

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

# Yannick Wurm

5.03A Fogg Building  
Biological & Chemical Sciences  
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. Additionally, I develop innovative bioinformatics tools for genomics work with emerging model organisms.

## HISTORY

- 2012- LECTURER  
Queen Mary, University of London, London
- 2010-2011 POSTDOCTORAL RESEARCH ASSOCIATE & EMBEDDED BIOINFORMATICIAN  
with Prof. Laurent Keller, Department of Ecology & Evolution, University of Lausanne  
and Prof. Ioannis Xenarios, Vital-IT, Swiss Institute of Bioinformatics, Lausanne
- 2006-2009 MEMBER OF SWISS INSTITUTE FOR BIOINFORMATICS PHD TRAINING NETWORK
- 2005-2009 PHD, "SOCIOGENETICS OF FIRE ANTS"  
with Prof. Laurent Keller, Department of Ecology & Evolution, University of Lausanne
- 2004 RESEARCH TRAINEE (6 MONTHS)  
with Prof. Richard Roy, Department of Biology, McGill University, Montreal
- 2003 JUNIOR SOFTWARE DEVELOPER (6 MONTHS)  
with Nicolas Zinovieff, Krugazor Software, Paris
- 1999-2004 ENGINEERING DEGREE IN BIOINFORMATICS AND MODELING (MASTERS-EQUIVALENT)  
National Institute of Applied Sciences, INSA Lyon
- 1999 SCIENTIFIC BACCALAUREATE (FOCUS: LIFE SCIENCES & MATHEMATICS)  
Lycée international de Gerland (secondary school), Lyon
- Countries: France (10 years, citizen); Germany (4 years; citizen), USA (9 years), Switzerland (7 years), Indonesia (1 year), UK (since 2012).

## DISTINCTIONS & GRANTS

- 2013 Google Summer of Code (GSoC) with A. Priyam and MA. Dragan (\$5,500)
- 2012 NEScent Working Group. Building non-model species genome curation communities (with A. Papanicolaou & M. Muñoz-Torres).
- 2012 BBSRC sTDRF. Genome Annotation for the Masses. (148,136 GBP Full economic cost)
- 2011 NERC BioMolecular Analysis Facility proposal NBAF627  
with R.L. Hammond (5,656 GBP)
- 2011 Society for Molecular Biology & Evolution Postdoc travel award (\$2500)
- 2010 PhD award: Prix de la faculté de biologie et de médecine  
de l'Université de Lausanne (1,000 CHF)
- 2009 Infectigen Research grant: 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 Grants from Swiss Zoological Society and Fondation du 450<sup>ième</sup> anniversaire de l'Université de Lausanne to attend the International Congress of Entomology (3,500 CHF)
- 2008 Ecogenics innovation award for oral communication at Biology08 (400 CHF)
- 2004 Grants from Région Rhône-Alpes and Office Franco-Québécois de la Jeunesse to visit Prof. Richard Roy's laboratory at McGill University (2,800 euros)
- 2002 Scholarship to attend Apple's WorldWide Developer Conference in 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 Mol Biol Evol, Proc B, Mol Ecol, Bioinformatics, BMC Evol Biol, BMC Genomics, Insect Mol Biol, Insectes Sociaux, Nucl Acids Res, Bull Insectol, Insectes Sociaux, PLoS One, Curr Zool. iConcept Press, Research Foundation Flanders (Belgium)

## INVITED ORAL PRESENTATIONS

2013/04/11	Sussex University	2011/06/29	International Social Insect Genomics Research Conference, Shenzhen
2013/03/19	Bristol University	2011/05/06	Communication in Social Insects, National Taiwan University, Taipei
2013/03/15	Institut Jacques Monod, Paris.	2011/04/11	Laboratoire de Biométrie et Biologie Évolutive, Lyon
2013/03/13	UCL Department of Genetics, Evolution and Environment, London.	2011/03/31	Les Doctoriales, Lausanne
2013/01/17	Zoologisches Kolloquium, Universität Regensburg	2011/03/29	UCL Department of Genetics Ecology & Environment, London
2012/11/05	UCL MRes (Biodiversity, Evolution and Conservation), London.	2010/10/31	Jakarta Ruby Brigade meeting, Indonesia
2012/09/06	European Conference of Apidologie (EurBee 5), Halle an der Saale	2010/08/31	2nd UK RAD Sequencing meeting, Edinburgh
2012/06/18	Swiss Institute for Bioinformatics workshop on Evolutionary & Ecological Genomics, Adelboden	2009/01/15	The Past, Present and Future of Ant Genomics, Arizona State University
2012/01/20	European Course on Comparative Genomics, ENS Lyon	2008/12/01	Interaction Seminar, Zurich
2011/07/31	Laboratory of Insect Ecology, Okayama University	2008/10/23	Symposium of Ecology and Evolution Doctoral Students, Lausanne

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

- in review* 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.
- in press* 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.
- 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
- 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.
- 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, Schjøtt M, Li C, Wurm Y, Hu H, Zhou J, Ji L, Qiu F, Rasmussen M, Pan H, Hauser F, Krogh A, Grimmelikhuijzen CJP, Wang J, and 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.

## ADDITIONAL RESPONSIBILITIES

I represent the School of Biology and Chemistry in my university's High Performance Computing (HPC) Research Computing Steering Group.

I lead SequenceServer, an open-source project aiming to make it easier to perform custom BLAST searches <http://www.sequenceserver.com/>

I created and maintain the main resource for scientists performing genetics work on ants, available at <http://antgenomes.org/>

I chair the Web Committee for the School of Biology and Chemistry, Queen Mary University London.

### Teaching:

Some materials at <http://yannick.poulet.org/teaching>

Currently: At Queen Mary University of London, I lecture and lead practicals in Evolution (1st year), Research Methods and Communication (3rd year), & Statistics for the BioSciences (Masters).

Past: I have regularly taught introductions to bioinformatics, genomics and statistics. For example the Swiss Institute of Bioinformatics asked me in 2012 to lead a 5-day series of practicals on genomics for emerging model organisms.

Staff: currently Anurag Priyam (Programmer). A PhD student is starting in August 2013.

### Member of PhD committees of:

Sebastian Bailey, Steven Dodsworth

### Previously supervised Masters students:

Séverine Buechel, Paul Siguier, Hugo Darras.

### Previously supervised engineers and technicians:

Bioinformaticians: Oksana Riba-Grognuz, Frédéric Ricci, Maria Bota.

Wet lab: Christine LaMendola, Céline Stoffel, Natalie Tzaud.