excellence in Research”, Alexander von Humboldt Foundation three-day early career researcher program, Toronto, ON, November 2-4.
8. 2009. Many-Core Processors Summer School, Virtual School of Computational Science and Engineering, University of Michigan, August 10 – 14.
7. 2009. Santa Fe Institute Global Sustainability Summer School Program. Santa Fe, New Mexico, July 15 – 25.
6. 2009. “Land Use/Land Cover Change and the Carbon Cycle”, CCSP, USGS, and USDA sponsored workshop. University of Michigan, Ann Arbor, MI, June 8 – 9.
5. 2009. Global Land Project and U.S. NSF sponsored workshop on Agent-based land market models. The Macaulay Institute, Aberdeen, Scotland, May 29-31.
4. 2008. “Tough Choices - Land Use under a Changing Climate”, NSF and DFG workshop, invited participant, presented a poster, and part of the organizational committee. Berlin.
3. 2006. “Land-Use and Land-Cover Change” NIH-funded roadmap workshop, invited participant. East-West Center, Honolulu, HI.

2. 2005. Summer Institute on Agent-based Modeling and Natural Resources. Held at Indiana University by Center for the study of Institutions, Populations and Environmental Change (CIPEC) and instructed by Marco Janssen and Francois Bousquet. Bloomington, IN, May 16 to June 4.
1. 2004. Santa Fe Institute Complex Systems Summer School Program. Personal focus on modelling human-environment interactions through land-use and local climate change, as well as, tragedy of the commons dilemma. Santa Fe, New Mexico, June 6 – July 2.

INVITED LECTURES

15. 2015/10/16 “Integrating modelling approaches to represent land-use change”, Department of Geography, University of Guelph, Guelph, ON.
14. 2015/02/24 “Discovering the Themes of Complexity Science in Land Use Modelling”, Waterloo Institute for Complexity and Innovation, Waterloo, ON.
13. 2014/11/21 “Eight things about carbon and land management that you didn’t know and wish you did”, Deans Seminar Series, Faculty of Environment, University of Waterloo, Waterloo, ON.
12. 2013/07/22-24 “Workshop on agent-based modelling for resource management”, International Centre for Integrated Mountain Development (ICIMOD), Kathmandu, Nepal. (*co developed and instructed 2-day workshop with Dr. Brown*)
11. 2013/03/20 “Modelling the carbon implications of land use and land management”. Department of Geography, University of Waterloo, ON, CAN.
10. 2011/03/15 “Considering humans in local-to-global change”. Department of Geography, University of Maryland, College Park, MD, USA.
9. 2010/06/28 “Using ABM and ecosystem-process models to evaluate the effects of land-use policy on forest cover and carbon storage”, Department of Psychology, University of Birmingham, UK.
8. 2009/02/13 “Agent-based modeling of policies and institutions in forest cover change”, Department of Computational Social Science, George Mason University, Fairfax, VA, USA.
7. 2008/12/15 “An integrative approach to modeling land-use and land-cover change systems”, Department of Geography, George Washington University, DC, USA.
6. 2008/12/08 “Using ABM, GIS, and an ecosystem model to represent and evaluate human-environment interactions”, Department of Geography, University of Iowa, IA, USA.
5. 2008/12/04 “An integration of agent-based, GIS, and ecosystem modeling for land-use and land-cover change analysis”, Department of Geography, University of Illinois, IL, USA.
4. 2008/09/23 “Multi-criteria evaluation using ArcObjects”, SNRE graduate course in GIS and Landscape Modelling, University of Michigan, MI, USA.
3. 2008/06/16 “Agent-based modelling our way toward improved evaluations of land use policy”. School of Planning and Faculty of Environmental Studies, University of Waterloo, ON, Canada.

2. 2007/02/16 “A Review of GIS & ABM Integration: What Lies Ahead.” Geography 506: Advanced Geo-Information Systems, McGill University, Montreal, Quebec, Canada.
1. 2007/01/18 “Introduction to Agent-Based Modelling and GIS-ABM Integration” Ann Arbor GIS professionals monthly meeting. URL: <http://a2gis.blogspot.com/>

TEACHING

Courses Taught (Total 13)

2016	Advanced GIS	(Geog/Plan 381)	University of Waterloo	Spring
2016	Geographical Information Systems Project	(Geog/Plan 481)	University of Waterloo	Spring
2016	Land Use and the Carbon Cycle	(GEMCC 630)	University of Waterloo	Winter
2016	Spatial Analysis	(Geog 318)	University of Waterloo	Winter
2014	Geographical Information Systems Project	(Geog/Plan 481)	University of Waterloo	Spring
2014	Advanced GIS	(Geog/Plan 381)	University of Waterloo	Spring
2014	Land Use and the Carbon Cycle	(GEMCC 630)	University of Waterloo	Winter
2014	Spatial Analysis <i>(co-instructed, 50% of course)</i>	(Geog 318)	University of Waterloo	Winter
2013	Geographical Information Systems Project	(Geog/Plan 481)	University of Waterloo	Spring
2013	Spatial Analysis Using GIS	(Geog/Plan 381)	University of Waterloo	Spring
2012	Geographical Information Systems Project	(Geog/Plan 481)	University of Waterloo	Fall
2012	Spatial Analysis Using GIS	(Geog/Plan 381)	University of Waterloo	Spring
2011	Spatial Modelling of Human-Environment Interactions <i>(co-instructed, 40% of course)</i>	(P01227)	University of Edinburgh	Winter

Independent Study Courses Taught (Total 5)

2016	Research Design and Proposal (2)	(Geog 675)	University of Waterloo	Winter
2014	Agent-Based Modelling (3)	(Geog 675)	University of Waterloo	Spring
2013	GIS Suitability Analysis (1)	(Geog 675)	University of Waterloo	Fall
2013	Agent-Based Modelling Theory (1)	(Geog 675)	University of Waterloo	Spring
2013	GIS Programming Applications (1)	(Geog 475)	University of Waterloo	Winter

Ph.D. Supervision

Current Robert Fligg (UW/GEOG)

Ph.D. Committees

	Current	Matt Dyson	(UW/SERS)
	Current	Natasha Tang Kai	(UW/PLAN)
	Current	Joseph Aversa	(Ryerson University)
	Current	Clotilde de Montpellier d'Annevoie	(Université de Namur)
	Current	Yunwei Dong	(UW/GEOG)
2.	2016	Yue Dou	(UW/GEOG)
1.	2012	Qingxu Huang	(UW/PLAN)

Master's Supervision

Current Jennifer Ridge (UW/GEOG)
 Current Bo Sun – starting 2016 (UW/GEOG)

	Current	Collin Branton	(UW/GEOG)
	Current	Alex Smith	(UW/GEOG)
	Current	Keith Davey	(UW/GEOG)
	Current	Junyi Wang	(UW/GEOG)
5.	2016	Ian Evans	(UW/GEOG)
		NSERC Alexander Graham Bell Graduate Scholarship (\$17,500)	
		University of Waterloo President's Graduate Scholarship (\$5,000)	
4.	2016	Li Zhang	(UW/GEOG)
3.	2015	Andrei Balulescu	(UW/GEOG)
		<i>Lorne Russwurm Award for Outstanding Teaching Assistant Performance, 2014; CAG GIScience study group Honourable Mention for Oral Presentation at CAG 2014</i>	
2.	2015	Mihai Bogdan Caradima	(UW/GEOG)
		<i>CAG GIScience study 2nd Prize for Oral Presentation at CAG 2014</i>	
1.	2014	Carlos Andres Pinzon Ramirez	(UW/GEOG)

Master's Theses Committees

	Current	Matthew Bolding	(UW/BIO)
	Current	Greg Carron	(UW/GEOG)
	Current	Nicole Meyers	(UW/BIO)
3.	2016	Julia Metelka	(WLU/GES)
2.	2014	Nathanael Couperus	(UW/CEE)
1.	2013	Shira Gerstein	(UW/GEOG)
		<i>Land Cover Change and Climate on the North American Great Plains</i>	

Master's Theses Reader

5.	2016	(UW/GEOG)	
4.	2016	(UW/GEOG)	
3.	2015	Cameron Plouffe	(WLU/GES)
2.	2014	Melani Langlois	(UW/GEOG)
		<i>Landscape analysis and boundary detection of bog peatlands' transition to mineral land: The lags of the New Brunswick eastern lowlands, Canada</i>	
1.	2012	Mark Cheresna	(UW/GEOG)
		<i>Examination of processes based on open standards in support of service location.</i>	

Undergraduate Senior-Honours Thesis Supervised

8.	Current	Jacob Lovie	(UW/GEOG)
7.	Current	Ben Meinen	(UW/GEOG)
6.	2016	Courtney Liu	(UW/PLAN)
5.	2015	Luke Johnson (Proposal only)	(UW/GEOG)
4.	2014	Ian Evan	(UW/GEOG)
		<i>A review and application of RUSLE for integration in land-use change models</i>	
3.	2013	Yafang Liu	(UW-Nanjing/GEOG)
		<i>Assessment of Policy on Land Use Change: A Comparison between China and Canada</i>	
2.	2013	Chris Goetz	(UW/GEOG)
		<i>Forest Disturbance and the Carbon Cycle using CBM-CFS3.0</i>	
1.	2013	Li Zhang	(UW-Nanjing/GEOG)
		<i>Spatial Analysis of Individual-Generated Carbon Emissions</i>	

University Cooperative Education Program (UCEP) Highschool Students

3.	2015	Kyle Gojmerac	St. Benedict's, Cambridge
2.	2015	Nathaniel Ruiz	St. Benedict's, Cambridge
1.	2014	Scott Bootsma	St. Mary's, Kitchener

CEE = Civil and Environmental Engineering; GEOG = Geography and Environmental Management; GES = Geography and Environmental Studies; PLAN = School of Planning; SERS = School of Environment, Resource, and Sustainability; WLU = Wilfred Laurier University

Training

2016	Carbon Budget Model of the Canadian Forest Sector Training Workshop, Toronto, ON, March 15 – 17.
2015	Restricted Operator Certificate with Aeronautical Qualification (ROC-A), Industry Canada.
2015	Unmanned Aerial Vehicle Ground School, Waterloo-Wellington Flight Centre, Breslau, Ontario, May 25-June 17.
2015	Unmanned Aerial Vehicle Manufacturers Training. Aeryon Labs Inc., Waterloo, ON, Feb 10-11.
2007	Michigan Teaching Fellow Certificate. (5 week teaching seminar with topics including preparation for the academic job search, information about higher education, effective and reflective teaching, multicultural teaching and learning, use of instructional technology, and trips to local college campuses)
2005	University of Michigan, Principles in GIS, Teaching Assistant, Winter.
2002-	Beijing – University of Waterloo, China GIS Training Project, July 2001 – August 2002
2001	Co-delivered two-week GIS Training in Beijing - April 2002 Twice conducted two-month GIS Training in Waterloo, ON. Equivalent to lab training for three university level GIS courses. Assisted instruction of GIS and Remote Sensing Theory, and created lab modules for assignment purposes.
2002	University of Waterloo, Introductory GIS Methods, (GEOG/PLAN 255), Teaching Assistant, Winter. <i>Recipient of the Lorne Russworm Excellence in Teaching award.</i>
2001	University of Waterloo, GIS Application Development, (GEOG/PLAN 457), Teaching Assistant. Fall.
2001	University of Waterloo, Advanced GIS Methods, (GEOG/PLAN 355), Teaching Assistant, Spring.

Workshops – participated in ~13 Teaching workshops, additional information is available upon request.

ACADEMIC SERVICE**Faculty Level**

2015	Department Advisory Committee for Appointments, Committee Member, ERS
2015	Alumni Achievement and Young Alumni Award Selection Committee, ENV
2012-2014	Faculty of Environment Representative on Science Faculty Council, UW
2012-2014	Department of Geography and Environmental Management Representative on Faculty Council, UW

Department Level

2016	Department Advisory Committee for Appointments, Committee Member, GEM
2013	Department Advisory Committee for Appointments, Committee Member, GEOG
2013	Geomatics curriculum review and development
2012-2013	Co-op Officer - Department of Geography and Environmental Management

External Service

2016	Program Committee Member for CAMUSS 2016, Second International Symposium on Cellular Automata Modeling for Urban and Spatial Systems. http://www.camuss2016.ulaval.ca/
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- 2015-2016 Core Advisory Team Member, Natural Systems Vulnerability to Climate Change in the Region of Peel, Tu, C., Milner, G., Lawrie, D., Shrestha, N., Hazen, S. (2015). Toronto, Ontario: Toronto and Region Conservation Authority and Ontario Climate Consortium Secretariat.
- 2012 Organizer of “Applications of ABM to Study Land-Use Change” Special Session, Canadian Association of Geographers (CAG) conference Waterloo, ON, Canada, May 28-June 2.
- 2009 Invited member of the Programme Committee for the 10th International Conference on GeoComputation, University of New South Wales, Australia, Nov. 31 – Dec. 2nd.
- 2008 Assisted organization of the joint German – U.S. conference “Tough Choices – Land Use under a Changing Climate”, Berlin, Germany, Oct. 2 – 4.
- 2005 Co-organiser of the Method2Method Workshop on Multi-Agent Modeling and Collaborative Planning, Bonn, Germany, Oct. 8 – 9.
- 2005 Coordinator of Complex Systems Advanced Academic Workshop (CSAAW) 2005-2006, Center for the Study of Complex Systems, University of Michigan.
- 2004 Elected Student Government Ph.D. Representative 2004-2005, School of Natural Resources and Environment, University of Michigan

PROFESSIONAL ACTIVITIES

Journal Reviews (39)

Applied Spatial Analysis and Policy	(1) 2009
Biodiversity and Conservation	(1) 2011
Computers, Environment and Urban Systems	(2) 2015, 2008
Conservation Biology	(1) 2008
Current Opinion in Environmental Sustainability	(1) 2015
Ecological Economics	(1) 2010
Ecological Modelling	(1) 2011
Ecology and Society	(2) 2015, 2007
Environment and Planning B	(2) 2012, 2010
Environmental Modelling and Software	(3) 2014, 2014, 2008, 2016
Environmental Research Letters	(2) 2015, 2015
Global Environmental Change	(1) 2014
International Congress on Environmental Modelling and Software	(2) 2010, 2010,
International Journal of Geographical Information Science	(4) 2014, 2011, 2009, 2006
International Journal of Environmental Research and Public Health	(1) 2010
Landscape Ecology	(3) 2009, 2008, 2016
Landscape and Urban Planning	(1) 2014, 2015
Journal of Land Use Science	(5) 2014, 2012, 2010, 2009, 2008
Population and Environment	(1) 2009
Progress in Human Geography	(1) 2010

Sustainability (1) 2013

Grant Reviews (6)

Trans-Atlantic Platform (T-AP) for the Social Sciences and the Humanities – Digging Into Data Challenge (1) 2016
 National Science and Engineering Research Council – Discovery Grant (1) 2016
 European Research Council Consolidator Grant (1) 2015
 Social Sciences and Humanities Research Council (1) 2013
 European Research Council FP7 ‘Ideas’ Programme (1) 2013
 Fondation pour la Recherche sur la Biodiversité (1) 2011

Book Proposal Reviews (1)

SAGE Publications (1) 2012

MEMBERSHIPS

American Assoc. for the Advancement of Science	(AAAS)	2012-2007
American Association of Geographers	(AAG)	2015, 2014, 2012, 2008-2003
American Geophysical Union	(AGU)	2013, 2012
Canadian Association of Geographers	(CAG)	2014, 2013, 2009, 2007, 2003
Canadian Institute of Planners	(CIP)	2009
International Association of Landscape Ecology	(IALE)	2012
Ontario Professional Planners Institute	(OPPI)	2009
Unmanned Systems Canada	(USC)	2015, 2016

WORK EXPERIENCE

2000 GIS and Remote Sensing Analyst. Blue Mountains City Council, Environmental Management Branch, Katoomba, NSW, Australia.
 1999 Multidisciplinary Hydrographer, Department of Fisheries and Oceans, Canadian Hydrographic Division, Navigational Info., Burlington, ON.
 1998 Junior Research Officer. Finance Canada, Tax Policy Branch, Ottawa, ON.