Mikel Egaña Aranguren, Ph.D.

Functional Genomics Group
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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

2014-Present **Post-doc researcher** Functional Genomics Group, University of Basque Country
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

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

2008 Egaña Aranguren, M., Wroe, C., Goble, C., and Stevens, R. (2008). In situ migration of handcrafted ontologies to reason-able forms. *Data & Knowledge Engineering*, 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. *BMC bioinformatics*, 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. *Bioinformatics*, 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. *International Journal of Human-Computer Studies*, 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. *BMC bioinformatics*, 8(1):57

Book Chapters

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 *Knowledge-Based Bioinformatics*, volume Gil Alterovitz and Marco Ramoni (Eds.), pages 67–86. Wiley Online Library

Books

2010 Aranguren, M. (2010). *Role and application of ODPs in bio-ontologies*. Lambert Academic Publishing

Conference Proceedings

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 *27th International Symposium on Computer-Based Medical Systems (CBMS)*, 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, *IWBBIO*, 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

Workshop Proceedings and other publications

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*

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 *BioGaia 7*

2003 Aranguren, M. (2003). Software libre (GNU/linux) para biólogos. In *BioGaia 3*

Invited Talks

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

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
2013	Galaxy tutorials at CBGP
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

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

2013	**Special issue editor** Semantic Web Journal, Special issue on Linked Data for Health Care and the Life Sciences
2012	**Program Committee Member** Managing Interoperability and compleXity in Health Systems. In conjunction with the ACM International Conference on Information and Knowledge Management
2012	**Program Committee Member** Joint Workshop on Semantic Technologies Applied to Biomedical Informatics and Individualized Medicine (SATBI + SWIM 2012). In conjunction with International Semantic Web Conference (ISWC)
2011	**Program Committee Member** Managing Interoperability and compleXity in Health Systems. In conjunction with the ACM International Conference on Information and Knowledge Management
2011	**Program Committee Member** Knowledge Capture (K-CAP)
2011	**Program Committee Member** Semantic Applied Technologies on Biomedical Informatics (SATBI 2011). In conjunction with the ACM International Conference on Bioinformatics and Computational Biology

2011-Present	**Reviewer** PeerJ, Data and Knowledge Engineering (DKE), BMC Bioinformatics, Journal of Biomedical Informatics (JBI), Computational and Mathematical Methods in Medicine (CMMM), Journal of Medical Systems (JOMS), Journal of Biomedical Semantics (JBS), Semantic Web Journal (SWJ), Journal of Research and Practice in Information Technology (JRPIT)
2008	**Program Committee Member** ONTORACT

Collaboration with research groups in publications

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.
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, LaTeX 2_ε.

Web Services (Basic): SADI framework, NCBO services.

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

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

Teaching systems (Basic): Moodle.

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.

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