

y. wurm @ qmul.ac.uk  
skype: yannickwurm  
Tel: +44 20 7882 3049  
<http://yannick.poulet.org>

# Yannick Wurm

5.03A Fogg Building  
Organismal Biology  
Queen Mary University of London  
London E1 4NS, UK

I aim to understand the genetic mechanisms involved in the evolution of animal societies. I use genomics and bioinformatics to characterize genes involved in behavioral decisions and caste-specific developmental fates in ants and create novel bioinformatics tools for genomics work with emerging model organisms.

## HISTORY

- 2012- LECTURER IN BIOINFORMATICS, Queen Mary University of London (QMUL)
  - 2010-2011 POSTDOCTOR with L. Keller, Dept. Ecology & Evolution, U Lausanne & EMBEDDED BIOINFORMATICIAN with I. Xenarios, Vital-IT, Swiss Institute of Bioinformatics (SIB)
  - 2006-2009 MEMBER OF SIB PHD TRAINING NETWORK
  - 2005-2009 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 N. Zinovieff, Krugazor Software, Paris
  - 1999-2004 BIOINFORMATICS & MODELING (MASTERS); Natl. Institute of Applied Sciences, INSA Lyon
  - 1999 SCIENTIFIC BACCALAUREATE (BIOLOGY & MATH) Cité Scolaire Internationale de Lyon
- France (10y; citizen); Germany (4y; citizen), USA (9y), Switzerland (7y), Indonesia (1 y), UK (since 2012).

## DISTINCTIONS & GRANTS

- 2014-2017 NERC grant (520,313£ Full economic cost to QMUL)
- 2014-2016 FP7 Marie Curie Fellowship Host (221,606.40€)
- 2014-15 NERC Big Data Capital Call (local co-I with R. Nichols; 55,000 £ to QMUL)
- 2014 Queen Mary Faculty of Science & Engineering Research Performance Award.
- 2013 Google Summer of Code (GSoC) with A. Priyam and MA. Dragan (\$5,500)
- 2013-14 NEScent Working Group. Building non-model species genome curation communities (with A. Papanicolaou & M. Muñoz-Torres) (approx. \$50,000 total).
- 2012-14 BBSRC sTDRF. Genome Annotation for the Masses. (148,136 £ Full economic cost)
- 2011 NERC BioMolecular Analysis Facility proposal NBAF627 with RL. Hammond (5,656£)
- 2011 Society for Molecular Biology & Evolution Postdoc travel award (\$2,500)
- 2010 PhD award: Prix de la faculté de l'Université de Lausanne (1,000 CHF)
- 2009 Infectigen: Ultra-high throughput sequencing for discovery & characterization of viral genomes in fire ants. With E. Zdobnov, L. Keller, D. Shoemaker, S. Valles (100,000 CHF)
- 2008 Swiss Zoological Society & Fondation du 450<sup>ème</sup> grants to attend International Congress of Entomology (3,500 CHF)
- 2008 Ecogenics innovation award for oral communication at Biology08 (400 CHF)
- 2004 Région Rhône-Alpes and Office Franco-Québécois de la Jeunesse to visit Prof. Richard Roy's laboratory at McGill (2,800€)
- 2002 Apple WorldWide Developer Conference Scholarship (San Jose; \$1,600)
- 1999 Scientific baccalaureate honors: "Mention Bien"

**MEDIA COVERAGE** Has been extensive - not least because social insects are very media-friendly. See <http://yannick.poulet.org/pressCoverage/>

**REVIEWER** for BBSRC, Research Foundation Flanders, Nature Communications, Proc B, Mol Ecol, Mol Biol Evol, Bioinformatics, BMC Evol Biol, BMC Genomics, Insect Mol Biol, Nucl Acids Res, Bull Insectol, Insectes Sociaux, PLoS One, Curr Zool. iConcept Press.

## ADDITIONAL RESPONSIBILITIES

- Current: **PhD supervision:** programmers (A Priyam & B Vieira), PhD student (R Pracana); Two 3rd year project students; **PhD panel** of: S Dodsworth, S Bailey, L Sollars, J Zohren, D Radcliffe. **Advisor** to ~30 undergraduate students. Chair of QMUL School of Biology web committee; **Member**, QMUL High Performance Computing steering group. **Teaching** (Year 1 Evolution, Year 3 Research Methods, Masters Bioinformatics for genomics). **Leading** <http://antgenomes.org> community portal and <http://sequenceserver.com>
- Past: 3 Bioinformaticians: (O Riba-Grognuz, F Ricci, M Bota), 3 Lab technicians (C LaMendola, C Stoffel, N Tzaud), 3 Masters students (S Buechel, P Siguier, H Darras).

## INVITED ORAL PRESENTATIONS

2013/11/25	Sheffield University	2011/06/29	International Social Insect Genomics Research Conference, Shenzhen
2013/09/05	Cream Teas & Bioinformatics, @ Exeter	2011/05/06	Communication in Social Insects, National Taiwan University, Taipei
2013/04/11	Sussex University	2011/04/11	Laboratoire de Biométrie et Biologie Évolutive, Lyon
2013/03/19	Bristol University	2011/03/31	Les Doctoriales, Lausanne
2013/03/15	Institut Jacques Monod, Paris	2011/03/29	UCL Department of Genetics Ecology & Environment, London
2013/03/13	UCL Department of Genetics, Evolution and Environment	2010/10/31	Jakarta Ruby Brigade meeting, Indonesia
2013/01/17	Zoologisches Kolloquium, U Regensburg	2010/08/31	UK RAD Sequencing meeting, Edinburgh
2012/11/05	UCL MRes (Biodiversity, Evolution and Conservation)	2009/01/15	The Past, Present and Future of Ant Genomics, Arizona State University
2012/09/06	European Conference of Apidologie (EurBee 5), Halle an der Saale	2008/12/01	Interaction Seminar, Zurich
2012/06/18	SIB workshop on Evolutionary & Ecological Genomics, Adelboden	2008/10/23	Symposium of Ecology and Evolution Doctoral Students, Lausanne
2012/01/20	European Course on Comparative Genomics, ENS Lyon		
2011/07/31	Laboratory of Insect Ecology, Okayama		

## PUBLICATIONS (° indicates corresponding authorship; \* indicates equal contributions)

- 2013 Valles SM°, Shoemaker D, Wurm Y, Strong CA, Varone L, Becnel JJ, Shirk PD. **Discovery and molecular characterization of an ambisense densovirus from South American populations of *Solenopsis invicta*.** Biological Control 67:431-39.
- 2013 Corona M, Libbrecht R, Wurm Y, Riba-Grognuz O, Studer RA, Keller L°. **Vitellogenin underwent subfunctionalization to acquire caste and behavioral specific expression in the harvester ant *Pogonomyrmex barbatus*.** PLoS Genetics 9(8):e1003730.
- 2013 Manfredini F, Riba-Grognuz O, Wurm Y, Keller L, Shoemaker DD, Grozinger CM°. **Sociogenomics of cooperation and conflict during colony foundation in the fire ant *Solenopsis invicta*.** PLoS Genetics 9(8):e1003633.
- 2013 38 authors (incl. Wurm Y). **Social insect genomes exhibit dramatic evolution in gene composition and regulation while preserving regulatory features linked to sociality.** Genome Research gr.155408.113.
- 2013 Wang J\*, Wurm Y\*, Nipitwattanaphon M, Riba-Grognuz O, Huang YS, Shoemaker D, and Keller L°. **A Y-like social chromosome causes alternative social organization in fire ants.** Nature 493(7434): 664-668.
- 2013 Privman E, Wurm Y°, Keller L° **Duplication and concerted evolution in a master sex determiner under balancing selection.** Proceedings of the Royal Society B.
- 2013 Kulmuni J°, Wurm Y, Pamilo P. **Comparative genomics of chemosensory protein genes reveals rapid evolution and positive selection in ant-specific duplicates.** Heredity.
- 2012 Ingram KK°, Kutowoi A, Wurm Y, Shoemaker D, Meier R, Bloch G. **The molecular clockwork of the fire ant *Solenopsis invicta*.** PLoS One, 7(11):e45715.
- 2012 Chittka A, Wurm Y, Chittka L. **Epigenetics: The Making of Ant Castes.** Current Biology 22(19):R835-8.
- 2012 Gadau J°, Helmkamp M, Nygaard S, Roux J, Simola DF, Smith CR, Suen G, Wurm Y, Smith CD. **The genomic impact of 100 million years of social evolution in seven ant species.** Trends in Genetics 28(1):14-21 [cover photo].
- 2011 Riba-Grognuz O°, Keller L, Falquet L, Xenarios I, Wurm Y°. **Visualization and quality assessment of *de novo* genome assemblies.** Bioinformatics, 27(24): 3425-26.
- 2011 Hunt B, Ometto L, Wurm Y, Shoemaker D, Yi SV, Keller L, Goodisman MAD°. **Relaxed selection is a precursor to the evolution of phenotypic plasticity.** PNAS 108(38):15936-41
- 2011 Nygaard S°, Zhang G, Schiøtt M, Li C, Wurm Y, and 11 additional authors including Boomsma JJ). **The genome of the leaf-cutting ant *Acromyrmex echinatior* suggests key adaptations to advanced social life and fungus farming.** Genome Research , 21:1339-48.
- 2011 Wurm Y°. **Behind the scenes of an ant genome project.** Formosan Entomologist, 31(2):149-56.
- 2011 Wurm Y° et al (38 authors). **The Genome of the fire ant *Solenopsis invicta*.** PNAS, 108(14):5679-84.
- 2011 Gotzek D, Robertson H, Wurm Y, Shoemaker D. **Odorant binding proteins of the Red Imported Fire Ant, *Solenopsis invicta*: An example of the problems facing the analysis of widely divergent proteins.** PLoS ONE 6(1): e16289.
- 2010 Wurm Y°, Keller L. **Parasitoid Wasps: From natural history to genomic studies.** Current Biology 20:R242-4.
- 2010 Wurm Y°, Wang J, Keller L. **Changes in reproductive roles are associated with changes in gene expression in fire ant queens.** Molecular Ecology 19(6).
- 2009 Wurm Y°, Uva P, Ricci F, Wang J, Jemielity S, Iseli C, Falquet L, Keller L. **Fourmidable: a database for ant genomics.** BMC Genomics 10(5):5.
- 2007 Wang J, Jemielity S, Uva P, Wurm Y, Gräff J, Keller L. **An annotated cDNA library and microarray for large-scale gene-expression studies in the ant *Solenopsis invicta*.** Genome Biology 8:R9.
- 2007 Wurm Y, Wang J, Keller L. **Behavioral genomics: A, bee, C, G, T.** Current Biology 17:R51-3.
- 2005 Zerlin M, Greiffenberg L, Wurm Y, Winkler I, Kreusel D, Toemoe S, Ballabas L, Martin J. **Cryostock, Software for Cell Culture Management.** ESACT Proceedings: Animal Cell Technology Meets Genomics. 397-400.