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Education

2011 **Ph.D.** Bioinformatics, University of Edinburgh
1993 **BSc.** Artificial Intelligence and Computer Science, University of Edinburgh

Employment

2015-Present **Scientist** Environmental Genomics and Systems Biology Division, LBNL
2006-2015 **Scientist** Genomics Division, LBNL
2001-2006 **Bioinformatics Specialist** Howard Hughes Medical Institute, UC Berkeley
1999-2001 **Bioinformatics Scientist** Life Sciences Division, Lawrence Berkeley National Laboratory
1994-1999 **Bioinformatician** Roslin Institute, Edinburgh, UK

Publications

Google Scholar: goo.gl/x2R5PC h-index: 52
MyNCBI: goo.gl/OFQ9k6 i10-index: 95

Refereed Journal Articles

2016 **Mungall, C.J.**, McMurry, J. A., Köhler, S., Balhoff, J. P., Borromeo, C., Brush, M., Carbon, S., Conlin, T., Dunn, N., Engelstad, M., Foster, E., Gourdine, J., Jacobsen, J. O., Keith, D., Laraway, B., Lewis, S. E., NguyenXuan, J., Shefchek, K., Vasilevsky, N., Yuan, Z., Washington, N., Hochheiser, H., Groza, T., Smedley, D., Robinson, P. N., and Haendel, M. A. (2016b). The Monarch Initiative: an integrative data and analytic platform connecting phenotypes to genotypes across species. *Nucleic Acids Research*, page gkw1128

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2001 Hu, J., **Mungall, C. J.**, Law, A., Papworth, R., Nelson, J. P., Brown, A., Simpson, I., Leckie, S., Burt, D. W., Hillyard, A. L., and Archibald, A. L. (2001). The ARKdb: genome databases for farmed and other animals. *Nucleic Acids Res*, 29(1):106–110

Ashburner, M., Ball, C. A., Blake, J. A., Butler, H., Cherry, J. M., Corradi, J., Dolinski, K., Eppig, J. T., Harris, M., Hill, D. P., Lewis, S., Marshall, B., **Mungall, C. J.**, Reiser, L., Rhee, S., Richardson, J. E., Richter, J., Ringwald, M., Rubin, G. M., Sherlock, G., and Yoon, J. (2001). Creating the gene ontology resource: design and implementation. *Genome Res*, 11(8):1425–1433

2000 Rubin, G. M., Yandell, M. D., Wortman, J. R., Miklos, G. L. G., Nelson, C. R., Hariharan, I. K., Fortini, M. E., Li, P. W., Apweiler, R., Fleischmann, W., Cherry, J. M., Henikoff, S., Skupski, M. P., Misra, S., Ashburner, M., Birney, E., Boguski, M. S., Brody, T., Brokstein, P., Celniker, S. E., Chervitz, S. A., Coates, D., Cravchik, A., Gabrielian, A., Galle, R. F., Gelbart, W. M., George, R. A., Goldstein, L. S., Gong, F., Guan, P., Harris, N. L., Hay, B. A., Hoskins, R. A., Li, J., Li, Z., Hynes, R. O., Jones, S. J., Kuehl, P. M., Lemaitre, B., Littleton, J. T., Morrison, D. K., **Mungall, C. J.**, O'Farrell, P. H., Pickeral, O. K., Shue, C., Vosshall, L. B., Zhang, J., Zhao, Q., Zheng, X. H., and Lewis, S. (2000). Comparative genomics of the eukaryotes. *Science*, 287(5461):2204–2215

1998 Hu, J., **Mungall, C. J.**, Nicholson, D., and Archibald, A. L. (1998). Design and implementation of a CORBA-based genome mapping system prototype. *Bioinformatics*, 14(2):112–120

Book Chapters

2007 Haendel, M. A., Neuhaus, F., Osumi-Sutherland, D., Mabee, P. M., Mejino, J. L. J., **Mungall, C. J.** J., and Smith, B. (2007). CARO - The Common Anatomy Reference Ontology. In *Anatomy Ontologies for Bioinformatics, Principles and Practice*, volume Albert Burger, Duncan Davidson and Richard Baldock (Eds.). Springer

Conference Proceedings

2016 Manda, P., **Mungall, C. J.**, Balhoff, J., Lapp, H., and Vision, T. (2016). Investigating the importance of anatomical homology for cross-species phenotype comparisons using semantic similarity. In *Pacific Symposium on Biocomputing 21*, pages 132–143. World Scientific Publishing Company

2014 **Mungall, C. J.**, Dietze, H., and Osumi-Sutherland, D. (2014). Use of OWL within the Gene Ontology. In Keet, M. and Tamma, V., editors, *Proceedings of the 11th International Workshop on OWL: Experiences and Directions (OWLED 2014)*, pages 25–36, Riva del Garda, Italy, October 17-18, 2014

2013 Brush, M. H., **Mungall, C.J.**, Washington, N., and Haendel, M. A. (2013). What's in a Genotype ? An Ontological Characterization for Integration of Genetic Variation Data. In Dumontier, M., Hoehndorf, R., and Baker, C. J. O., editors, *Proceedings of the International Conference on Biomedical Ontology 2013, Montreal, Canada, July 7-12, 2013*, pages 105–108

2011 **Mungall, C.** (2011). POSH: The Prolog OWL Shell. In Dumontier, M. and Courtot, M., editors, *Proceedings of the 8th International Workshop on OWL: Experiences and Directions (OWLED2011), San Francisco, USA. June 5-6, 2011*

2009 **Mungall, C. J.** (2009). Experiences Using Logic Programming in Bioinformatics. In *Lecture notes in computer science*, volume Volume 564, pages 1–21. Springer

Vassiliadis, V., Wielemaker, J., and **Mungall, C. J.** (2009). Processing OWL2 ontologies using Thea: An application of logic programming. In *6th OWL Experiences and Directions Workshop (OWLED 2009)*

Gkoutos, G. V., **Mungall, C.J.**, Doelken, S., Ashburner, M., Lewis, S., Hancock, J., Schofield, P., Köhler, S., Robinson, P. N., Dolken, S., and Kohler, S. (2009). Entity/Quality-Based Logical Definitions for the Human Skeletal Phenome using PATO. In *Proceedings of the 31st Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2009)*, volume 2009, pages 7069–72

2008 Bada, M., **Mungall, C. J.**, and Hunter, L. (2008). A Call for an Abductive Reasoning Feature in OWL-Reasoning Tools toward Ontology Quality Control. In *5th OWL Experiences and Directions Workshop (OWLED 2008)*

2007	**Mungall, C. J.**, Gkoutos, G., Washington, N., and Lewis, S. (2007b). Representing Phenotypes in OWL. In Golbreich, C., Kalyanpur, A., and Parsia, B., editors, *Proceedings of the OWLED 2007 Workshop on OWL: Experience and Directions*, Innsbruck, Austria
2003	Ashburner, M., **Mungall, C.J.**, and Lewis, S. (2003). Ontologies for biologists: a community model for the annotation of genomic data. In *Cold Spring Harbor symposia on quantitative biology*, volume 68, pages 227–235

Pre-prints

All pre-prints are on bioRxiv.

2016	**Mungall, C.J.**, Koehler, S., Robinson, P., Holmes, I., and Haendel, M. (2016a). k-BOOM: A Bayesian approach to ontology structure inference, with applications in disease ontology construction
	Holmes, I. H. and **Mungall, C.J.** (2016). BioMake: a GNU Make-compatible utility for declarative workflow management
2014	**Mungall, C. J.** (2014). Formalization of Genome Interval Relations

Awards and Honors

2013	Encyclopedia of Life Rubenstein Fellowship award. Role: collaborator

Awarded Proposals

2012-2016	Semantic LAMHDI: Linking Diseases to Model Organism Resources. NIH. Role: Site PI
2016-2017	BD2K BioCADDIE Harvester: Enhancing metadata using GitHub, YAML and Markdown. NIH. Role: PI
2011-2016	Ontology-enabled reasoning across phenotypes from evolution and model organisms. NSF. Role: Consortium PI
2015-2017	cROP: Common Reference Ontologies and Applications for Plant Biology . NSF. Role: Consortium PI

Invited Talks

2016	Incorporating the exposome into machine intelligence methods in biomedical research - Sanford Imagenetics, Sioux Falls, September 2016
2016	Panelist, Critical Assessment of Genome Interpretation, Open Challenges Conference, UCSF, March 2016
2016	Panelist, Data Integration Challenges, NSF Phenotype Research Coordination Network Meeting, BioSphere2, February 2016
2015	Computing on phenotypes across scale and species - Association for Molecular Pathology Annual Meeting, Austin, November 2015
2015	Crossing the Species Divide - NIH Symposium: Linking Disease Model Phenotypes to Human Conditions, NIH, September 2015
2015	From Phenotype Ontologies to Phenotype Networks, Stanford, May 2015
2015	Describing samples using the Uberon anatomy ontology - Genomics Standards Workshop JGI, May 2015
2015	Towards Common Peer Based Standards Development - NIH BD2K Data Standards Workshop, Bethesda, February 2015
2014	Computing on the environment - NIEHS Workshop, NC State, September 2014
2013	Uberon : an integrative multi-species ontology - European Bioinformatics Institute Industry Workshop, Hinxton Genome Campus, April 2013
2013	Mapping Phenotype Ontologies for diabetes and obesity - European Bioinformatics Institute, Hinxton Genome Campus, April 2013
2012	Helping Machines to Help Us (Keynote) - Rocky Bioinformatics Summit, November 2012
2011	The Environment Ontology, Environmental Protection Agency offices, San Francisco, March 2011
2009	Logic Programming in Bioinformatics (Keynote) - International Conference on Logic Programming, Pasadena, July 2009
2007	Overview of the Open Biomedical Ontologies Foundry - Clinical Trial Ontology Workshop, NIH, Bethesda, May 2007
2006	Ontologies for Evo-Devo, National Evolutionary Synthesis Center, Nov 2006

Teaching Experience

2015	**Tutorial Organizer**. Introduction to ontologies, international plant trait curation workshop, Corvalis, OR, 2015
2014	**Mentor**. Harvey Mudd College, Industry Clinic Program
2012	**Course organizer**. Developing ontologies in Protege/OWL, Hinxton, UK, January 2012
2011	**Tutorial organizer**. Developing ontologies in OBO and OWL, International Conference on Biomedical Ontologies, Buffalo, NY, 2011
2009	**Tutorial organizer**. Developing ontologies in OBO and OWL, International Conference on Biomedical Ontologies, Buffalo, NY, 2009
2005	**Undergraduate guest lecturer**. Introduction to the Gene Ontology, Bio-Engineering, UC Berkeley
2001-2003	**Instructor** Programming for biology. Cold Spring Harbor Laboratory
2001	**Module Organizer**. World Health Organization International Training Course on Bioinformatics, FIOCRUZ, Rio de Janeiro, Brazil, May 21-June 15, 2001

Thesis Committees

2015	**Master thesis Committee** Bryan Laraway, Department of Biomedical Informatics, Oregon Health and Sciences University
2013	**PhD Thesis Committee** Sebastian Koehler, Department of Mathematics and Computer Science, Charite - Universitatsmedizin Berlin

Service

Program Committees

2016	**Steering Committee** 7th International Conference on Biological Ontology: Food, Nutrition, Health and Environment for the 9 billion, Corvalis, August 2016
2016	**Program Committee** 8th International Conference on Neural Computation Theory and Applications
2016	**Program Committee** ECCB 2016
2016	**Program Committee** Bio-Ontologies 2016

2016	**Program Committee** PhenoDay 2016
2016	**Reviewer** Pacific Symposium on Biocomputing 2016
2015	**Program Committee Member** 4th Workshop on Knowledge Discovery and Data Mining Meets Linked Open Data
2015	**Program Committee Member** Resources Program, ISWC 2016
2015	**Program Committee Member** Data Sets and Ontologies Program, ISWC 2015
2015	**Program Committee Member** Bio-Ontologies
2014	**Program Committee Member** 10th Workshop on Constraint-Based Methods for Bioinformatics, September 8 2014, Lyon, France
2014	**Reviewer** AMIA 2014
2014	**Program Committee Member** 6th Workshop on Formal Ontologies meet Industry
2014-Present	**Program Committee Member** PhenoDay ISMB 2014-2016
2013	**Program Committee Member** Declarative Logic Programming: Theory, Systems, and Applications
2009-2013	**Program Committee Member** Bio-Ontologies
2009-2013	**Program Committee Member** Semantic Web Applications in the Life Sciences
2009-2013	**Program Committee Member / Track Chair** International Conference on Biomedical Ontologies
2010	**Program Committee Member** OWL: Experience and Directions
2010-Present	**Program Committee Member** ISMB/ECCB
2010	**Reviewer** AMIA/TBI 2014
2007	**Program Committee Member** Bio-Ontologies
2007	**Program Committee Member** OWL: Experience and Directions
2007	**Program Committee Member** ISMB/ECCB

Journal Reviews

2016	**Reviewing Editor** eLife
2016	**Reviewer** International Journal of Approximate Reasoning
2016	**Reviewer** Systematic Biology
2016	**Reviewer** Nature Methods
2016	**Reviewer** Genome Research
2016	**Reviewer** Nucleic Acids Research
2016	**Reviewer** BioMed Research International
2015	**Reviewer** Nature Methods
2014-Present	**Reviewer** PLoS ONE
2014	**Reviewer** Peer/J
2014	**Reviewer** Gigascience
2014	**Reviewer** International Journal of Human-Computer Studies
2013	**Reviewer** PLoS Genetics
2013-Present	**Reviewer** Journal of Biomedical Semantics
2011-Present	**Reviewer** PLoS Computational Biology
2011-Present	**Reviewer** Human Mutation
2011-2012	**Reviewer** Journal of Biomedical Informatics
2012-Present	**Reviewer** Nucleic Acids Research
2012	**Reviewer** International Journal on Semantic Web and Information Systems
2011-Present	**Reviewer** Database

2010-Present	**Reviewer** Bioinformatics
2010	**Reviewer** Genome Research

Working Groups and Advisory Boards

2016	**Scientific Advisory Board Member** NSF Phyloreferences for the Tree of Life
2015	**Working Group Member** National Center for Ecological Analysis and Synthesis Ontology WG
2014-Present	**Working Group Member** Global Alliance for Genomics and Health, Clinical Working Group
2014-Present	**Working Group Member** International Rare Diseases Consortium, Ontologies and rare disease prioritization WG
2014-Present	**WG1 co-leader** Transcription Factor TG Consortium
2010, 2011	**Scientific Advisory Board Member** Disease Ontology
2004-Present	**Coordinator** Open Biological Ontologies Library

Institutional Service

2016	**Interview Committee** Interviews for division head
2016	**Working Group Member** Neurosciences Interest Working Group
2016	**Visioning Group** Biosciences Strategic Plan

Review Panels

2017	**NIH Proposal Review Panel** Genomics, Computational Biology and Technology (GCAT) study panel
2017	**SIB Proposal Review** Swiss Institute of Bioinformatics, competitive proposal review
2014	**DOE Proposal Review** Department of Energy, Biological and Environmental Research, SBIR/STTR Program

2012 **DOE Proposal Review** Department of Energy, Biological and Environmental Research, SBIR/STTR Program

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