

Mikel Egaña Aranguren, Ph.D.

Eurohelp Consulting S.L.
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Education

2009 **Ph.D.** Computer Science, University of Manchester, UK
2005 **M.Sc.** Bioinformatics, University of Manchester, UK
2003 **B.Sc.** Biology, University of Basque Country, Spain
2002 **Invited student** Evolutionary Ecology at Canterbury Christ Church University College, UK
2002 **Erasmus student** Environmental Biology at Canterbury Christ Church University College, UK

Employment

2015-Present **Linked Open Data analyst** Eurohelp Consulting, S.L.
2014-2015 **Post-doc researcher** Genomic Resources Group, UPV/EHU
2011-2014 **Marie Curie Cofund fellow** Ontology Engineering Group (Computer Science);
Biological Informatics Group (CBGP), UPM, Spain
2009 **Researcher** OGO project, UM, Spain
2006 **Marie Curie EST fellow** Computational Biology group, VIB, Belgium

Research visits

2005 European Bioinformatics Institute (EBI), funded by the Network of Excellence on
Semantic Interoperability and Data Mining in Biomedicine (EU)

Funding

2011-2014 Marie Curie Cofund (EU)
2006 Marie Curie EST (EU)
2005 EPSRC (UK): Ph.D. fees
2005 - 2008 University of Manchester (UK): Ph.D. maintenance allowance
2002 Erasmus (EU)

Publications

Refereed Journal Articles

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| 2015 | Pawluczyk, M., Weiss, J., Links, M. G., Aranguren, M. E., Wilkinson, M. D., and Egea-Cortines, M. (2015). Quantitative evaluation of bias in PCR amplification and Next Generation Sequencing derived from metabarcoding samples. <i>Analytical and Bioanalytical Chemistry</i> , 407(7):1841–1848 |
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- 2014 González, A. R., Callahan, A., Toledo, J. C., García, A., Aranguren, M. E., Dumontier, M., and Wilkinson, M. D. (2014a). Automatically exposing OpenLifeData via SADI semantic Web Services. *Journal of Biomedical Semantics*, 5(1):46+
- 2014 Aranguren, M. E., González, A. R., and Wilkinson, M. D. (2014). Executing SADI services in Galaxy. *Journal of Biomedical Semantics*, 5(1):42+
- 2014 José Antonio Miñarro Giménez, Mikel Egaña Aranguren, Boris Villazón Terrazas, and Jesualdo Tomás Fernández Breis (2014). Translational research combining orthologous genes and human diseases with the OGOLOD dataset. *Semantic Web Journal*, 5(2):145–149
- 2014 Mikel Egaña Aranguren, Jesualdo Tomás Fernández Breis, and Michel Dumontier (2014). Special issue on Linked Data for Health Care and the Life Sciences. *Semantic Web Journal*, 5(2):99–100
- 2013 Duque-Ramos, A., Fernández-Breis, J. T., Iniesta, M., Dumontier, M., Egaña Aranguren, M., Schulz, S., Aussenac-Gilles, N., and Stevens, R. (2013). Evaluation of the OQuaRE framework for ontology quality. *Expert Systems with Applications*, 40(7):2696–2703
- 2013 Egaña Aranguren, M., Fernández-Breis, J. T., Antezana, E., Mungall, C., Rodríguez González, A., and Wilkinson, M. D. (2013). OPPL-Galaxy, a Galaxy tool for enhancing ontology exploitation as part of bioinformatics workflows. *Journal of biomedical semantics*, 4(1):2
- 2012 Minarro-Gimenez, J., Egana-Aranguren, M., Villazon-Terrazas, B., and Fernandez-Breis, J. (2012). Publishing Orthology and Diseases Information in the Linked Open Data Cloud. *Current Bioinformatics*, 7(3):255–266
- 2011 Mironov, V., Antezana, E., Egaña, M., Blondé, W., De Baets, B., Kuiper, M., and Stevens, R. (2011). Flexibility and utility of the Cell Cycle Ontology. *Applied Ontology*, 6(3):247–261
- 2011 Miñarro-Gimenez, J., Aranguren, M., Béjar, R., Fernández-Breis, J., and Madrid, M. (2011). Semantic integration of information about orthologs and diseases: The OGO system. *Journal of biomedical informatics*, 44:1020–1031
- 2009 Antezana, E., Egaña, M., Blondé, W., Illarramendi, A., Bilbao, I., De Baets, B., Stevens, R., Mironov, V., and Kuiper, M. (2009b). The Cell Cycle Ontology: an application ontology for the representation and integrated analysis of the cell cycle process. *Genome Biol*, 10(5):R58
- 2009 Antezana, E., Blondé, W., Egaña, M., Rutherford, A., Stevens, R., De Baets, B., Mironov, V., and Kuiper, M. (2009a). BioGateway: a semantic systems biology tool for the life sciences. *BMC bioinformatics*, 10(Suppl 10):S11

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| 2008 | Egaña Aranguren, M., Wroe, C., Goble, C., and Stevens, R. (2008). In situ migration of handcrafted ontologies to reason-able forms. <i>Data & Knowledge Engineering</i> , 66(1):147–162 |
| 2008 | Aranguren, M., Antezana, E., Kuiper, M., and Stevens, R. (2008a). Ontology Design Patterns for bio-ontologies: a case study on the Cell Cycle Ontology. <i>BMC bioinformatics</i> , 9(Suppl 5):S1 |
| 2008 | Antezana, E., Egaña, M., De Baets, B., Kuiper, M., and Mironov, V. (2008b). ONTO-PERL: an API for supporting the development and analysis of bio-ontologies. <i>Bioinformatics</i> , 24(6):885 |
| 2007 | Stevens, R., Egaña Aranguren, M., Wolstencroft, K., Sattler, U., Drummond, N., Horridge, M., and Rector, A. (2007). Using OWL to model biological knowledge. <i>International Journal of Human-Computer Studies</i> , 65(7):583–594 |
| 2007 | Aranguren, M., Bechhofer, S., Lord, P., Sattler, U., and Stevens, R. (2007). Understanding and using the meaning of statements in a bio-ontology: recasting the Gene Ontology in OWL. <i>BMC bioinformatics</i> , 8(1):57 |

Book Chapters

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| 2010 | Aranguren, M., Stevens, R., Antezana, E., Fernández-Breis, J.T., Kuiper, M., and Mironov, V. (2010). Technologies and Best Practices for Building Bio-Ontologies. In <i>Knowledge-Based Bioinformatics</i> , volume Gil Alterovitz and Marco Ramoni (Eds.), pages 67–86. Wiley Online Library |
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Books

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| 2010 | Aranguren, M. (2010). <i>Role and application of ODPs in bio-ontologies</i> . Lambert Academic Publishing |
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Conference Proceedings

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| 2014 | González, A. R., Romero, M. M., Aranguren, M. E., and Wilkinson, M. D. (2014b). Nanopublishing clinical diagnoses: tracking diagnostic knowledge base content and utilization. In <i>27th International Symposium on Computer-Based Medical Systems (CBMS)</i> , pages 335–340 |
| 2013 | Iglesias, A. R., Aranguren, M. E., González, A. R., and Wilkinson, M. D. (2013). Plant Pathogen Interactions Ontology (PPIO). In Rojas, I. and Guzman, F. M. O., editors, <i>IWBBIO</i> , pages 695–702. Copicentro Editorial |

- 2011 Aranguren, M., Fernández-Breis, J., and Antezana, E. (2011). OPPL-Galaxy: enhancing ontology exploitation in galaxy with OPPL. In *Proceedings of the 4th International Workshop on Semantic Web Applications and Tools for the Life Sciences*, pages 12–19. ACM
- 2010 Miñarro-Giménez, J., Aranguren, M., García-Sánchez, F., and Fernández-Breis, J. (2010). A semantic query interface for the OGO platform. In *Information Technology in Bio-and Medical Informatics, ITBAM 2010*, pages 128–142. Springer
- 2008 Egaña, M., Rector, A., Stevens, R., and Antezana, E. (2008). Applying ontology design patterns in bio-ontologies. In Gangemi, A. and Euzenat, J., editors, *Knowledge Engineering: Practice and Patterns*, volume 5268 of *Lecture Notes in Computer Science*, pages 7–16. Springer Berlin Heidelberg

Preprints, Workshop Proceedings and other publications

- 2015 Aranguren, M. E. (2015). Merging OpenLifeData with SADI services using Galaxy and Docker (DOI 10.1101/013615). *BioRxiv, Cold Spring Harbor Labs*
- 2012 Horridge, M., Aranguren, M., Mortensen, J., Musen, M., and Noy, N. (2012). Ontology Design Pattern Language Expressivity Requirements. In *WOP (Co-located with ISWC), Boston, USA*
- 2012 Gimenez, J., Aranguren, M., and Tomas, J. (2012). NCBO-Galaxy: bridging the BioPortal web services and the Galaxy platform. In *ICBO, Graz, Austria*
- 2009 Fernandez-Breis, J., Aranguren, M., and Stevens, R. (2009). A quality evaluation framework for bio-ontologies. In *ICBO, Buffalo, USA*
- 2009 Aranguren, M., Stevens, R., and Antezana, E. (2008b). Transforming the Axiomisation of Ontologies: The Ontology Pre-Processor Language. In *OWL Experiences and Directions (OWLED), Washington DC, USA*
- 2008 Iannone, L., Egana, M., Rector, A., and Stevens, R. (2008). Augmenting the expressivity of the ontology pre-processor language. In *OWL Experiences and Directions (OWLED), co-located with ISWC, Karlsruhe, Germany*
- 2008 Antezana, E., Blondé, W., Egana, M., Rutherford, A., Stevens, R., De Baets, B., Mironov, V., and Kuiper, M. (2008a). Structuring the life science resourceome for semantic systems biology: lessons from the BioGateway Project. In *Proceedings of the Workshop on Semantic Web Applications and Tools for Life Sciences (SWAT4LS): November 28, 2008; Edinburgh, United Kingdom*

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| 2012 | Marshall, M., Boyce, R., Deus, H., Zhao, J., Willighagen, E., Samwald, M., Pichler, E., Hajagos, J., Aranguren, M., Miller, M., Prudhommeaux, E., Dumontier, M., and Stephens, S. (2012). Health Care and Life Science (HCLS) Linked Data Guide (http://www.w3.org/2001/sw/hcls/notes/hcls-rdf-guide/) |
| 2007 | Aranguren, M. (2007). ¿Qué puede hacer la web semántica por la biología? In <i>BioGaia 7</i> |
| 2003 | Aranguren, M. (2003). Software libre (GNU/linux) para biólogos. In <i>BioGaia 3</i> |

Invited Talks

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| 2014 | Building reasonable biomedical ontologies for a Life Sciences Semantic Web. 3S (Systems, Synthetic, and Semantic) Biology summer school. CIBIO (Centre for Integrative Biology), University of Trento, Italy |
| 2011 | Linked Data for Functional Genomics. NTNU, Trondheim, Norway |
| 2010 | Aplicación de la Web Semántica en Biología Molecular. Universidad de Deusto, Facultad de Ingeniería, Spain |
| 2008 | Aplicación de la Web Semántica en Bioinformática. UM, Facultad de Informática, Spain |
| 2004 | Métodos y resultados actuales en Bioinformática: know-how y know-what de las redes tecnocientíficas en Bioinformática. EHU, Facultad de Filosofía, Spain |

Teaching Experience

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| 2015 | Life Sciences Semantic Web. MSc Bioinformatics, UM. Spanish |
| 2014 | Semantic biology tutorial: Use of Semantic Web resources for knowledge discovery. 3S (Systems, Synthetic, and Semantic) Biology summer school. CIBIO (Centre for Integrative Biology), University of Trento, Italy. English |
| 2014 | Galaxy tutorial. Erasmus mundus MSc in Marine Environment and resources, UPV-EHU. English |
| 2014 | Life Sciences Semantic Web. MSc Bioinformatics, UM. Spanish |
| 2013 | Introductory talk on bioinformatics for high school students visiting the CBGP. Spanish |

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| 2013 | Galaxy tutorials at CBGP. English and spanish |
| 2013 | Life Sciences Linked Data. MSc Bioinformatics, UM. Spanish |
| 2012 | OWL, as part of ATHENS course (UPM). English |
| 2012 | OWL, as part of ATHENS course (UPM). English |
| 2011 | Populous tutorial at SWAT4LS (London, UK), English |
| 2011 | OWL, as part of ATHENS course (UPM). English |
| 2011 | Web Ontology Language (OWL), as part of Artificial Intelligence MSc (UPM). English |
| 2011 | OWL/Description Logics, as part of the Artificial Intelligence course (UPM). Spanish |
| 2005-2008 | OWL tutorials for biologists (University of Manchester, UK). English |

Ph.D. panels

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| 2013 | Meifania Monica Chen, “Lipoprotein Ontology: A Formal Representation of Lipoproteins”, Curtin University. Australia |
| 2012 | Jose Antonio Miñarro-Giménez, “Entorno para la gestión semántica de información biomédica en investigación traslacional”. UM, Spain |
| 2011 | Doris Mejía Ávila, “Estrategia de interoperabilidad semántica en el contexto de integración de conocimiento geográfico y ambiental. Caso de aplicación: Biodiversity Ontology”. UPM, Spain |

Service

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| 2013 | Special issue editor for Semantic Web Journal (SWJ): Special issue on Linked Data for Health Care and the Life Sciences |
| 2013 | Reviewer for PeerJ |
| 2013 | Reviewer for Data and Knowledge Engineering (DKE) |
| 2012 | Program Committee Member at Managing Interoperability and complexXity in Health Systems. In conjunction with the ACM International Conference on Information and Knowledge Management |

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| 2012 | Program Committee Member at Joint Workshop on Semantic Technologies Applied to Biomedical Informatics and Individualized Medicine (SATBI + SWIM 2012). In conjunction with International Semantic Web Conference (ISWC) |
| 2012 | Reviewer for BMC Bioinformatics |
| 2012 | Reviewer for Journal of Biomedical Informatics (JBI) |
| 2012 | Reviewer for Computational and Mathematical Methods in Medicine (CMMM) |
| 2012 | Reviewer for Journal of Medical Systems (JOMS) |
| 2012 | Reviewer for Journal of Biomedical Semantics (JBS) |
| 2011 | Program Committee Member at Managing Interoperability and compleXity in Health Systems. In conjunction with the ACM International Conference on Information and Knowledge Management |
| 2011 | Program Committee Member at Knowledge Capture (K-CAP) |
| 2011 | Program Committee Member at Semantic Applied Technologies on Biomedical Informatics (SATBI 2011). In conjunction with the ACM International Conference on Bioinformatics and Computational Biology |
| 2011 | Reviewer for Semantic Web Journal (SWJ) |
| 2011 | Reviewer for Journal of Research and Practice in Information Technology (JRPIT) |
| 2008 | Program Committee Member at ONTORACT |

Collaboration with research groups in publications

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| 2015 | Computer Science. University of Saskatchewan, Canada |
| 2015 | Genetics. Technical University of Cartagena, Spain |
| 2015 | Biological Informatics Group. CBGP (UPM), Spain |
| 2014 | Biological Informatics Group. CBGP (UPM), Spain |
| 2014 | Dumontier lab. Carleton University, Canada |
| 2014 | Bio-Medical Informatics Research Group. Stanford University, USA |
| 2013 | Berkeley Bioinformatics Open-source Projects. Lawrence Berkeley National Laboratory, USA |

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| 2013 | Methods and Engineering of Language, Ontology and DIscourse. Toulouse Institute of Computer Science Research, France |
| 2013 | Institute for Medical Informatics, Statistics and Documentation. Medical university of Graz, Austria |
| 2012 | Dumontier lab. Carleton University, Canada |
| 2012 | Bio-Medical Informatics Research Group. Stanford University, USA |
| 2012 | Isoco Labs. Isoco, Spain |
| 2009 | Noray bioinformatics, Spain |
| 2009 | Tecnologías de Modelado, Procesamiento y Gestión del Conocimiento. Universidad de Murcia, Spain |
| 2008 | Semantic Systems Biology. Trondheim University, Norway |
| 2008 | KERMIT. Gent University, Belgium |
| 2005 | Information Management Group. University of Manchester, UK |
| 2005 | Bio-Health Informatics Group. University of Manchester, UK |

Technical skills

Semantic Web and Linked Data (Advanced): RDF, RDFS, SPARQL, OWL, SWRL, JSON-LD, OWL API, RDFLib, ONTO-PERL, Jena, Sesame, Stardog, Pubby, Protégé 4, TopBraid composer

Programming languages (Medium): Java, Perl, Python, Sed, Bash, JavaScript

UNIX systems (Medium): GNU/Linux (Debian, Ubuntu, CentOS, Red Hat)

Markup languages (Medium): XML, HTML 5, L^AT_EX 2_ε, Markdown

Web Services (Basic): SADI framework, NCBO services

Web (Basic): Galaxy, Apache, Nginx, Tomcat, Jetty, lighttp, Solr/Lucene, Wordpress, Drupal, Jekyll, NodeJS

Software development (Basic): Maven, Ant, SCons, Eclipse, Subversion, Mercurial, Git, Trac

Relational Databases (Basic): MySQL, PostgreSQL

File based data storage (Basic): HDF5, YAML, JSON

Statistical analysis (Basic): R

Cloud computing (Basic): Amazon EC2

Virtualisation (Basic): Docker

Other merits

ANECA certificate: Ayudante Doctor

Useful profiles

GitHub: <http://github.com/mikel-egana-aranguren>

Google Scholar: <http://scholar.google.com/citations?user=JsMMKnoAAAAJ>

Scopus: <http://www.scopus.com/authid/detail.url?authorId=16038705500>

ResearchGate: http://www.researchgate.net/profile/Mikel_Egana

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