

Marco Fondi – University of Florence

Personal information

Name and Surname: Marco Fondi

Born in Pistoia, Italy, 9 Settembre 1980

Home address: Via de' Vanni 9a, 50142 Firenze (FI)

Current Affiliation :

Florence Computational Biology Group (ComBo) *and*

Lab. of Microbial and Molecular Evolution (LEMM)

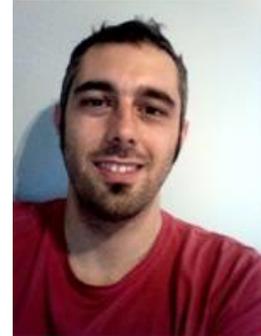
Department of Biology, University of Florence, Via Madonna del Piano 6, 50143 Sesto F.no,
Firenze Italy

Present position: Post-doc

Mobile: +39-328-9573014

E-mail: marco.fondi@unifi.it – mrcfnd@gmail.com

Web-page: <http://www.dblemm.unifi.it/CMpro-v-p-1.html>



Education and positions:

April 2014 - present, Post-doc at the Dep. Of Biology, University of Florence, Italy

June 2012 – January 2014, FEMS research fellow, Computer Lab Cambridge University, UK (Supervisor: Prof. Pietro Liò).

January 2012 – June 2012, Visiting post-doc at the Bioinformatics and Molecular Evolution Unit, Department of Biology, National University of Ireland Maynooth, Ireland (Supervisor: Prof. James McInerney).

January 2011 – December 2011, Research Fellow (supported by Fondazione Adriano Buzzati Traverso), Dep. Of Biology, University of Florence, Italy

March 2010-December 2010, Post-doc at the Dep. Of Biology, University of Florence, Italy

2007-2009, PhD student at the Dep. Of Biology, University of Florence, Italy. Area of the PhD program: Genetics, Microbiology and Bioinformatics

2006-20017: Research Fellow (supported by PNRA, Piano Nazionale di Ricerca in Antartide), Dep. Of Biology, University of Florence, Italy

2000-2005, Master degree in Biology, University of Florence

Research area

My overall research area includes microbial pan-genomics, microbial evolution, metabolic modeling. My research activity is mainly devoted to the exploitation of computational biology for the understanding of the basic processes underlying the behaviour of biological systems, including the evolutionary dynamics that are responsible for the shaping of their genomes. Also the design and the implementation of algorithms for the analysis of massive sequence data (see <http://enly.sourceforge.net/> and <http://combo.dbe.unifi.it/medusa>) is a central theme in my research. I am currently involved into several genome(s) sequencing projects focused on microorganisms of biotechnological and clinical relevance. (e.g. *Acinetobacter venetianus* and *Burkholderia* representatives).

Furthermore, the possibility to integrate different sources of biological information to unravel the behavior of major biological systems/processes also occupies a central position in my present research area. By integrating "-omics" data with methodologies for modeling biological systems, I aim to developing and implementing computational and statistical models to elucidate the biosynthetic circuits responsible for the production of biological/biotechnological key molecules (including antibiotics, bacterial toxins, secondary metabolites in general). In this context, the use of constraint-based metabolic modelling techniques has gained a fundamental position in my present and future research activity.

Technical skills

- **Programming Language:** Perl, Bash, R (basics), Matlab (basics)
- **Operating systems:** Linux – MacOSX - Windows
- **Computational analysis of biological sequences:** MUST Package, BLAST, FastA, SeaView, ClustalW/X, Muscle, T-Coffee, MAFFT, HMMer, Mummer, Mauve Package

- **Phylogenetic methods:** PAUP*, PHYLIP, Tree-Puzzle, PhyML, RAxML, MrBayes, Mega5
- **Assembly software for whole genome sequencing data:** Velvet, Abyss, AllPaths, Mira, SOAP, SolexaQA
- **SNPs calling softwares:** BWA, SAMtools package, Varscan, MAQ, Bowtie
- **Data-mining of biological data:** *Ad hoc* Perl, AWK e Bash pipelines
- **Internet BioInformatics resource:** ftp, ssh and WWW in DOS/MS Windows, UNIX/Linux.
- **Statistical computing:** R package, Matlab
- **Metabolic Modelling:** Constraints-based modelling – Flux Balance Analysis – Metabolic reconstruction

Research activity

Publications (2007-present)

<https://scholar.google.com/citations?user=R7cSmlIAAAAJ&hl=en>

Fellowships and Grants

2012 - FEMS Advanced Research Fellowship 2012, on Genome-scale functional modelling of Antarctic bacteria: biotechnological potentials of extreme environment adapted metabolism. Supervisor: Prof. Pietro Liò, Computer Lab, University of Cambridge UK.

2012 - Short Term Travel Fellowship, Science Foundation of Ireland Incoming STTF Programme, in collaboration with the Bioinformatics and Molecular Evolution Unit, Department of Biology, National University of Ireland Maynooth, Ireland.

2013 – PNRA project call 2013. Project tile: Exploiting Antarctica biotechnological potential: metabolic modelling for optimization of bioactive molecules biosynthesis

from Antarctic bacteria. **Financing Institution:** Ministero dell'Istruzione, dell'Università e della Ricerca, Programma Nazionale di Ricerche in Antartide, Call 2013. Budget: 90.000 €

Visiting scientist periods

1. **November 22 2008 – December 22 2008:** Visiting student at BMGE, **Institut Pasteur (Paris, France)**. Supervisor: Dr. Simonetta Gribaldo.
2. **April 6-13 2010–:** Visiting student at ITB-CNR Milan, Italy. Supervisor: Dr. Gianluca De Bellis
3. **October 31- November 5 2010–:** Visiting researcher at University of Helsinki, Department of Applied Chemistry and Microbiology, Division of Microbiology. Supervisor: Prof Marko Virta.
4. **January 2012 – June 2012.** Visiting post-doc at the Bioinformatics and Molecular Evolution Unit, Department of Biology, National University of Ireland Maynooth, Ireland (Supervisor: Prof. James McInerney).

Societies

- Membr of the Italian Society of Evolutionary Biology (SIBE).
- Membr of the Italian Society of Bioinformatics (BITS).
- Membr of the Italian Society of General Microbiology and Microbial Biotechnologies (SIMGBM).

Awards

1. **SIMGBM- Franco Tatò Prize 2010** for the best PhD thesis in General Microbiology.

2. **Young Scientist Grant** (sponsored by **FEMS** and **ESCMID**) for *Acinetobacter 2010*, 8th International Symposium on the Biology of Acinetobacter Rome 1 – 3 Settembre 2010
3. **Firenze University Press 2010 prize, for the best PhD thesis in the Scientific Area**
5. **Young Scientist Grant** (sponsored by **FEMS** and **ESCMID**) per Marine Microbiology & Biotechnology: Biodiscovery, Biodiversity and Bioremediation 2012 , Cork (Ireland) 14-17 Novembre 2012
6. **Young Scientist Grant** (sponsored by **FEMS**) per partecipazione a FEMS2013, Liepzig (Germany) 21-25 Luglio 2013.

Abstracts for national and international conferences

See complete list at <http://www.dblemm.unifi.it/CMpro-v-p-208.html>

Florence, February 25th 2014

Marco Fondi

