

ELENA GARCÍA BARRIOCANAL**CATEDRÁTICA DE UNIVERSIDAD****RESUMEN DE LOS PRINCIPALES MÉRITOS**

Dpto: Ciencias de la Computación.

Área de Conocimiento: Lenguajes y Sistemas Informáticos.

Tramos de investigación reconocidos: 3 investigación (2000-2005, 2006-2011, 2012-2017) + 1 transferencia (2005-2010)**Tramos de docencia reconocidos:** 3 (feb2000-feb2005, feb2005-feb2010, feb2010-feb2015)**1. MÉRITOS DE INVESTIGACIÓN****Listado de artículos publicados en revistas indexadas en Journal of Citation Report**

PUBLICACION	JCR EDITION	FACTOR IMPACTO	CUARTO
Sicilia, M.A., García-Barriocanal, E., Díaz, P., Aedo, I. and Díaz, P. (2003) A Literature Based Approach to the Annotation and Browsing of Domain-Specific Web Resources. <i>Information Research</i> 8(2)	ISI JCR Social Sciences Edition 2004	Information Science & Library Science. (0.841)	2
Sicilia, M.A. and García-Barriocanal, E. (2003). On the Concepts of Usability and Reusability of Learning Objects. <i>International Review of Research in Open and Distance Learning</i> , 4(2).	ISI JCR Social Science Edition 2011	Education & educational research (0.687)	2
Sicilia, M. A., García-Barriocanal, E. and Calvo, T. (2004) An Inquiry-Based Method for Choquet Integral-Based Aggregation of Interface Usability Parameters. <i>Kybernetika</i> , 39(5), 159-164	ISI JCR Science Edition 2004	Cybernetics (0.224)	3
Sicilia, M.A., Cuadrado, J.J., Crespo, J., García, E. (2005) Software Cost Estimation with Fuzzy Inputs: Fuzzy Modelling And Aggregation Of Cost Drivers. <i>Kybernetika</i> 41(2), 249-264	ISI JCR Science Edition 2005	Cybernetics (0.343)	3
García, E, Sicilia, M.A., Sánchez, S. (2005) Usability evaluation of ontology editors. <i>Knowledge Organization</i> 32(1),1-9.	ISI JCR Social Sciences Edition 2005	Information Science & Library Science. (0.533)	2
Sicilia, M. A., Lytras, M., Rodríguez, E. García, E. (2006) Integrating Descriptions of Knowledge Management Learning Activities into Large Ontological Structures: A case Study. <i>Data and Knowledge Engineering</i> 57(2), 111-121	ISI JCR Science Edition 2006	Information Science and Library Science (1,367)	2
Sánchez-Alonso, S. and García, E. (2006) Making use of upper ontologies to foster interoperability between SKOS concept schemes. <i>Online Information Review</i> , 30, (3), 263-277.	ISI JCR Social Sciences Edition 2006	Information Science and Library Science (0,750)	2
Sicilia, M.A., García, E. González-Sotos, L. (2006). Introducing fuzziness in object models and database interfaces through aspects. <i>International Journal of Intelligent Systems</i> 21(12), 1199 – 1216	ISI JCR Science Edition 2006	Artificial Intelligence (0.429)	3
Sicilia, M.A. and García-Barriocanal, E. (2006). Extending Object Database Interfaces with Fuzziness through Aspect-Oriented Design. <i>ACM SIGMOD Record</i> 35(2), 4-9.	ISI JCR Science Edition 2006	Software Engineering (1.455)	1
García, E., Sicilia, M.A. (2007) Representing Evidence about Interpersonal Relationships of Public People in the Semantic Web. <i>Aslib Proceedings</i> 59(6), 550564	ISI JCR Science Edition 2007	Information Systems (0.413)	4

García, E., Sicilia, M.A., Lytras, M. (2007) Pedagogical classification frameworks for learning objects: A case study. <i>Computers in Human Behaviour</i> 23(6), 2641-2655	ISI JCR Social Science 2007	Psychology: Multidisciplinary (1.344)	1
Sicilia, M.A., García, E., Sanchez, S. (2008) Empirical assessment of a collaborative filtering algorithm based on OWA operators. <i>International Journal on Intelligent Systems</i> 23(12), pp.1251-1263	ISI JCR Science Edition 2008	Artificial Intelligence (0.860)	3
Aroba, J., Cuadrado, JJ., Sicilia, M.A., Ramos, I., García Barriocanal, E. (2008) Segmented software cost estimation models based on fuzzy clustering. <i>The journal of systems and software</i> 81(11), pp. 1944-1950	ISI JCR Science Edition 2008	Software Engineering (1.241)	2
Sicilia, J.J., Sicilia, M.A., Sánchez-Alonso, S., García-Barriocanal, E. and Pontikaki, M. (2009) Knowledge Representation Issues in Ontology-based Clinical Knowledge Management Systems. <i>International Journal of Technology Management</i> 47(1-3), 191-206	ISI JCR Science Edition 2008	Engineering: Multidisciplinary (0.526)	3
Sicilia, M.A. García-Barriocanal, E. Sánchez-Alonso, S. Rodríguez-García, D. (2009) Ontologies of engineering knowledge: general structure and the case of Software Engineering. <i>Knowledge Engineering Review</i> 24(3), 309-326.	ISI JCR Science Edition 2009	Artificial Intelligence (1,588)	2
Sicilia, M.A., Sánchez-Alonso, S., García-Barriocanal, E. and Zapata, M. (2011) Modeling instructional-design theories with ontologies: using methods to check, generate and search learning designs. <i>Computers and Human Behavior</i> , 27(4), pp. 1389-1398	ISI JCR Social Science 2010	Psychology: Multidisciplinary (1,865)	1
Sanchez-Alonso, S., Sicilia, M.A., Garcia-Barriocanal, E., Pages-Arevalo, C., Lezcano, L. (2010) Social models in open learning object repositories: A simulation approach for sustainable collections, <i>Simulation Modelling Practice and Theory</i> , 19(1), pp. 110-120.	ISI JCR Science Edition 2010	Software Engineering (0,736)	3
Rodríguez, D., García, E., Sánchez, S., Rodríguez-Solano, C. (2010) Defining software process model constraints with rules using OWL and SWRL. <i>International Journal of Software Engineering and Knowledge Engineering</i> 20(4), 533-548 http://dx.doi.org/10.1142/S0218194010004876	ISI JCR Science Edition 2010	Software Engineering (0,248)	4
Rodríguez, D., Sicilia, M.A., Sanchez-Alonso, S., Lezcano, L. and García-Barriocanal, E. (2011) Exploring affiliation network models as a collaborative filtering mechanism in e-learning. <i>International Journal of Interactive Learning Environments</i> , <i>Interactive Learning Environments</i> , 19(4), pp. 317-331	ISI JCR Social Science 2010	Education and Ed. Research (0,707)	2
García, E., Sanchez, S., Rodríguez, D., (2011) Devising instruction from empirical findings on student errors: a case in usability engineering education. <i>International Journal on Engineering Education</i> 27(1), pp. 1-7	JCR Science Edition 2008	Engineering Multidisciplinary (0,552)	3
Sicilia, M.A., Sánchez-Alonso, S. and García-Barriocanal, E. (2011). Comparing impact factors from two different citation databases: the case of computer science. <i>Journal of Informetrics</i> , 5(4), 698-704. https://doi.org/10.1016/j.joi.2011.01.007	ISI JCR Social Science Edition 2011	Information Science and Library Science (4.229)	1
Segura, A., Sánchez, S., García, E., Prieto, M. (2011) An empirical analysis of ontology-based query expansion for learning resource searches using MERLOT and the Gene ontology. <i>Knowledge-Based Systems</i> , 24(1), 119-133. http://dx.doi.org/10.1016/j.knosys.2010.07.012	ISI JCR Science Edition 2011	Artificial Intelligence (2,422)	1
Cechinel, C., García, E., Sánchez, S., (2011) Statistical Profiles of Highly-Rated Learning Objects. <i>Computers & Education</i> , 57(1), 1255-1269. http://dx.doi.org/10.1016/j.compedu.2011.01.012	ISI JCR Science Edition 2011	interdisciplinary applications (2,621)	1
García-Barriocanal, E., Sicilia, M.A., Sánchez-Alonso, S. and Lytras, M. (2011). Semantic annotation of video fragments as learning objects: a case study with YouTube videos and the Gene Ontology. <i>Interactive Learning Environments</i> 19(1), 22-44. https://doi.org/10.1080/10494820.2011.528879	ISI JCR Social Science 2011	Education and Ed. Research (1.163)	1
Pavlis, M., García, E. (2008) Development of personalized learning objects for training adult educators of special groups, <i>Journal of Knowledge Management</i> , 12(6), 89-101 https://doi.org/10.1108/13673270810913649	ISI JCR Social Science Edition 2011	Information Science and Library Science (1.248)	2
Valiente, M.C., García, E. and Sicilia, M.A. (2012) Applying ontology-based models for supporting integrated software development and IT service processes <i>IEEE Transactions on Systems, Man and Cybernetics Part C</i> , 42(1), 61-74. http://dx.doi.org/10.1109/TSMCC.2011.2132717	ISI JCR Science Edition 2012	Artificial intelligence (2.548)	1

Korfiatis, N., García, E, Sanchez, S. (2012) Evaluating content quality and helpfulness of online product reviews: The interplay of review helpfulness vs. review content. <i>Electronic Commerce Research and Applications</i> 11(3), 205-217. http://dx.doi.org/10.1016/j.elrap.2011.10.003	ISI JCR Science Edition 2012	Artificial intelligence (1,480)	2
Samaras, L, García, E., Sicilia, M.A (2012) Syndromic surveillance models using Web data: the case of scarlet fever in the UK. <i>Informatics for Health and Social Care</i> 37(2), 106-124. http://dx.doi.org/10.3109/17538157.2011.647934	ISI JCR Science Edition 2012	Health care and informatics (1,273)	4
Valiente, MC, Sicilia, M.A., García, E. (2012) Applying an Ontology Approach to IT Service Management for Business-IT Integration. <i>Knowledge-Based Systems</i> , 28, 76-87. http://dx.doi.org/10.1016/j.knosys.2011.12.003	ISI JCR Science Edition 2012	Artificial intelligence (4.104)	1
Sicilia, M.A., Rodríguez, D., Garcia, E., Harrison , R (2012) Empirical findings on the effect of team size and productivity in software development. <i>Journal of Systems and Software</i> , 85(3), 562-570. http://dx.doi.org/10.1016/j.jss.2011.09.009	ISI JCR Science Edition 20012	Software Engineering (1.135)	2
Sicilia, M.A., Rodríguez, D., García, E., Sánchez, S. (2012) Empirical Findings on Ontology Metrics. <i>Expert Systems with Applications</i> 39(8), 6706-6711. http://dx.doi.org/10.1016/j.eswa.2011.11.094	ISI JCR Science Edition 2012	Software Engineering (1,854)	2
García, E., Sicilia, M.A., Sánchez-Alonso, S. (2012) Computing with competencies: modelling organizational capacities. <i>Expert Systems with Applications</i> , 39(16), 12310-12318. http://dx.doi.org/10.1016/j.eswa.2012.02.194	ISI JCR Science Edition 2012	Software Engineering (1,854)	2
Lezcano, L., García, E. Sicilia, M.A. (2012) Bridging informal tagging and formal semantics via hybrid navigation. <i>Journal of Information Science</i> 38(2) 140–155. http://dx.doi.org/10.1177/0165551511435882	ISI JCR Science Edition 2012	Information Systems (1.238)	2
García, E., Sicilia, M.A., Sánchez, S. (2012) Social network-aware interfaces as facilitators of innovation <i>Journal of Computer Science and Technology</i> , 27(6), 12111221. http://dx.doi.org/10.1007/s11390-012-1297-x	ISI JCR Science Edition 2012	Software Engineering (0.477)	4
Joerg, B., Ruiz-Rube, I., Sicilia, M.A., Dvořák, J., Jeffery, K., Hoellrigl, T., Rasmussen, H.A., Engfer, A., Vestdam, T., García, E. (2012) Connecting closed world research information systems through the linked open data web. <i>International Journal of Software Engineering and Knowledge Engineering</i> , 22(3), 345-364. http://dx.doi.org/10.1142/S0218194012400074	ISI JCR Science Edition 2012	Artificial Intelligence (0,295)	4
Garre, M., García, E. ,Siakas, K., Sicilia, M.A.,Koinig, S., Messnarz, R., Clarke, A. (2012) Analyzing the Corporate Responsibility Web Pages of Consumer Electronics Companies: implications for process improvement <i>IET Software</i> 6(5), 451-460. http://dx.doi.org/10.1049/iet-sen.2011.0207	ISI JCR Science Edition 2012	Software Engineering (0.658)	3
García-Barriocanal, E., Sicilia, M.A., Sánchez-Alonso, S. (2013). Providing semantic metadata to on-line learning resources on sustainable agriculture and farming: combining values and technical knowledge. <i>Interactive Learning Environments</i> 21(3), 301-318. Publicado primero online nov 2011 https://doi.org/10.1080/10494820.2011.559170	ISI JCR Social Science 2011	Education and Ed. Reearch (1.163)	1
Cechinel, C., Sanchez, S., García, E., Sicilia, M.A. (2013) Evaluating Collaborative Filtering Recommendations inside Large Learning Object Repositories. <i>Information Processing & Management</i> 49(1), 34-50. http://dx.doi.org/10.1016/j.ipm.2012.07.004	ISI JCR Science Edition 2013	Information Systems (1.069)	3
Lezcano, L., Santos, L., García, E. (2013) Semantic integration of sensor data and disaster management systems - The Emergency Archetype approach. <i>International Journal of Distributed Sensor Networks</i> , 9(5), 1-11. http://dx.doi.org/10.1155/2013/424821	ISI JCR Science Edition 2013	Telecommunications (0.923)	3
Messnarz, R., Sicilia, M.A. Biro, M., García-Barriocanal, E., Garre-Rubio, M., Siakas, K., Clarke, A. (2013) Social responsibility aspects supporting the success of SPI. <i>Journal Of Software Maintenance And Evolution-Research And Practice</i> , 26(3), 284-294 http://dx.doi.org/10.1002/smrv.1586	ISI JCR Science Edition 2013	Software Engineering (1.320)	2
Rius, A., Conesa, J., García, E. Sicilia, M.A. (2013) Specifying Patterns of Educational Settings by means of Ontologies. <i>Journal of Universal Computer Science</i> , 19(3), 353-382. http://dx.doi.org/10.3217/jucs-019-03-0353	ISI JCR Science Edition 2013	Software Engineering (0.401)	4

Rius, A., Conesa, J., García, E. Sicilia, M.A (2014) Automating educational processes implementation by means of an ontological framework. <i>Computer Standards & Interfaces</i> , 36(2), 335-348. http://dx.doi.org/10.1016/j.csi.2013.08.003	ISI JCR Science Edition 2014	Software Engineering (0,879)	3
Valiente, M.A., Sicilia, M.A., Garcia-Barriocanal, E., Rajabi, E. (2015) Adopting the metadata approach to improve the search and analysis of educational resources for online learning. <i>Computers in Human Behavior</i> , 51, 1134-1141	ISI JCR Social Science Edition 2015	Social Science: Multidisciplinary (2.880)	1
Martin, D., Sanchez, S., Sicilia, M.A., García, E. (2015) Evaluating the degree of domain specificity of terms in large terminologies: the case of AGROVOC. <i>Online Information review</i> , 39(3), 326 – 345. http://dx.doi.org/10.1108/OIR-02-2015-0052	SI JCR Science Edition 2015	Information Systems (1.152)	3
Martin, D., Sanchez, S., Sicilia, M.A., García, E. (2015) Evaluating the practical applicability of thesaurus-based keyphrase extraction in the agricultural domain: A pilot exploratory study in the VOA3R Project. <i>Knowledge Organization</i> , 42(2), 76-89	ISI JCR Social Science Edition 2016	Social Science: Information Science & Library Science (0.522)	3
Nogales, A., Sicilia, M.A., García E., Sánchez, S. (2016) Linking from Schema.org microdata to the Web of Linked Data: an empirical assessment. <i>Computer Standards & Interfaces</i> , 45, 90-99. http://dx.doi.org/10.1016/j.csi.2015.12.003	ISI JCR Science Edition 2016	Software Engineering (1.366)	2
Nogales, A., Sicilia, M. A., García-Barriocanal, E. (2017) Measuring vocabulary use in the Linked Data Cloud. <i>Online Information Review</i> 41(2), 252-271. https://doi.org/10.1108/OIR-06-2015-0183	ISI JCR Science Edition 2016	Information Systems (1.534)	3
Rius, A., Conesa, J., García-Barriocanal, E., Sicilia, M.A. (2017) An ontology-driven framework for specifying, adapting and implementing educational settings. <i>Applied Ontology</i> , 12(1), 33-58. https://doi.org/10.3233/AO-170176	ISI JCR Science Edition 2016	Artificial Intelligence (1.296)	3
Martin, D., García, E., Sicilia, M-A, Stracke, C. M. (2017). Evaluating the concept specialization distance from an end-user perspective: The case of AGROVOC. <i>Online Information Review</i> , 41(6), 860-876. https://doi.org/10.1108/OIR-03-2016-0094	ISI JCR Science Edition 2016	Information Systems (0.918)	3
Samaras, L., García, E., Sicilia, M.A. (2017) Syndromic Surveillance Models Using Web Data: The Case of Influenza in Greece and Italy Using Google Trends. <i>Journal of Medical Internet Research (Public Health Surveillance)</i> 3(4). http://dx.doi.org/10.2196/publichealth.8015	ISI JCR Science Edition 2016	Medical Informatics (5.175)	1
Nogales, A. Sicilia,M.A., Garcia, E. (2018) On the graph structure of the Web of Linked Data. <i>International Journal on Semantic Web and Information Systems</i> , 14(2), 70-85. http://dx.doi.org/10.4018/IJSWIS.2018040104	ISI JCR Science Edition 2018	Artificial Intelligence (1.833)	3
Santos, L., Sicilia, M.A., García, E. (2019) Ontology-Based Modeling of Effect-Based Knowledge in Disaster Response. <i>International Journal on Semantic Web and Information Systems</i> , 15(1), 102-118 https://doi.org/10.4018/IJSWIS.2019010105 .	ISI JCR Science Edition 2019	Artificial Intelligence (1,742)	3
Mora, M., Sanchez, S. García, E. (2019) A systematic literature review on Wikidata. <i>Data Technologies and Applications</i> , 53(3), 250-268. https://doi.org/10.1108/DTA-12-2018-0110 .	ISI JCR Science Edition 2019	Information systems (0,704)	4
Mora, M., Sicilia, M.A., García, E., Sanchez, S.(2020) Evolution and prospects of the Comprehensive R Archive Network (CRAN) package ecosystem. <i>Journal of Software: Evolution and Process</i> . DOI: 10.1002/smrv.2270	ISI JCR Science Edition 2017	Software Engineering (1,178)	3
Samaras, L., García, E., Sicilia, M.A. (2020) Comparing Social media and Google to detect and predict severe epidemics. <i>Scientific Reports</i> , 10(4747). https://doi.org/10.1038/s41598-020-61686-9	ISI JCR Science Edition 2019	Multidisciplinary Science (3.998)	1
Mora, M. Sánchez, S., García, E., Sicilia, M.A. (2020) Authority-based flexible conversation tracking in Twitter: an unattended methodological approach. <i>Applied Sciences</i> 10(9), 3273. https://doi.org/10.3390/app10093273	ISI JCR Science Edition 2019	Multidisciplinary Science (2.474)	2

Mora, M., Sicilia, M.A., García, E., Sanchez, S.(2020) A complex network analysis of the Comprehensive R Archive Network (CRAN) package ecosystem. Journal of Systems and Software, 170, 110744. https://doi.org/10.1016/j.jss.2020.110744	ISI JCR Science Edition 2019	Software Engineering (2.450)	2
Samaras, L., Sicilia, MA. & García-Barriocanal, E. (2021) Predicting epidemics using search engine data: a comparative study on measles in the largest countries of Europe BMC Public Health 21, 100 (2021). https://doi.org/10.1186/s12889-020-10106-8	ISI JCR Science Edition 2019	Public, environmental & occupational health (2,521)	2
Puentes, J., Sanchez, S., Sicilia, MA, García, E. (2021) Predicting length of stay across hospital departments. IEEE Access, 9, 44671-44680. https://doi.org/10.1109/ACCESS.2021.3066562	ISI JCR Science Edition 2019	Information systems (3.745)	1

Listado de proyectos de financiación pública competitiva como investigadora principal

Nombre	Referencia	Cuantía subvención	Duración
MARIA: Medición y Análisis de Recursos para el acceso a la Información y el Aprendizaje	CAM+ UAH (CCG08-UAH/TIC4178)	17.400,00 €	2009
INTEGRA: Fusión y explotación de datos para el control de fronteras no vigiladas	CDTI (CENIT-2008: 1018)	540.033,08 €	2008-2011
eCultura: Desarrollo de una Plataforma Semántica para la Preservación y Explotación de Contenido Cultural	PROFIT Ministerio de Industria (TSI020501-2008-53)	129.887,00 €	2008-2010
SOCIRES: Development of Social Responsibility Training and Certification	EUROPEAN UNION (510098-2010-LLPSI-LEONARDOLMP)	49.285,00 €	2011-2013
VOA ³ Rr: Virtual Open Access Agriculture & Aquaculture Repository: Sharing Scientific and Scholarly Research related to Agriculture, Food, and Environment	European Union (CIP-ICTPSP.2009.2.4: 250525 - VOA3R)	400.000,00 €	01/06/2010 31/05/2013
Organic.Balkanet: Developing the skills of Organic agricultural for the Balkans	European Union (2009-1-RO1LEO05-03584/LLP-LdV-TOI-2009-RO008)	59.162,00 €	10/12/2009 09/12/2011
agINFRA: A data infrastructure to support agricultural scientific communities Promoting data sharing and development of trust in agricultural sciences	European Union (FP7-2011-2283770)	610.000,00 €	01/10/2011 30/09/2014
HEDECAMA: Modelo semántico y algoritmos de Data Mining aplicados al tratamiento del Cáncer de Mama en centros de Atención Especializada	Ministerio de Ciencia e Innovación (IPT2011-1126-900000)	98.135,00 €	01/10/2011 31/03/2014
SLROUTE (Spanish Language Route): Plataforma tecnológica de gestión, soporte y administración de contenidos digitales focalizados a videojuegos educativos tipos NMOG	Ministerio de Industria, Turismo y Comercio (TSI090302-2011-22)	90.062,00 €	01/10/2011 31/03/2014
SemAGROW: Data Intensive Techniques to Boost the Real-Time Performance of Global Agricultural Data Infrastructures	European Union (FP7-318497)	462.981,00 €	01/11/2012 01/11/2015

Listado de contratos como investigadora principal

Nombre	Empresa	Cuantía subvención	Duración
Diseño plataforma de intercambio de información de sistemas de Historia Clínica Electrónica	Alamo Consulting en convocatoria pública PIE de la CAM	56.000,00 €	2009-2010
eAvatar: Búsqueda semántica y análisis del lenguaje natural	Mnemon Consultores	15.000,00 €	26/7/2010 25/7/2011
Desarrollo de un entorno de interoperabilidad semántica para el mando y control militar	Instituto Tecnológico Militar de la Marañoso	32.220,00 €	01/12/2012 30/3/2014
Creación del modelo de expresión de necesidades del proyecto atas (adquisición de talento mediante objetos de aprendizaje semánticos)	XIMDEX	3.630,00 €	11/03/2015 10/12/2015
Mailtrack: intelligent mail delivery	Mailtrack	48.400,00 €	01/12/2014 30/11/2017
Búsqueda semántica y análisis del lenguaje natural	Inneria	17.700,00 €	28/07/2010 27/04/2011

2. MÉRITOS DE DOCENCIA

- Investigadora principal del Proyecto Erasmus+, KA3 Initiatives for policy innovation “PBL3.0: Integrating Learning Analytics and Semantics in Problem Based Learning”. 2016-2018 (79.584,0 €)
- Co-investigadora principal del Proyecto Erasmus+, Knowledge Alliances “SME ClusterGrowth”. 2021-2023 (84.500,0 €)
- Investigadora de los proyectos Erasmus+, KA2:
 - “Digital Skills Accelerator” (Miguel A. Sicilia, IP). 2017-2019
 - “Heal+: Master in Health Informatics” (Salvador Sánchez, IP). 2016-2018
 - “Data Set – Data skills for business” (Miguel A. Sicilia, IP) 2018-2020
 - “Digital Wellbeing educators” (Miguel A. Sicilia, IP) 2018-2020
 - “BEGIN - Blockchain Enabling Growth in New Enterprises” (Miguel A. Sicilia, IP) 2020-2022
 - “TrustAI - Trustworthy AI” (Marçal Mora, IP) 2020-2022
- Evaluación docente *Muy Favorable* en programa DOCENTIA (2011/12 – 2014/15) y (2015/16-2019-20)

3. MÉRITOS DE GESTIÓN ACADÉMICA

- Cargos unipersonales de gestión:
 - 11/2008 – 10/2016: Secretaria del departamento de Ciencias de la Computación
 - 11/2016 – 12/2017: Subdirectora del departamento de Ciencias de la Computación
 - 02/2015 - : Directora académica de la Oficina de Proyectos Europeos, Vicerrectorado de Investigación y Transferencia
- Coordinación académica:
 - 2017/18 – 2019/20: Directora del M.U. Analítica del Negocio y Grandes Volúmenes de Datos.

2014/15: Coordinadora del programa de doctorado Ingeniería de la Información y del Conocimiento.

- Coordinación en investigación:

2010 - : Journal on Information Science and Engineering (factor de impacto: 0.541)

2013 - : Journal of Universal Computer Science (factor de impacto: 0.701)

2007 - 2021 : Coordinación del grupo de investigación Information Engineering Research Group

Parte A. DATOS PERSONALES

Fecha del CVA | 07-12-2020

Nombre y apellidos	Rafael Bravo de la Parra		
DNI/NIE/pasaporte			Edad 63
Núm. identificación del investigador	Researcher ID K-6378-2014	Código Orcid 0000-0002-1812-5704	

A.1. Situación profesional actual

Organismo	Universidad de Alcalá		
Dpto./Centro	Dpto. de Física y Matemáticas		
Dirección	U.D.M. Matemáticas, E. Ciencias, Universidad de Alcalá, 28871 Alcalá de Henares		
Teléfono	918854903	correo electrónico rafael.bravo@uah.es	
Categoría profesional	Catedrático de Universidad	Fecha inicio 18-11-2009	
Espec. cód. UNESCO	2404, 1202		
Palabras clave	Dinámica de poblaciones, Sistemas dinámicos, Ecología matemática.		

A.2. Formación académica (título, institución, fecha)

Licenciatura/Grado/Doctorado	Universidad	Año
Ldo. en C. Matemáticas	Universidad Complutense de Madrid	1979
Doctor en C. Matemáticas	Univers. Nacional de Educación a Distancia	1987

A.3. Indicadores generales de calidad de la producción científica (véanse instrucciones)

Cuatro sexenios de investigación, el último obtenido en 2016.

Una tesis doctoral dirigida en los últimos 10 años, defendida en 2011.

Total de citas: 899. Promedio citas/año en el quinquenio 2016-20: 38.

Publicaciones en el primer cuartil: 16.

Índice h: 19. (WoS)

Parte B. RESUMEN LIBRE DEL CURRÍCULUM (máximo 3500 caracteres, incluyendo espacios en blanco)

Licenciado en C. Matemáticas, UCM 1979. Profesor en la E.T.S.I. Montes de la UPM 1979-81. En 1981 gané una Cátedra de Bachillerato que ejercí entre 1981 y 1991.

Tesis doctoral, Tópicos en Integración Bilineal Vectorial, desarrollada 1984-1987 y dirigida por Pedro Jiménez-Guerra, UNED. Tres artículos contenido partes de la tesis figuran como mis primeras publicaciones.

En 1988 obtuve una plaza de Profesor Asociado en el Departamento de Matemáticas de la Universidad de Alcalá y retomé la docencia universitaria compaginándola con la de bachillerato hasta octubre de 1991 cuando tomé posesión como Titular de Universidad. A partir de ahí cambié mi tema de investigación a la *Modelización Matemática en Biología*. En el congreso “3rd International Conference on Mathematical Population Dynamics”, Pau (Francia) 1992, contacté con el núcleo duro de mis colaboraciones científicas posteriores: Eva Sánchez (E.T.S.I Industriales, UPM), Ovide Arino (U. de Pau) y P. Auger (U. de Lyon).

Junto con Eva Sánchez fundamos un pequeño grupo de investigación que sigue activo y que ha adquirido cierto reconocimiento internacional. Nuestra investigación ha estado financiada ininterrumpidamente al más alto nivel nacional desde 1995 (véase C2). He sido investigador principal de cinco proyectos nacionales incluidos dos proyectos coordinados de los que he sido coordinador. La colaboración científica con los grupos franceses de P. Auger y O. Arino se financió a través de acciones integradas, coordinadas alternativamente por E.

Sánchez y por mí. He sido el responsable español de 4 proyectos de la A.E.C.I. (Programa de cooperación interuniversitaria entre España y Marruecos) que han generado una fructífera colaboración con el equipo del profesor Moulay Lhassan Hbid, director del laboratorio de sistemas dinámicos de la Facultad de Ciencias Semlalia de la U. Cadi Ayyad (Marrakech, Marruecos).

He dirigido tres tesis doctorales (véase C3). Dos de estos doctorandos siguen formando parte del equipo de investigación de los proyectos dirigidos: Luis Sanz (doctor en 1998 y Titular de Universidad desde 2002) y Marcos Marvá (doctor desde 2011 y P. Titular interino). Tengo más de 60 artículos publicados, en su mayor parte en revistas incluidas en el JCR. He colaborado como editor invitado en más de diez números especiales de revistas indexadas. (http://www3.uah.es/rafael_bravo/)

De fuerte impacto internacional fueron las dos conferencias internacionales de ecología matemática celebradas en Alcalá, de las que fui el organizador principal (chairman) (véase C5). Participé desde el año 2000 en la organización de varias escuelas de verano internacionales dentro del área de la Biología Teórica y Matemática. Varias auspiciadas por la European Society for Mathematical and Theoretical Biology (ESMTB) de la que soy miembro desde 1993, y para cuya Junta Directiva (Board) fui elegido entre 2003 y 2008. Miembro del Comité Editorial de dos revistas JCR: *Journal of Biological Dynamics* y *Mathematical Methods in the Applied Sciences*.

Entre 01-06-07 y 31-05-09 fui contratado como investigador del Instituto de Investigación para el Desarrollo (IRD, Francia) dentro de la unidad GEODES (geometría de espacios organizados, dinámicas ambientales y simulaciones). Actualmente sigo siendo miembro del Comité Científico de la unidad internacional UMMISCO I heredera de GEODES.

En noviembre de 2009 obtuve la plaza de Catedrático de Universidad de Matemática Aplicada en la Universidad de Alcalá que actualmente ocupo.

Parte C. MÉRITOS MÁS RELEVANTES (ordenados por tipología)

C.1. Publicaciones

- [1] L. Sanz, R. Bravo de la Parra, Stochastic matrix metapopulation models with fast migration: re-scaling survival to the fast scale, *Ecological Modelling*, **418**, 2020, 108829. doi.org/10.1016/j.ecolmodel.2019.108829
- [2] R. Bravo de la Parra, L. Sanz, A Discrete Model of Competing Species Sharing a Parasite, *Discrete & Continuous Dynamical Systems – B*, **25**(6):2121-2142, 2020. doi:10.3934/dcdsb.2019204.
- [3] L. Sanz, R. Bravo de la Parra, M. Marvá, E. Sánchez, Non-linear population discrete models with two time scales: re-scaling of part of the slow process, *Advances in Difference Equations*, 2019:401, 2019. doi.org/10.1186/s13662-019-2303-1.
- [4] M. Marvá, R. Bravo de la Parra, E. Venturino, Modelling the Role of Opportunistic Diseases in Co-infection, *Mathematical Modelling of Natural Phenomena*, **13**(3):28, 2018. doi.org/10.1051/mmnp/2018034.
- [5] R. Bravo de la Parra, M. Marvá, E. Sánchez, L. Sanz, Discrete Models of Disease and Competition, *Discrete Dynamics in Nature and Society*, **2017**: 5310837, 2017. doi.org/10.1155/2017/5310837.
- [6] R. Bravo de la Parra, M. Marvá, E. Sánchez, L. Sanz, A Discrete Predator-Prey Ecoepidemic Model, *Mathematical Modelling of Natural Phenomena*, **12**(2):116-132, 2017.
- [7] R. Bravo de la Parra, M. Marvá, F. Sansegundo, Fast Dispersal in Semelparous Populations, *Mathematical Modelling of Natural Phenomena*, **11**(4):121-135, 2016.

- [8] M. Marvá, E. Venturino, R. Bravo de la Parra, A Time Scales Approach to Coinfection by Opportunistic Diseases, *Journal of Applied Mathematics*, **2015**:275485, 2015.
- [9] M. Marvá, J.G. Alcázar, J.-C. Poggiale, R. Bravo de la Parra, A simple geometrical condition for the existence of periodic solutions of planar periodic systems. Applications to some biological models, *Journal of Mathematical Analysis and Applications*, **423**(2):1469-1479, 2015.
- [10] M. Marvá, R. Bravo de la Parra, Coexistence and superior competitor exclusion in the Leslie–Gower competition model with fast dispersal, *Ecological Modelling*, **306**:247-256, 2015.

C.2. Proyectos

- [1] MTM2014-56022-C2-1-P
Análisis y reducción de modelos de dinámica de poblaciones estructuradas y aplicaciones.
Ministerio de Ciencia e Innovación. Investigador Principal: Rafael Bravo de la Parra.
Duración desde 2015 a 2019. Cuantía de la subvención: 38.000 euros.
Tipo de participación: Investigador principal coordinador.
- [2] Proyecto MTM2011-24321
Escalas temporales y reducción en modelos de dinámica de poblaciones.
Ministerio de Ciencia e Innovación. Investigador Principal: Luis Sanz Lorenzo (UPM)
Duración desde 01-01-12 a 31-12-14. Cuantía de la subvención: 27.900 euros.
Tipo de participación: Investigador.
- [3] Proyecto MTM2011-25238
Modelización, análisis y simulación numérica de la dinámica de poblaciones estructuradas.
Ministerio de Ciencia e Innovación. Investigador principal: Miguel Ángel López Marcos (UVA)
Duración desde 01-01-12 a 31-12-14. Cuantía de la subvención: 41.400,00 euros.
Tipo de participación: Investigador.
- [4] Proyecto MTM2008-06462-C02-01
Poblaciones estructuradas y heterogeneidad espacial: métodos de reducción y aplicaciones.
Ministerio de Ciencia e Innovación. Investigador Principal: Rafael Bravo de la Parra (UAH)
Duración desde 01-01-2009 a 31-12-2011. Cuantía de la subvención: 55.500 euros.
Tipo de participación: Investigador principal coordinador.
- [5] Proyecto SUM2008-00004-C03-00
Multiscale analyses, modelling and prospective of carbon sinks dynamics in Spanish forest ecosystems under Global Change.
INIA, Mº de Ciencia e Innovación. Investigador principal: Miguel Á. de Zavala Gironés (UAH)
Duración desde 01-01-09 a 31-12-11. Cuantía de la subvención: 320.000 euros.
Tipo de participación: Investigador.
- [6] Proyecto MTM2005-00423
Escalas en modelos de dinámica de poblaciones.
Ministerio de Educación y Ciencia. Investigador Principal: Rafael Bravo de la Parra (UAH)
Duración desde 1-12-2005 a 31-12-2008. Cuantía de la subvención: 41.800 euros.
Tipo de participación: Investigador principal.

C.3. Tesis Doctorales dirigidas

Título: Métodos de agregación en sistemas discretos
Doctorando: Luis Sanz Lorenzo Fecha: 1998
Universidad Politécnica de Madrid, E.T.S.Ingenieros Industriales.

Título: Métodos de agregación en sistemas lineales discretos estocásticos y no autónomos
Doctorando: Angel Blasco Lorenzo Fecha: 2002
Universidad: de Alcalá, Facultad de Ciencias

Título: Approximate aggregation on nonlinear dynamical systems
Doctorando: Marcos Marvá Ruiz Fecha: 2011
Universidad: de Alcalá, Facultad de Ciencias

C.4 Participación en comités y representaciones internacionales

Título del Comité: Board of the European Society for Mathematical and Theoretical Biology
Entidad de la que depende: European Society for Mathematical and Theoretical Biology
(www.esmtb.org)
Tema: Mathematical and Theoretical Biology Fecha: De 01-01-2003 a 31-12-2008

Título del Comité: Editorial Board of the *Journal of Biological Dynamics*
Entidad de la que depende: Taylor & Francis Group (<http://www.tandfonline.com/action/journalInformation?show=editorialBoard&journalCode=tjbd20#.VBgQAqPCdZM>)
Tema: Mathematical Biology Fecha: Desde 2007

Título del Comité: Editorial Board of the journal *Mathematical Methods in the Applied Sciences*
Entidad de la que depende: Wiley. (<http://onlinelibrary.wiley.com/journal/10.1002/%28ISSN%291099-1476/homepage/EditorialBoard.html>)
Tema: Mathematical Biology Fecha: Desde 2014

C.5. Experiencia en organización de actividades de I+D

Título: Alcalá 1st International Conference on Mathematical Ecology
Actividad: Congreso (organizador principal) Ambito: Internacional Fecha: 1998
Título: Spatial Structures in Biology and Ecology: Models and Methods
Actividad: Escuela de verano (organizador) Ambito: Internacional Fecha: 2000
Título: Biology and Mathematics of Cells: Physiology, Kinetics and Evolution
Actividad: Escuela de verano (organizador) Ambito: Internacional Fecha: 2001
Título: Scales in Mathematical and Theoretical Ecology, From Individuals to Ecosystems
Actividad: Escuela de verano (organizador) Ambito: Internacional Fecha: 2003
Título: Alcalá 2nd International Conference on Mathematical Ecology
Actividad: Congreso (organizador principal) Ambito: Internacional Fecha: 2003
Título: MAT.ES 2005
Actividad: (organizador sesión de Biología Matemática) Ambito: Nacional Fecha: 2005
Título: Marrakesh International Conference and Workshop on Mathematical Biology
Actividad: Congreso (organizador) Ambito: Internacional Fecha: 2008
Título: I Reunión Conjunta Sociedad Matemática Mexicana-Real Sociedad Matemática Española
Actividad: Congreso (Coorganizador de la sesión de Biomatemáticas)
Ambito: Internacional Fecha: 2008
Título: IV Encuentro Conjunto Real Sociedad Matemática Española-Sociedad Matemática Mexicana.
Actividad: Congreso (Coorganizador de la sesión de Epidemiología y ecología matemáticas)
Ambito: Internacional Fecha: 2017



PERSONAL INFORMATION

CV date 4/07/2021

First and Family name	Maria Camino Teófila Balbuena Martinez		
		Age	64
Researcher numbers		Researcher ID	A-1062-2010
		Orcid code	0000-0003-4190-4287

1. Current position

Name of University/Institution	Universitat Politècnica de Catalunya (UPC)		
Department	Departament d'Enginyeria Civil i Ambiental		
Address and Country	Jordi Girona, 31, building C2, 08034 Barcelona		
Phone number	934016917	E-mail	m.camino.balbuena@upc.edu
Current position	Professor	From	01/03/2010
Espec. cód. UNESCO	1299, 1201		
Palabras clave	Graph Theory, Combinatorics, Complex Networks		

2. Education

PhD	University	Year
Bachelor of Science Mathematics	Universitat de Barcelona	1989
Doctorate in Mathematics	Universitat Politècnica de Catalunya	1995

3. JCR articles, h Index, thesis supervised...

4 "sexenios de investigación" (2010-2015, last).

6 supervised PhD Thesis, 2 Cosupervised Phd Thesis of Foreign Students.

116 Papers in JCR indexed journals.

685 total citations (Thomson-Reuters).

12 first quartile Q1, all of these publications are in the first decile D1 (JCR 2017), 45 second quartile Q2 (JCR 2017).

1276 total citations, -303 citations last 5 years- (Google Scholar).

h index: 19 (Google Scholar), 13 (Thomson-Reuters).

CV SUMMARY (max. 3500 characters, including spaces)

- **ABSTRACT OF CURRICULUM**
- 117 Papers in JCR indexed journals, 56 of them since 2010 inclusive.
- 139 Papers in MathScinet, then 22 papers in JCR non-indexed journals.
- 7 Head of Research Project I+D+i.
- 7 Participant of Research Project.
- 6 Participant of international projects (Australia and Mexico).
- 2 Contracts.
- 6 Supervisions of Ph.D. Thesis.
- 2 Co-supervisor of Foreign Students.
- 24 Plenary speaker or Invited Conferences.
- 154 Oral presentations in Conferences.

In 1989 she joined the Universitat Politècnica de Catalunya and in 1995 she received the phd degree from the same university. Since then she has been working with the Research Group on Combinatorics, Graph Theory and Applications (COMBGRAF). Her research is focused on Fault-Tolerance of networks and construction of extremal graphs with prescribed parameters. Most of her research is concerned to the study of conditional connectivity and particularly on the restricted edge connectivity of graphs and digraphs.

One remarkable contribution that she has made is the best known breakthrough in the solution of the conjecture claiming that cages are maximally connected by proving for odd girth that the connectivity is at least the degree divided by two. The study of cages produced the need to obtain these objects more easily. She has given a direct way for obtaining the



adjacency matrix of any projective plane of order a prime power, which is equivalent to obtain cages of girth 6. Moreover, she and her collaborators have given a simple formula for obtaining generalized quadrangles or equivalently cages of girth 8. This knowledge has allowed to solve other related problems as the following:

- To construct the smallest known graphs of girth 5.
- To prove a conjecture about the construction of regular graphs with a given girth-pair having the small number of vertices.
- To find a family of graphs free of short cycles having maximum number of edges.
- To characterize bipartite graphs of girth 6 having a $(1, \leq l)$ –Code and a good contribution in the study of graphs of girth 5 having an identifying code.

It deserves also to highlight that she and her collaborators have done a very good advance in the conjecture claiming that any tree is graceful by proving that a infinite family of trees is graceful.

Publications (selected)

1. C. Balbuena, C Dalfó, B. Martínez-Barona. Identifying codes in line digraphs. *Appl. Math. Comput.* 383 (2020) 125357:1 ~ 125357:10. <<https://doi.org/10.1016/j.amc.2020.125357>> (JCR 2017: 21/252 Math., Appl. **Q1**)
2. C. Balbuena, C. Dalfo, B. Martínez, Characterizing identifying codes from the spectrum of a graph or digraph. *Linear algebra and its applications.*: 570. (2019) 138 ~ 147. <<https://doi.org/10.1016/j.laa.2019.02.010>> (JCR 2017: Math., **Q1**)
3. C. Balbuena, F. Marcote, The p-restricted edge-connectivity of Kneser graphs. *Appl. Math. Comput.* 343 (2019) 258 ~ 267. <<https://doi.org/10.1016/j.amc.2018.09.072>> (JCR 2017: 21/252 Math., Appl. **Q1**)
4. C. Balbuena, D. González-Moreno, M. Olsen, Bounds on the k-restricted arc connectivity of some bipartite tournaments, *Appl. Math. Comput.* 331 (2018), 54–60. (JCR 2017: 21/252 Math., Appl. **Q1**)
5. C. Balbuena, D. González, M. Olsen, Vertex-disjoint cycles in bipartite tournaments. *Discrete mathematics.* 54 (2016) 69 ~ 72. <<https://doi.org/10.1016/j.disc.2017.10.023>> (JCR 2017: 139/309 Math. **Q2**)
6. C. Balbuena, F. Foucaud, A. Hansberg, Locating-dominating sets and identifying codes in graphs of girth at least 5, *Electron. J. Combin.* 22 (2015), no. 2, Paper 2.15, 22 pp. (JCR 2017: 130/309 Math. **Q2**)
7. C. Balbuena, J. Salas, On the order of graphs with a given girth pair, *Discrete Math.* 321 (2014), 68–75. (JCR 2017: 139/309 Math. **Q2**)
8. C. Balbuena, J. Salas, New results on connectivity of cages, *Appl. Math. Lett.* 25(11) (2012), 1676–1680. (JCR 2017: 14/252 Math., Appl. **Q1**)
9. C. Balbuena, X. Marcote, Monotonicity of the order of $(D;g)$ -cages. *Appl. Math. Lett.* 24 (2011), no. 11, 1933–1937. (JCR 2017: 14/252 Math., Appl. **Q1**)
10. C. Balbuena, P. García-Vázquez, Edge fault tolerance analysis of super k-restricted connected networks, *Appl. Math. Comput.* 216 (2010), 506–513. (JCR 2017: 21/252 Math., Appl. **Q1**).

Last Projects

- 1.- Mathematical study of cascading faults in complex systems through invariants and centralised in graphs. Applications to real networks. Scientific coordinator: Balbuena, C.; Comellas, F.. 01/01/2019 - 31/12/2021. Duration: 03 year/s . Amount: €32,428.00. Ambit:



State. Entity where it develops: MATHEMATICS.Financial entity: STATE AGENCY OF INVESTIGATION.

2- Optimization Techniques in Graph Theory, Groups, and Combinatorics. Applications to Networks, Algorithms, and Communication Protocols ("OTGCRC"), Ministry of Economy and Competitiveness (Spain), MTM2014-60127-P. Main Researchers: Miquel Àngel Fiol, Camino Balbuena, From 1 January 2015 to 31 December 2017. Grant amount: 184.800 euros.

3.- Control of invariants in graphs under structural properties ("CIGRAPRES"). Ministry of Science and Innovation (Spain), MTM2011-28800-C02-02, From 2012-2015, Main Researcher: Camino Balbuena, Grant amount: 113.400 euros.

4-- Measures of connectedness and other structural properties in graphs and digraphs with no short cycles, Ministry of Education and Science (Spain), MTM2008-06620-C03-02, From 2009 to 2011, Main Researcher: Camino Balbuena, Grant amount: 89.170 euros.

5-- Properties of discrete networks and their applications ("PROXARDIS"). 2009 SGR 1298. Generalitat de Catalunya (Spain). Main researcher: Camino Balbuena Martínez (UPC). Dates: from 1 October 2009 to 30 September 2014. Grant amount: 44.720 €.

6-- New measures of connectedness and their valuation in some families of graphs and digraphs, Ministry of Education and Science (Spain), MTM2005-08990-C02-02, From 2005 to 2008, Main Researcher: Camino Balbuena, Grant amount: 66.640 euros.

7-- New measures of connectedness and their valuation in some families of graphs and digraphs, Ministry of Education and Science (Spain), MTM2005-08990-C02-02, from 31 December 2004 to 31 December 2005, Main Researcher: Camino Balbuena, Grant amount: 16.000 euros.

Contracts:

1 Contrat Postdoc Adriana Hansberg Pastor. Supported by Consolider I-Math Future, Sede en Universidad de Cantabria. Responsable Camino Balbuena. Universidad Politécnica de Catalunya. Period: 01/05/2010 - 30/04/2011. Total amount: 37.356,11 €.

2 Contract Postdoc Mucuy-kak del Carmen Guevara Aguirre. Supported by "Programa de Formación e Incorporación de Profesores de Carrera en Facultades y Escuelas para el Fortalecimiento de la Investigación" (PROFIP) de la Universidad Nacional Autónoma de Mexico. Responsable Camino Balbuena. Period: 01/04/2008 - 31/03/2010. Total amount: 30000 €.

Supervised Ph.D. Thesis

1-- Berenice Martínez Barona, (1,<=l)-identifying codes in digraphs and graphs. FME, Universitat Politècnica de Catalunya, 14/09/2020 (Cosupervised with C. Dalfó).

2-- Julián Salas, On the structure of graphs without short cycles, FME, Universitat Politècnica de Catalunya, 20/12/2012.

3-- Luis Pedro Montejano, Restricted connectivity of families of graphs and digraphs, FME, Universitat Politècnica de Catalunya, 15/09/2011.

4-- Diego González Moreno, Fault tolerances results for some families of graphs, FME, Universitat Politècnica de Catalunya, 19/12/2007 (Cosupervised with X. Marcote).

5--Xavier Marcote, Some contributions to the study of the connectedness of graphs and digraphs, MAII, Universitat Politècnica de Catalunya, 10/04/2003 (Cosupervised with J. Fàbrega).



6--Ignacio Pelayo, Some contributions from Graph Theory to the design and study of large and fault-tolerant interconnection networks, MAIII Universitat Politècnica de Catalunya, 13/04/2000 (Cosupervised with J. Gómez).

Cosupervisor of foreign dissertations

- 1-- **Jiamming Tang**, Variations of Classical Extremal Graph Theoretical Problems: Moore Bound and Connectivity, Electrical Engineering and Computer Science, The University of Newcastle, Callaghan NSW 2308, Australia, Main supervisors: M. Miller and Y. Lin, 01/10/2009.
- 2-- **Kim Marshall**, Extremal Problems and Connectivity, Electrical Engineering and Computer Science, The University of Newcastle, Callaghan NSW 2308, Australia, Main supervisors: M. Miller and J. Ryan, 01/09/2011.

7. Member of Committees:

1 "Comisiones para el acceso a los cuerpos docentes universitarios a que hacen referencia las disposiciones adicionales primera y segunda de la Ley Orgánica 4/2007." **Tipo de comisión:** Evaluación curricular. **Entidad de la que depende:** ANECA (Agencia Nacional para la Evaluación de la Calidad y Acreditación). Programa Academia. Desde: 05/10/2012, (BOE 240 del 5/10/2012) Fecha de fin: 31/12/2014.

2.Comité editorial de Revistas JCR: Revista: Networks Tipo de Participación: Editor Asociado de Networks Fecha de inicio: 01/04/2006 up to now.

8. Other merits: Diploma “**Top Cited Article 2005-2010**” given by journal Discrete Mathematics (included in JCR) on the paper “C. Balbuena, M. Cera, A. Diánez, P. García-Vázquez, X. Marcote, On the restricted connectivity and superconnectivity in graphs with given girth, Discrete Mathematics 307(6) (2007), 659-667.”

Part A. PERSONAL INFORMATION

CV date

Jun-20th-
2021

First and Family name	José Miguel Díaz Báñez	
Researcher codes	Open Researcher and Contributor ID (ORCID**)	0000-0002-4031-4309
	SCOPUS Author ID (*)	8847635500
	WoS Researcher ID (*)	L-1996-2014

(*) Optional

(**) Mandatory

A.1. Current position

Name of University/Institution	University of Seville (US)	
Department	Applied Mathematics II	
Address and Country	Avda de los Descubrimientos s/n 40192 Sevilla, Spain	
Phone number	+34954482157	Email: dbanez@us.es
Current position	Full profesor (Catedrático)	
Key words	Algorithms, AUVs, Geometric Optimization	

A.2. Education

	University	Year
Licensed	US	1989
PhD	US	1998

A.3. General indicators of quality of scientific production (see instructions)

(Acces to Google Scholar y Scopus. At the Web of Science do not appear all my publications)

- Nº six-year research terms granted: 4
- Nº supervised PhDs since 2010: 7 (5 in Spain-US and 2 co-supervised in Mexico-UNAM)
- Nº papers in JCR: 70 (48 since 2010)
- Nº book chapters: 11; Nº books: 2
- Nº papers in (Q1): 27 (14 since 2010)
- Cites: 1270; index h= 19, index i-10=38

Part B. CV SUMMARY (max. 3500 characters, including spaces)

Full professor of applied mathematics since 2017, my research production is based on the publication of 68 articles in journals indexed in the ISI-JCR database and more than 80 publications in books, book chapters and conferences. The development of my activity has been focused on an intense dedication to research, not only with respect to obtaining results that imply advances in knowledge, but also an attitude tending to take initiatives that have implied novelty, leadership, decision-making and management of an international group. It should be noted that the projects where I have been a PI (3 national, 2 regional and 1 European) do not come from previous projects of big groups and research tradition, that is, they have been started without 'heritage' in management.

In 2008, I founded our research group GALGO (US Research Group on Geometric Algorithms & Applications, <http://alojamientos.us.es/galgo/index.htm>), a multidisciplinary and international group focused to the design of efficient resolution of problems of a geometric nature coming from various application areas. I have worked in three areas that correspond to a basic line of knowledge and two applied lines that benefit from the first one: (GALGO) Geometric ALGOritms; (AR) Aerial Robotics and (COFLA) COmputational Analysis of FLAmenco music; the first being the fundamental area where I developed as a researcher and two more recent

applied areas where the group has publications in prestigious journals and conferences and is initiating technology transfer. We emphasize that the research lines were opened from our university and there are already researchers from other universities working with the group. Thus, we are participants in innovative and multidisciplinary research that allows us to open new lines of exploration and advances on the frontier of knowledge that foster international scientific leadership. We will briefly describe such actions in the two blocks that correspond to computational mathematics and aerial robotics.

GALGO: In 1994, I made contact with research in the area where I developed my thesis, defended in 1998: Facility Location and Computational Geometry. My doctoral thesis resulted in 4 articles in JCR journals and was a pioneer in the field. Since then, I have led the research work in the vast majority of my work (the order of the authors is alphabetical in many cases). I would also like to highlight the work carried out as a promoter of events in the area (Spanish Workshop on Geometric Optimization, Spanish Meeting on Computational Geometry, European Workshop on Computational Geometry, Ibero-American Workshop on Combinatorial and Computational Geometry, among others).

AR: Recently, we have been collaborating with robotics groups from the universities of Seville and Pablo de Olavide and we maintain active collaboration with researchers from the universities of Denver and Texas at Dallas in USA, Graz in Austria and UNAM and Cinvestav in Mexico. Specifically, we are working on several collaborative projects with other companies and universities where the efficient resolution of problems related to trajectory planning and distributed algorithms with teams of UAVs is required. It is a field of research that allows the convergence of engineering and applied mathematics towards technology transfer and it is the focus where our group is currently putting more interest.

Part C. RELEVANT MERITS (sorted by typology)

C.1. Publications (more relevant papers in Mathematics and Aerial Robotics)

1. F. Rodríguez, J.M. Díaz-Báñez, J. Capitán, Kinodynamic Planning for an Energy-Efficient Autonomous Ornithopter. **Computers & Industrial Engineering**, 2021.
2. Bereg, S., Brunner, A., Caraballo, L. E., Díaz-Báñez, J. M., Lopez, M. A. (2020). On the robustness of a synchronized multi-robot system. **Journal of Combinatorial Optimization**, 39, 988-1016.
3. Díaz-Báñez, J.M., Fabila-Monroy, R., Heredia, M.A., Duque, F., Urrutia, J., Ramírez-Vigueras (2020). A. On optimal coverage of a tree with multiple robots. **European Journal of Operational Research**, 285, 3, 844-852.
4. L.E. Caraballo, J.M. Díaz-Báñez, J. Capitán, A. Ollero (2020). Autonomous Planning for Multiple Aerial Cinematographers, Proc. International Conference on Intelligent Robots and Systems, **IROS 2020**, Las Vegas, USA.
5. Aichholzer, O., Caraballo, L.E., Díaz-Báñez, J.M., Fabila-Monroy, R., I. Ventura, Vogtenhuber, B. (2020). Scheduling drones to cover outdoor events, Proc. European Workshop on Computational Geometry, **EuroCG 2020**.
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C.2. Research projects

1. Project PID2020-114154RB-I00

Title: **Trayectory optimization for autonomous drones (OPTIDRON)**

Responsible: **José-Miguel Díaz-Báñez**

Financing entity: Ministry of Economy and Competitiveness, Government of Spain

Duration: 9/2021 – 9/2024; Financing received (in euros): 35.600,00 €

2. Project MTM2016-76272-R

Title: **Design of geometric algorithms for engineering problems (GALGO)**

Responsible: **José-Miguel Díaz-Báñez**

Financing entity: Ministry of Economy and Competitiveness, Government of Spain

Duration: 12/2016 – 12/2020; Financing received (in euros): 14.900,00 €

2. Project: H2020-MSCA-RISE project 73499 - CONNECT

Title: **Combinatorics of Networks and Computation (CONNECT)**

Responsible US: **José-Miguel Díaz-Báñez**

Financing entity: EU

Duration: 01/2017 – 01/2020 (extended to 2022/8)

Financing received (in euros): 324.000,00 €

3. Project: P12-TIC-1362

Title: **Computacional Analysis of Flamenco Music (COFLA2)**

Responsible: **José Miguel Díaz Báñez**

Financing entity: Junta de Andalucía (Regional excellence project)

Duration: 01/2014 – 01/2018

Financing received (in euros): 141.494,00 €

4. Project: FP7-ICT-2011-287617

Title: **ARCAS- Aerial Robotics Cooperative Assembly System (ARCAS)**

Responsible: Iván Maza

Financing entity: European Commission

Duration: 11/2011 - 11/2015

Financing received (in euros): 8.094 689.00 €

6. Project: P09-TIC-4840

Title: **Computacional Analysis of Flamenco Music (COFLA)**

Responsible: **José Miguel Díaz Báñez**

Financing entity: Junta de Andalucía (Proyecto de Excelencia)

Duration: 02/2010 – 08/2012

Financing received (in euros): 178.234,68 €

7. Project: MTM2009-08625

Title: **Geometric Optimization Applied to Classification, Communications and Aerial Robotics Problems**

Responsible: **José Miguel Díaz Báñez**

Financing entity: Ministry of Science and Technology, Government of Spain

Duration: 01/2010 – 12/2012

Financing received (in euros): 27.346 €

9. Project: DPI2011-28937-C02-01

Title: **Long-term Cooperative Missions Integrated Aerial Robots**

Responsible: Aníbal Ollero

Financing entity: Ministry of Economy and Competitiveness, Government of Spain.

Duration: Duration: 01/2012 – 12/2014

C.3. Contracts, technological or transfer merits

LOU Contract PI-1482/33/2015 with the company "Stokholm Precision Tools"

(<https://sptab.com/>). Responsible: **José Miguel Díaz Báñez**

Title: "Algorithms for the navigation of underground autonomous systems"

C.5. Others

Awards: Andalusia Award 2018, "Education and Culture" City Hall of Almonte (Huelva, Spain).

Supervision: I have supervised 5 PhD's at the University of Seville (all endorsed by 4 papers in JCR) and co-directed 2 PhD's at UNAM (Mexico). I have supervised 5 master's thesis, 11 degree thesis, having obtained the thesis, "*An efficient algorithm for melodic similarity in flamenco cantes*" by J.C. Rizo, the "Manuel Galván" award at the US ETSI (the best research work that relates mathematics and engineering in 2014). I am currently supervising two doctoral thesis with new scholarship students.

Committees and evaluation: I am a member of the scientific committees in the conferences

- Mexican Conference on Discrete Mathematics and Computational Geometry
 - Spanish Meeting on Computational Geometry
 - International Conference on Folk Music Analysis (FMA)
 - International inter-disciplinary conference Research & Flamenco (INFLA)
- Evaluator of national and european projects.
- Referee in JCR journals of the fields: Computational Geometry, Combinatorial Optimization, Robotics and Operations Research.
- Organizer and editor of several proceedings of the Spanish Meeting on Computational Geometry (EGC, <http://congreso.us.es/ecgeometry/>) and the International inter-disciplinary conference Research & Flamenco (INFLA, <http://congreso.us.es/infla/infla2018/>).
- Guest Editor of a Special Issue of the "[International Journal of CG & Applications](#)".
- Organizer of several "open problems" workshops: specially the biannual Spanish Workshop on Geometric Optimization (<http://alojamientos.us.es/galgo/>).