MINISTERIO DE CIENCIA E INNOVACIÓN

**CURRICULUM VITAE (maximum 4 pages)**

AGENCIA ESTATAL DE INVESTIGACIÓN

| **Section A. PERSONAL DATA** | **CV date** | 14th January 2021 |
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|---|---|---|---|
| Name and Surname | Richard Hewitt | | |
| NIE | Y0477391V | Age | 45 |
| Researcher's identification number | Researcher ID | AAT-9902-2020 | |
| | Scopus Author ID | 36767457500 | |
| | ORCID | 0000-0003-4169-8647 | |

**A.1. Current professional situation**

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|---|---|---|---|---|
| Institution | Universidad Complutense de Madrid | | | |
| Dpt. / Centre | Geography / Geography and History | | | |
| Address | Calle Felipe Preciado 5, 28293, Zarzalejo | | | |
| Phone | (0034) 673603561 | Email | rhewitt@ucm.es | |
| Professional category | Researcher | | Start date | 2020 |
| Keywords | Renewable resources; Climate change; Geographical information system; Land use; Urban transport; Sustainable development | | | |

**A.2. Academic education (Degrees, institutions, dates)**

| Bachelor/Master/PhD | University | Year |
|---|---|---|
| Programa Oficial de Doctorado en Tecnologías de la Información Geográfica | Universidad de Alcalá | 2014 |
| Undergraduate course in Mathematics MST121 Using mathematics | Open University, UK | 2008 |
| Undergraduate course in Mathematics MST120 Open mathematics | Open University, UK | 2006 |
| Master of Letters | University of Newcastle upon Tyne | 2006 |
| Bachelor of Science | University of London | 1997 |

**A.3. General quality indicators of scientific production**

**Quality of awards**

Master's degree awarded with "distinction" (2006); PhD awarded "cum laude" (2014); Marie Curie Individual Fellowship proposal awarded 94.40% (Threshold: 70/100.00) (2020)

**Scientific leadership**

Member of the management team for EU H2020 project SIMRA (2016-20); Organising chair or co-chair of 3 conference sessions (2019-21); guest editor of special issue of "Global Transitions" (2019-20); Editorial board member of Socio-ecological systems modelling (SESMO) and Journal of Environmental Accounting and Management (JEAM)

**Current scientific productiveness**

In 2020 I published 8 peer-reviewed articles, 5 of which as first author and 4 of which are in upper quartile (Q1) journals according to Journal Citation Reports (JCR).

**Scientific publication activity**

Scopus: https://www.scopus.com/authid/detail.uri?authorId=36767457500

Google Scholar: https://scholar.google.com/citations?hl=en&user=VxHzbv4AAAAJ&view_op=list_works&sortby=pubdate

Researchgate: https://www.researchgate.net/profile/Richard_Hewitt3

My publication h-index is, according to various sources: 13 (google scholar), 8 (Web of Science), 9 (Scopus). I have a researchgate score of 27.96 with 70 research items and 12 projects. 19 peer reviewed journal publications, 10 of which are in upper quartile-ranked (Q1) journals according to Journal Citation reports (JCR), including 2 in elite journals (Proceedings of the National Academy of Sciences of the USA, and Nature Geoscience). Lead author or co-author of 3 books, with a 4th book in preparation under contract. 2 of the 4 books for prestige publishers Elsevier and CRC Press. Author or co-author of 10 book chapters, 11 full length conference communications and 27 oral conference presentations. For reasons of brevity only Q1 journal publications and books are shown in Section C.1. (below).

**Scientific software development**

I am principal developer of scientific software platforms SIMLANDER and APoLUS. https://simlander.wordpress.com/apolus/

**Teaching and supervision**

I teach two subjects at master's degree level (GIS for mathematics and statistics; advanced GIS- raster) at Madrid Complutense University, and give specialist courses on APoLUS worldwide (recently in Mexico and Australia); currently assisting with supervision of two PhD students.

**Section B. SUMMARY OF THE CURRICULUM**

I am an experienced interdisciplinary researcher in applied environmental science. My principal focus is on integrated land use modelling, geographical information systems and environmental policy, particularly around climate, land use and energy. My recent (2020) Marie Curie Individual Research Fellowship (awarded 94.40% against a threshold: of 70/100.00) facilitates my progression towards a scientific leadership role, testified by my recent publications in elite and upper-quartile international journals (Proceedings of the National Academy of Sciences, Climate Policy, Computers Environment and Urban Systems) targeted at state-of-the art approaches to globally relevant questions. Increasingly, my work looks at limitations and shortcomings of environmental policies worldwide, and strives to offer new perspectives, like implementation scenarios (Hewitt et al 2020, publication #1, section C1), social tipping elements (Otto et al 2020, publication #2, section C1), and social innovation for environmental transitions (Vercher et al 2020, publication #4, section C1). My work is strongly integrative, combining social science and participatory elements with robust mathematical and computational methods. Nearly all of my work is collaborative, spanning institutions across Europe, Latin America, Canada and Australia. I take teaching and mentoring seriously, and have over 100 hours of teaching experience at master's degree and specialist professional level, as well as extensive experience supervising master's and PhD students in the UK, Spain and Australia. I have served as external examiner or thesis committee member on several occasions. In addition to my current research on participatory scenario modelling of transport, energy and land use in European cities, and my teaching responsibilities at the UCM, I frequently serve as scientific reviewer for international impact factor journals, e.g. Environmental Modelling & Software, Landscape & Urban Planning and Renewable & Sustainable Energy Reviews, among others. I am a member of the editorial board of 2 international journals, and am working on a book (under contract to CRC press) entitled "Modelling land use and land cover change in R", together with JF Mas of the National Autonomous University of Mexico (UNAM).

Over the next five years, I am looking to develop and consolidate a scientific leadership role with the goal of leading my own research group focussing on spatio-temporal modelling of scenarios of environmental change, based around the SIMLANDER and APoLUS spatial modelling frameworks that I have been developing since 2013. This would ideally be enabled by winning research funding to attract new collaborators and graduate research students. My immediate future research aims relate to moving beyond the state-of-the art in spatial models of land use change, e.g.; (i) simulating transformative innovation; (ii) integration of air quality and greenhouse gas emissions, (iii) improving the dynamic representation of agent interaction, among other aspects. These short-to-medium-term goals relate to my career-wide focus on improving the policy-relevance and real-world applicability of spatial modelling efforts to support key global environmental policy goals reducing global human impact on the environment in a socially just and sustainable way.

**Part C. RELEVANT MERITS**

**C.1. Publications (including books)**[1]

**1** **Scientific paper**. Hewitt, Richard J; Cremades, Roger; Kovalevsky, Dmitry V; Hasselmann, Klaus. 2020. Beyond shared socioeconomic pathways (SSPs) and representative concentration pathways (RCPs): climate policy implementation scenarios for Europe, the US and China. Climate Policy. Taylor & Francis. pp.1-21. [JCR Q1, JCR Impact Factor 4.011, citations: Web of Science 0, Google Scholar 0]

**2** **Scientific paper**. Otto, Ilona M; Donges, Jonathan F; Cremades, Roger; et al; others. 2020. Social tipping dynamics for stabilizing Earth's climate by 2050. Proceedings of the National Academy of Sciences. National Academy of Sciences. 117-5, pp.2354-2365. [JCR Q1, JCR Impact Factor 9.412, citations: WOS 24, Google Scholar 71]

**3** **Scientific paper**. Roodposhti, Majid Shadman; Hewitt, Richard J; Bryan, Brett A. 2020. Towards automatic calibration of neighbourhood influence in cellular automata land-use models. Computers, Environment and Urban Systems. Pergamon. 79, pp.101416-101416. [JCR Q1, JCR Impact Factor 4.655, citations: WOS 7, Google Scholar 7]

**4** **Scientific paper**. Vercher, Néstor; Barlagne, Carla; Hewitt, Richard; Nijnik, Maria; Esparcia, Javier. 2020. Whose Narrative is it Anyway? Narratives of Social Innovation in Rural Areas--A Comparative Analysis of Community-Led Initiatives in Scotland and Spain. Sociologia Ruralis. [JCR Q1, JCR Impact Factor 2.54, citations: Google Scholar 1]

**5** **Scientific paper**. Hewitt, Richard J; Winder, Nick P; Hernández Jiménez, Verónica; Martínez Alonso, Patricia; Román Bermejo, Lara. 2017. Innovation, pathways and barriers in Spain and beyond: An integrative research approach to the clean energy transition in Europe. Energy Research & Social Science. Elsevier. 34, pp.260-271. [JCR Q1, JCR Impact Factor 4.771, citations: WOS 7, Google Scholar 13]

**6** **Scientific paper**. Hewitt, Richard; Díaz-Pacheco, Jaime. 2017. Stable models for metastable systems? Lessons from sensitivity analysis of a Cellular Automata urban land use model. Computers, Environment and Urban Systems. Elsevier. 62, pp.113-124. [JCR Q1, JCR Impact Factor 4.655, citations: WOS 12, Google Scholar 18]

**7** **Scientific paper**. Alonso, P.M.; Hewitt, R.; Pacheco, J.D.; Bermejo, L.R.; Jiménez, V.H.; Guillén, J.V.; Bressers, H.; de Boer, C. 2016. Losing the roadmap: Renewable energy paralysis in Spain and its implications for the EU low carbon economy. Renewable energy. Elsevier. 89, pp.680-694. [JCR Q1, JCR Impact Factor 6.274, WOS 26, Google Scholar 52]

**8** **Scientific paper**. Hasselmann, K; Cremades, R; Filatova, T; Hewitt, R; Jaeger, C; Kovalevsky, D; Voinov, A; Winder, N. 2015. Free-riders to forerunners Nature Geoscience. Nature Publishing Group. 1752-0908, pp.doi-10. [JCR Q1, JCR Impact Factor 13.566, WOS 4, Google Scholar 14]

**9** **Scientific paper**. Hewitt, Richard; Van Delden, Hedwig; Escobar, Francisco. 2014. Participatory land use modelling, pathways to an integrated approach. Environmental Modelling & Software. Elsevier. 52, pp.149-165. [JCR Q1, JCR Impact Factor 4.807, WOS 54, Google Scholar 87].

**10** **Scientific paper**. Hewitt, Richard; Escobar, Francisco. 2011. The territorial dynamics of fast-growing regions: Unsustainable land use change and future policy challenges in Madrid, Spain Applied Geography. Pergamon. 31-2, pp.650-667. [JCR Q1, JCR Impact Factor 3.508, WOS 55, Google Scholar 84]

**11** **Scientific book or monograph**. Hewitt, Richard; Hernández-Jiménez, Verónica; Zazo-Moratalla, Ana; Ocón-Martín, Blanca; Román-Bermejo, Lara; Encinas-Escribano, María. 2017. Participatory Modelling for Resilient Futures: Action for Managing Our Environment from the Bottom-Up Developments in Environmental Modelling. Elsevier. 30.

**12** **Scientific book or monograph**. Hewitt, R.; Brightman, J.; Mason, D.; Petts, D; Radford, S.; Vyner, B.; Waddington, C. 2011. An Archaeological Assessment of County Durham: The Aggregate Producing Areas. An Archaeological Assessment of County Durham: The Aggregate Producing Areas. Durham County Council. pp.367-367.

**13** **Popular science book**. Hernández Jiménez, V.; Encinas Escribano, M.A.; Hewitt, R.; Ocón Martín, B.; Román Bermejo, L.P.; Zazo Moratalla, A.2016. ¿Qué territorio queremos?

[1] Highest performing quartile shown according to Journal Citation Reports (JCR). Only JCR Q1 publications shown, and books.

Estrategias participativas para un futuro común. Observatorio para una Cultura del Territorio: ISBN: 978-84-617-4597-5.

**C.2. Participation in R&D and Innovation projects**

**1** Early human dispersal into Southeast Asia: identifying the key environmental drivers. Mike Morley. (Flinders University). 01/01/2018-31/12/2022. 497.015 €.
**2** Soil science & Archaeo-Geophysics Alliance: going beyond prospection (SAGA) Carmen Cuenca Garcia. (University of Trondheim). 25/10/2018-24/10/2022.
**3** Integrated modelling of transport scenarios from stakeholders for air quality and emissions (INTRANCES) European Union MSCIF. Richard Hewitt. (Universidad Complutense de Madrid). 01/07/2020-30/06/2022. 172.932 €.
**4** Herramientas para la enseñanza de la Geomática con programas de código abierto [Tools for teaching geomatics with open source programs] Jean-Francois Mas. (Universidad Nacional Autonoma de Mexico). 01/01/2019-01/01/2022.
**5** Sostenibilidad Territorial del modelo energético bajo en carbono. Territorios y energías renovables (TERRYER) Ministerio de economía y competitividad. María Jose Prados Velasco. (Universidad de Sevilla). 01/01/2018-31/12/2021. 70.000 €.
**6** Social Innovation in Marginal Rural Areas (SIMRA) European Union (H2020). Maria Nijnik. (James Hutton Institute). 01/04/2016-31/03/2020. 5.935.828 €.
**7** Renewable Energy and Landscape Quality (RELY) European Union. Michael Roth. (Nürtingen-Geislingen University). 01/01/2016-31/12/2019.
**8** Simulaciones geomáticas para modelizar dinámicas ambientales II. Horizonte 2020 [Geomatic simulations to model environmental dynamics – time horizon 2020] (SIGEOMOD II) Ministerio de economía y competitividad. María Teresa Camacho Olmedo. (Universidad de Granada). 01/01/2014-30/06/2018. 72.000 €.
**9** Knowledge-based climate mitigation systems for the Low-Carbon Economy (COMPLEX) European Union (FP7). Nick Winder. (University of Newcastle upon Tyne). 01/10/2012-30/09/2016. 5.428.606 €.
**10** Modelización de las dinámicas de usos del suelo en la red de parques nacionales españoles y su entorno [Modelling land use dynamics in the Spanish network of national parks and their surroundings] (DUSPANAC) Organismo Autónomo de Parques Nacionales. Francisco Escobar Martinez. (Universidad de Alcalá). 01/01/2011-31/12/2013. 132.250 €.
**11** Innovative Systems and the Boundary Problem (ISBP) European Union (FP6). Nick Winder. (University of Newcastle upon Tyne). 01/11/2006-31/10/2009. 2.401.805 €.
**12** Assessment of archaeology in aggregate producing areas of county Durham Clive Waddington. (Archaeological Research Services Ltd). 01/04/2006-31/03/2008. 277.124 €.

**C.3. Participation in R&D and Innovation contracts**

**1** Scottish Government Strategic Research Programme on Environment: Theme 1: Natural Assets: RD1.2.4 Effectiveness of water management Marc Stutter. 01/10/2016-20/12/2019.
**2** Scottish Government Strategic Research Programme on Environment: Theme 1: Natural Assets: RD1.4.2: Identifying and understanding multiple benefits and trade-offs - How can we identify resilient interventions for multiple benefits? Alessandro Gimona. 01/10/2016-20/12/2019.
**3** Scottish Government Strategic Research Programme on Environment: Theme 1: Natural Assets: RD1.4.3: Practical interventions to realise multiple benefits and manage trade-offs - How can we support delivery of multiple benefits in practice? Justin Irvine. 01/10/2016-20/12/2019.