

Yannick Wurm

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Organismal Biology, Queen Mary U London, London E1 4NS

My lab uses genomics & big data approaches to study social evolution and environmental challenges in social insects (mainly ants & bees). To facilitate this we also create innovative bioinformatics tools.

2014- SENIOR LECTURER, Queen Mary University of London (QMUL)
2012-14 LECTURER IN BIOINFORMATICS, QMUL
2010-11 POSTDOC with L. Keller, Dept. Ecology & Evolution, U Lausanne
2006-11 EMBEDDED BIOINFORMATICIAN with I. Xenarios, Vital-IT, Swiss Institute of Bioinformatics
2005-09 PhD: SOCIOGENETICS OF FIRE ANTS with L. Keller, Dept. Ecology & Evolution, U Lausanne
2004 RESEARCH TRAINEE (6 months) with R. Roy, Biology Dept., McGill, Montreal
2003 JUNIOR SOFTWARE DEVELOPER (6 months) with Krugazor Software, Paris
99-2004 MSc: BIOINFORMATICS & MODELING at National Institute of Applied Sciences, INSA Lyon
1999 SCIENTIFIC BACCALAUREATE (Biology & Math) Cité Scolaire Internationale de Lyon
France 10years, USA 9y, Switzerland 7y, Germany 4y, Indonesia 1y, Quebec 1y, UK since 2012

DISTINCTIONS & GRANTS (>1,000,000 £ TOTAL)

2016	NERC & BBSRC London DTP studentships	1 full, 2 shared
2015-16	QMUL internal grants	13,000 £
2015-17	FP7 Marie Curie Fellowship Host	221,606.40 €
2014-	Fellow of the Software Sustainability Institute	
2014-17	Science without Borders PhD Scholarship host	\$78,046
2014-17	NERC grant (Full economic cost FeC to QMUL)	520,313 £
2014-15	NERC Big Data Capital Call (co-I with Nichols) to QMUL	85,000 £
2014	QMUL VP-research fund (Wurm et al (with 12 others))	45,000 £
2013-14	NEScent Working Group (with Papanicolaou & Muñoz-Torres)	\$50,000
2012-14	BBSRC sTDRF (FeC)	148,136 £
2011-14	Small grants (Google Summer of Code, Amazon EC2, NERC NBAF, QMUL)	>15,000 £
2002-11	Travel grants (SMBE, Apple, OFQJ, Swiss Zool.Soc.& Fondation 450 ^{ième})	>7,500 £
2009	Infectigen. With Keller, Zdobnov, Shoemaker, Valles	100,000 CHF

Distinctions: Queen Mary Faculty of Science & Engineering Research Performance Award (2014)
Best Biology PhD of the year Université de Lausanne (2010), Ecogenics innovation award at Biology08 (2008), Scientific baccalaureate honors: "Mention Bien" (1999).

REVIEWER

Funders: BBSRC (UK), Flanders WO (Belgium), INRAgronomique (France), CNPq (Brazil).

Journals: Nat Ecol Evol, Sci Rep, Genome Biol, Biol Lett, Mol Biol Evol, Bioinformatics, Nat Comm, BMC Genomics, Proc B, Mol Ecol, BMC Evol Biol, Insect Mol Biol, Nucl Acids Res, Bull Insectol, Insectes Soc, PLoS One, Curr Zool, iConcept Press, Heredity, Brief Func Genomics (guest editor).

ADDITIONAL RESPONSIBILITIES

Supervision: 2 Postdocs; PhD students (5 full, 2 shared); Bioinformaticians (1 full, 1 shared); 2 MSc students; **PhD panel** of 6 students; **Chair:** QMUL Biology informatics committee; **Board member:** London Centre for Ecology and Evolution, QMUL Research Computing group; **Teaching:** MSc: Genome Bioinformatics, R Programming; Year 3: Ecol. & Evol. Genomics, Research Methods; Year 1: Evolution. 25 advisees.

INVITED TALKS

2016: U Leicester, ENS Lyon, SIB Spring school, UC Davis, International Entomol. Congress

2015: Bio-in-Docker London, TGAC Norwich BioJS Keynote, NextBUG Edinburgh

2014: U Helsinki, U Oulu, Biométrie et Biol. Évol. Lyon, Balti & Bioinformatics Birmingham

2013: U Regensburg, Sheffield U, Cream Teas U Exeter, Sussex U, Bristol U, Institut Jacques Monod, UCL GEE

2012: UCL MRes BEC, EurBee 5 Halle, SIB Eco & Evo Genomics, ENS Lyon Evol. Genomics

2008-2011: U Okayama, BGI Social Insect Genomics

Conf, Taipei Communication in Social Insects, U Lyon Biométrie et Biol. Évolutive, Doctoriales Lausanne, UCL GEE, Jakarta Ruby Brigade, U Edinburgh RAD, Zurich Interaction, Arizona ant genomics, Lausanne Doctoral Student Symposium

SELECTED PUBLICATIONS (°corresponding; *equal) **904 Citations, h-index 15; i10-index 17**

in review at Mol Biol Evol The fire ant social chromosome supergene variant Sb shows low diversity but high divergence from SB. Pracana, Priyam, Nichols & Wurm°.

2016 SequenceServer: a modern graphical user interface for custom BLAST databases. *BioRxiv* 10.1101/033142 <http://doi.org/bbv3> Eight authors & Wurm°.

GeneValidator: identify problems with gene predictions. *Bioinformatics* 32:1559. 5 auth. & Wurm°.

2015 Arthropod genomics beyond fruit flies: bridging the gap between proximate and ultimate causation. *Brief Funct Genomics* 14:381 Wurm°.

Ant genomics: challenges to overcome & opportunities to seize. *Myrm News* 21:59. Nygaard°* & Wurm°*.

Avoid having to retract your genomics analysis. *The Winnower* 2, e143696.68941. Wurm°

2014 Social chromosome variants differentially affect queen determination and the survival of workers in the fire ant *Solenopsis invicta*. *Mol Ecol* 23:5117. Buechel*, Wurm°*, Keller.

Transposable element islands facilitate adaptation to novel environments in an invasive species. *Nat Comms* 5:5495. 16 auth. incl. Wurm°.

Effects of ploidy and sex-locus genotype on gene expression patterns in the fire ant *Solenopsis invicta*. *Proc B* 281:20141776. 8 auth. incl. Wurm°.

Convergent genetic architecture underlies social organization in ants. *Curr Biol* 24:2728. Purcell, Brelsford, Wurm°, Perrin, Chapuisat.

2013 A Y-like social chromosome causes alternative social organization in fire ants. *Nature* 493:664. Wang°*, Wurm°*, Nipitwattanaphon, Riba-Grognuz, Huang, Shoemaker, Keller°.

Comparative genomics of chemosensory protein genes reveals rapid evolution and positive selection in ant-specific duplicates. *Heredity* 110:538. Kulmuni°, Wurm°, Pamilo.

Vitellogenin underwent subfunctionalization to acquire caste and behavioral specific expression in the harvester ant *Pogonomyrmex barbatus*. *PLoS Genet* 9:e1003730. 5 auth. incl. Wurm°.

Duplication and concerted evolution in a master sex determiner under balancing selection. *Proc B* 280:20122968. Privman, Wurm°, Keller°

Social insect genomes exhibit dramatic evolution in gene composition and regulation while preserving regulatory features linked to sociality. *Genome Res* 23:1235. 38 auth. incl. Wurm°.

2012 The genomic impact of 100 million years of social evolution in seven ant species. *Trends Genet* 28:14. Gadau°, Helmkamp, Nygaard, Roux, Simola, Smith, Suen, Wurm°, Smith.

Epigenetics: The making of ant castes. *Current Biol* 22:R835-8. Chittka, Wurm°, Chittka°.

2011 The genome of the fire ant *Solenopsis invicta*. *PNAS*, 108:5679. Wurm° et al (38 auth.).

Visualization and quality assessment of de novo genome assemblies. *Bioinformatics*, 27:3425. Riba-Grognuz°, Keller, Falquet, Xenarios, Wurm°.

Relaxed selection is a precursor to the evolution of phenotypic plasticity. *PNAS* 108:15936. Hunt, Ometto, Wurm°, Shoemaker, Yi, Keller, Goodisman°.

The genome of the leaf-cutting ant *Acromyrmex echinatior* suggests key adaptations to advanced social life and fungus farming. *Genome Res* 21:1339.16 auth. (incl Wurm°).

2010 Parasitoid Wasps: From natural history to genomic studies. *Curr Biol* 20:R242. Wurm°, Keller.

Changes in reproductive roles are associated with changes in gene expression in fire ant queens. *Mol Ecol* 19:1200. Wurm°, Wang, Keller.

2009 Fourmidable: a database for ant genomics. *BMC Genomics* 10:5. Wurm° and 7 others.

2007 An annotated cDNA library and microarray for large-scale gene-expression studies in the ant *Solenopsis invicta*. *Genome Biol* 8:R9. Wang, Jemielity, Uva, Wurm°, Gräff, Keller.

Behavioral genomics: A, bee, C, G, T. *Curr Biol* 17:R51. Wurm°, Wang, Keller.