

Yannick Wurm

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I am a doctoral student in Laurent Keller's laboratory at Université de Lausanne. We work on the molecular basis of the evolution of social behavior in ants. My prior schooling in bioinformatics and modeling makes me a key interdisciplinary lab member. My approach involves behavioral studies, molecular assays and bioinformatics analyses.

I have both French and German citizenship, as well as a Swiss "B" permit. Born 1980.

Erdős Number: 6

Residence & Languages

Growing up in a multi-cultural family, I spent extended periods (more than 4 years) in Germany, the United States, and France. Additionally, I spent 8 months in Canada and have been in Switzerland since 2005.

I fluently speak and write in English, French and German.

Education

Since 2006: Member of [Swiss Institute for Bioinformatics PhD Training Network](#)

Since 2005: Doctoral studies on the evolution of social behavior in ants. Expected graduation: late 2009.

2001-2004: French engineering diploma (masters-equivalent): Specialization in [Bioinformatics and Modeling](#) at the National Institute of Applied Sciences, INSA de Lyon, in partnership with Université Claude-Bernard Lyon 1.

1999-2001: General engineering preparatory cycle at INSA de Lyon (mainly mathematics & physics...)

1999: Graduation from French secondary school (Lycée): scientific baccalaureate obtained with honors: *Mention Bien*. (Baccalaureat Scientifique, SVT option Mathématiques)

Awards & Grants

2009: Research grant: Ultra-high throughput sequencing for discovery and characterization of viral genomes in fire ants. With E Zdobnov, L Keller, D Shoemaker, S Valles (100,000 CHF).

2008: Travel grant from the Fondation du 450 anniversaire de l'UNIL to attend the [International Congress of Entomology](#) (2500 CHF)

2008: Travel grant from the [Swiss Zoological Society](#) to attend the [International Congress of Entomology](#) (1000 CHF)

2008: [Ecogenics](#) innovation award at [Biology08](#)

2004: Grant from Région Rhône-Alpes for semester at McGill, Montreal (2280 euros)

2004: Travel support from Office Franco-Québécois de la Jeunesse for semester at McGill, Montreal (~500 euros)

2002: Student Developer scholarship to attend Apple Computer's WorldWide Developer Conference in California (\$1600 value).

Publications

Wurm Y, Wang J, Keller L (submitted) **Changes in reproductive roles are associated with widespread changes in gene expression in fire ants**

Wurm Y, Uva P, Ricci F, Wang J, Jemielity S, Iseli C, Falquet L, Keller L (2009) **Fourmidable: a database for ant genomics**. *BMC Genomics* 10:5 and <http://fourmidable.unil.ch>

Wurm, Y, Wang, J, Keller, L (2007) **Behavioral genomics. A, Bee, C, G, T**. *Current Biology* 17, R51-R53.

Wang, J, Jemielity, S, Uva, P, Wurm, Y, Gräff, J, Keller, L (2007) **An annotated cDNA library and microarray for large-scale gene-expression studies in the ant *Solenopsis invicta***. *Genome Biology* 8:R9

Society Membership

The Society for the Study of Evolution

Suisse Shotokan (traditional karate)

Swiss Zoological Society

Toastmasters International

Presentations

Metamorphosis and gene expression in fire ants Wurm Y, Wang J, Nicolas M, Keller L:

[European Society for Evolutionary Biology](#), 2009 (oral communication)

The past, present and future of ant genomics, Tempe Arizona, Jan 2009 (oral communication)

Genomic response to social restructuring of fire ant colonies Wurm Y, Wang J, Ross KG, Keller L:

[International Congress of Entomology](#), 2008 (oral communication).

[Biology08](#), 2008 (oral communication).

[Regulation and Variability of Animal Genome Expression](#), 2007 (oral communication).

[Integrative Post Genomics](#), 2007 (oral communication).

[European Society for Evolutionary Biology](#), 2007 (oral communication)

Fire ant Genomics, Wurm Y, Wang J, Jemielity S, Keller L:

[Biology07](#), 2007 (poster presentation).

[International Union for the Study of Social Insects](#), 2006 (oral communication)

Presented by others:

Wang J, Wurm Y, Harshman K, Xenarios I, Keller L. **Pilot 1x short-read sequencing of *Solenopsis invicta* using the Illumina Platform** (2009). The past, present and future of ant genomics, Tempe, AZ

Nicolas M, Wang J, Wurm Y, LaMendola C, Keller L, **Developmental time course in fire ants** (2008) [Society for Molecular Biology and Evolution](#)

Wang J, Nicolas M, Wurm Y, Keller L, **Developmental time course (of metamorphosis) in fire ants** (2008) [International Union for the Study of Social Insects European Meeting](#)

Wang J, Jemielity S, Uva P, Wurm Y, Keller L (2006) **Genomic analysis of ant colony behavior**. [International Union for the Study of Social Insects](#).

Zerlin M, Greiffenberg L, Wurm Y, Winkler I, Kreusel D, Toemoe S, Ballabas L, Martin J (2003) **Cryostock: A Cell Storage Application**. [European Society for Animal Cell Culture](#)

Work Experience

Since 2006: Teaching Assistant at Université de Lausanne. Developing and teaching undergraduate statistics and bioinformatics courses.

Since 2005: Doctoral studies in Laurent Keller's laboratory in Lausanne, Switzerland.

Feb. to July 2004: 6 month internship in [Richard Roy's laboratory](#) at McGill. I contributed to several projects, carrying out **research on the model organism *Caenorhabditis elegans* using molecular biology and genetics** techniques.

Sept. 2003 to Jan. 2004: Autonomous design and development of a **cross-platform modeling framework and user-centric application** based on ordinary differential equations. Supervised by [Nicolas Zinovieff](#).

Since 2003: Webmaster for <http://www.danielefraboulet.com>, a French watercolor artist.

2003-2007: Webmaster for <http://www.excellgene.com>, a Swiss biotech startup.

2002-2003: Website project leader for the biochemistry department, <http://biosciences.insa-lyon.fr>.

2002-2003: A total of 12 days with **Apple Computer France**, including demonstrations of iPod, software development and harnessing UNIX aspects of Mac OS X.

Summer 2001: Work student at **Aventis Pharma in Hoechst, Germany** My role was to evaluate Biocrystal's Opticell cell culture receptacle's potential for use in an automated laboratory. Additionally, I contributed towards the specification, human-interface design and testing of Cryostock, an application for managing stocks of biological samples.

Summer 2000: Work Student at **Astrazeneca in Södertälje, Sweden**. Transfer of paper database contents into electronic databases; laboratory work including preparation of bioreactors for sterilization and inoculation; data acquisition on sets of 1.5mL samples (glucose, dextrose, pH...).

July 2000: Factory worker at Carnaud MetalBox, a Crown Cork & Seal company, in Vourles, France.

July 1998: Factory worker at Sägewerk Linz, a sawmill in Oberzell, Germany.

July 1996: Web page development and html instruction for Dr. Robert Kingston's Laboratory at the department of Molecular Biology, Harvard/MGH in Boston, USA.

Undergraduate Projects:

2003: Development of a **tool for simulation of phylogenetic trees using a Hidden Markov Model**. Supervised by Dr. Christian Gautier, Université Lyon1.

2002-2003: Establishment of a **model of gene regulation centering on control of genomic superhelicity in *Escherichia coli***. Supervised by Drs. Hidde de Jong at Helix INRIA Grenoble, Johannes Geiselman at Université Fourier Grenoble and Hubert Charles at BFII, Inserm/INSA de Lyon.

2002: Design and prototype of a **tool for visualization analysis of transcriptome data**. Supervised by Dr. Guillaume Beslon, PRISMA, INSA de Lyon.

2002-2003: **Simulation of a dynamic population system** based on feed-forward neural network and a genetic algorithm - <http://bebetes.sourceforge.net>. Supervised by Dr. Guillaume Beslon, PRISMA, INSA de Lyon.

2000-2001: Project leader for the conception and construction of a muscle-powered vehicle for racing on a circuit that includes a 30x70cm tunnel.