

Luca Freschi

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Education

- Ph.D. in Biology, Université Laval (Canada), 2009-2014.
- M.Sc. in Biomolecular Sciences and Technologies, University of Pisa (Italy), 2007-2008.
- B.Sc. in Biology (curriculum: molecular biology - cell biology), University of Pisa, 2003-2007.

Research and training

- Post-doctoral fellow (topic: microbial genomics), Laval University, 2014-2016 (Prof. Roger C. Levesque)
- Research assistant (Calcul Québec), Laval University, 2014 -- Assignments: user support, software installation and testing with a particular emphasis on bioinformatic softwares that run on high-performance computing (GPU and CPU) clusters
- Internship in proteomics and mass spectrometry, Harvard University, 2013 (Prof. Steven Gygi).
- Cold Spring Harbor Laboratory course "Yeast genetics and genomics", Cold Spring Harbor (USA), 2012.
- Teaching assistant (Biostatistics, Prof. Isabelle Lavoie), Laval University, 2011 – Assignments: teaching during practical sessions, exam correction
- Bernhard-Rensch Summer School on "Genome evolution", Frauenchiemsee (Germany), 2010.
- Postgraduate research (topic: computer simulation of signaling pathways), University of Pisa, 2008-2009 (Prof. R. Marangoni).
- Undergraduate research (topic: gene families evolution), University of Pisa, 2006-2008 (Prof. R. Marangoni).
- Training stage in Biology, University of Trieste (Italy), 2003.

Fellowships and awards

- ASM travel grant, American Society for Microbiology (ASM), 2015
- Selected student presentation, 14th annual symposium PROTEO, Université Laval, Québec, 2014
- Second (best talks) and third prizes (poster contest), Research day - Faculty of Science and Engineering, Université Laval, Québec, 2014
- Richard Bernard fellowship, 2013
- First prize in the poster contest, 12th annual symposium PROTEO, Université de Sherbrooke, Sherbrooke, 2012
- Doctoral research scholarship - Merit Scholarship Program for Foreign Students, FQRNT, 2012
- First prize (best talk), Biology department colloquium, Université Laval, Québec, 2011 and 2012
- First prize in poster contest, 1st IBIS student day, Université Laval, Québec, 2011
- Travel grant for young researchers, Bioinformatics Italian Society (BITS), 2011
- First prize in the poster contest, 11th annual symposium PROTEO, Université Laval, Québec, 2011
- Keystone Symposia Future of Science Fund scholarship, 2011

- Second prize in the poster contest, 10th annual symposium PROTEO, Concordia University, Montréal, 2010
- PROTEO fellowship, 2009-2010
- Top mark with honours (B.Sc. and M.Sc.)

Publications

Articles

1. Donald Stewart, Reza Zahiri, Abdelmadjid Djoumad, [Luca Freschi](#), Josyane Lamarche *et al.* 2016, A Multi-Species TaqMan PCR Assay for the Identification of Asian Gypsy Moths (*Lymantria* spp.) and Other Invasive Lymantriines of Biosecurity Concern to North America, PLoS ONE 11(8): e0160878
2. [Freschi L.](#), Jeukens J., Kukavica-Ibrulj I., Boyle B., Dupont M.J. *et al.* 2015, Clinical utilization of genomics data produced by the international *Pseudomonas aeruginosa* consortium, Frontiers in microbiology 6
3. Wingard Thrane S., Taylor V. L., [Freschi L.](#), Kukavica-Ibrulj I., Boyle B. *et al.* 2015, The Widespread Multidrug-Resistant Serotype O12 *Pseudomonas aeruginosa* Clone Emerged through Concomitant Horizontal Transfer of Serotype Antigen and Antibiotic Resistance Gene Clusters, mBio 6 (5), e01396-15
4. Jeukens J., Kukavica-Ibrulj I., [Freschi L.](#), Jabaji S. and Levesque R.C. 2015, Draft genome sequences of two lipopeptide-producing strains of *Bacillus methylotrophicus*, Genome announcements 3 (5), e01176-15
5. Jeukens J., [Freschi L.](#), Kukavica-Ibrulj I., Nguyen D. and Levesque R.C. 2015, Draft genome sequence of triclosan-resistant cystic fibrosis isolate *Achromobacter xylosoxidans* CF304, Genome announcements 3 (4), e00865-15
6. Landry C.R., [Freschi L.](#), Zarin T., Moses A.M. 2014, Turnover of protein phosphorylation evolving under stabilizing selection, Frontiers in genetics 5
7. [Freschi L.](#), Osseni M., Landry C.R. 2014, Functional Divergence and Evolutionary Turnover in Mammalian Phosphoproteomes, PLoS genetics 10 (1), e1004062.
8. Cangelosi D., Fabbiano S., Felicioli C., [Freschi L.](#), Marangoni R 2013, Quick Direct-method Controlled (QDC): a simulator of metabolic experiments, EMBnet. journal 19 (1), 39-42.
9. Diss G., Filteau M., [Freschi L.](#), Leducq J.B., Rochette S., Torres-Quiroz F., Landry C.R. 2013, Integrative avenues for exploring the dynamics and evolution of protein interaction networks, Current opinion in biotechnology 24 (4), 775-783.
10. [Freschi L.](#), Torres-Quiroz F., Dubé A. and Landry C.R. 2013, qPCA: a quantitative tool to study the perturbation of protein-protein interactions in living cells, Molecular Biosystems 9(1):36-43.
11. Diss G., [Freschi L.](#), Landry C. R. 2012, Where do phosphosites come from and where do they go after gene duplication? Journal of Evolutionary Biology - special issue: Molecular Evolutionary Routes that Lead to Innovations 2012: 843167.
12. Lee S., Thébault P., [Freschi L.](#), Beaufils S., Blundell T.L., Landry C.R., Bolanos-Garcia V.M. and Elowe S. 2011. Characterization of the Spindle Checkpoint Kinase Mps1 Reveals a Domain with Functional and Structural Similarities to the Tetratricopeptide Repeat Motifs of the Bub1 and BubR1 Checkpoint Kinases, The Journal of Biological Chemistry 287(8):5988-6001.
13. [Freschi L.](#), Courcelles M., Thibault P., Michnick S.W. and Landry C.R. 2011. Phosphorylation network rewiring by gene duplication, Molecular Systems Biology. 7:504.
14. Di Poi C., Diss G. and [Freschi L.](#) 2011. Biodiversity matters in a changing world, Biology Letters 7(1):4-6.

Oral communications

1. [Freschi L.](#), Vincent A., Jukens J., Kukavica-Ibrulj I. *et al.*, The *Pseudomonas aeruginosa* Core Genome: A Key to Understand *Pseudomonas* Evolution, Diversity and Pathogenicity, Congrès Québécois de Santé Respiratoire, Lévis, November 11-12, 2015

2. [Freschi L.](#), Djoumad A. , Steward D. , Béliveau C. , Lamarche J. *et al.*, Genomic analyses reveal new insights on Gypsy Moth evolution and allow the detection of alien sub-species, Société d'entomologie du Québec and Entomological Society of Canada 2015 Joint Annual Meeting, Montreal, November 8-11, 2015
3. [Freschi L.](#), Vincent A., Jukens J., Kukavica-Ibrulj I. *et al.*, The *Pseudomonas aeruginosa* Core Genome: A Key to Understand *Pseudomonas* Evolution, Diversity and Pathogenicity, ASM meeting on *Pseudomonas*, Washington D.C., September 8-12, 2015
4. [Freschi L.](#) and Landry C.R. Of Mice and Men: Evolution and Cross-Talk of Post-Translational Modifications, 14th PROTEO annual symposium, Quebec City, May 9, 2014
5. [Freschi L.](#), Osseni M. and Landry C.R., Mickey mouse and human diseases, Research day - Faculty of Science and Engineering (Université Laval), Quebec City, March 12, 2014
6. [Freschi L.](#), Torres-Quiroz F., Dubé A. and Landry C.R., qPCA: une technique pour étudier le remodelage des interactomes protéiques, Biology department colloquium (Université Laval), Québec City, February 1, 2012
7. [Freschi L.](#), Courcelles M., Thibault P., Michnick S.W. and Landry C.R., Regulatory network rewiring by gene duplication, BITS (8th annual meeting of the Bioinformatics Italian Society), Pisa, June 20-22, 2011
8. [Freschi L.](#), Courcelles M., Thibault P., Michnick S.W. and Landry C.R., Remodelage des réseaux de régulation après duplication génique, Biology department colloquium (Université Laval), Québec City, February 2, 2011
9. [Freschi L.](#), Courcelles M., Thibault P., Michnick S.W. and Landry C.R., Regulatory network rewiring by gene duplication, Keystone Symposia (The Evolution of Protein Phosphorylation), Keystone, January 23-28, 2011
10. [Freschi L.](#), Felicioli C., Cangelosi D., Cercignani G., Chiarugi D., Deiana N., Fabbiano S., Fulgentini L., Lucia S., Marangoni R., Perception responses and behavioural ecology: *Halobacterium salinarum* as a case study, 5th annual congress of the Canadian Society for Ecology and Evolution, Québec City, May 9-12, 2010

Posters

1. [Freschi L.](#), Djoumad A., Steward D, Béliveau C, Lamarche J, Kukavica-Ibrulj I., Cusson M., Hamelin R. and Levesque R.C., Using genomics to understand the Gypsy Moth evolution and protect Canada from its invasive sub-species, IBIS student day, Quebec City, August 31, 2015
2. [Freschi L.](#), Osseni M. and Landry C.R., Protein phosphorylation and species divergence: the missing link, 13th annual symposium PROTEO, Laval, May 17, 2013
3. [Freschi L.](#), Torres-Quiroz F., Dubé A. and Landry C.R., qPCA: A quantitative assay for the measurement of condition-dependent protein-protein interactions, ICSB (International Conference on Systems Biology), Toronto, August 19-23, 2012
4. [Freschi L.](#), Diss G. and Landry C.R., Where do phosphosites come from and where do they go after gene duplication?, 12th annual symposium PROTEO, Sherbrooke, May 18, 2012
5. [Freschi L.](#), Courcelles M., Thibault P., Michnick S.W. and Landry C.R., Regulatory network rewiring by gene duplication, Keystone Symposia (The Evolution of Protein Phosphorylation), Keystone, January 23-28, 2011
6. Cangelosi D., Cercignani G., Chiarugi D., Deiana N., Fabbiano S., Felicioli C., [Freschi L.](#), Fulgentini L., Lucia S., Marangoni R., A Systems Biology Approach to Qualitative Models Validation in Signaling Pathways, ICSB (International Conference on Systems Biology), Edinburgh, October 10-16, 2010
7. [Freschi L.](#), Cangelosi D., Fabbiano S., Felicioli C. and Marangoni R., QDC: a stochastic simulator to study the dynamics of signaling pathways, 10th annual symposium PROTEO, Montréal, May 14, 2010
8. Cangelosi D., Cercignani G., Chiarugi D., Felicioli C., [Freschi L.](#), Fulgentini L., Marangoni R., Photoperception in *Halobacterium salinarum*: a systems biology approach, ECCB (European Conference on Computational Biology), Cagliari, 22-26 September, 2008
9. Marangoni R., Santillo S., Felicioli C., [Freschi L.](#), Cotugno A., Musio C., A novel bioinformatic approach to study the molecular evolution of animal photoreceptor proteins, XIX CONGRESSO NAZIONALE SIBPA (Italian Society of Pure and Applied Biophysics), Rome, September 17-20, 2008
10. Felicioli C., [Freschi L.](#), Marangoni R., A segment-based description of gene families and some studies on possible evolutionary mechanisms, NETTAB (Network Tools and Applications in Biology), Pisa, June 12-15, 2007

Personal skills and competences

Languages

- Italian (Mother tongue), English (Advanced), French (Advanced), Spanish (Intermediate), German (Beginner), Persian (Beginner)

Organizational skills

- During my studies I worked both in a team and independently.
- I often worked in interdisciplinary contexts (with Biologists, Engineers, Computer Scientists and Mathematicians and Medical Doctors).
- I have been member of the organizing committee of several scientific meetings (e.g. "Network Tools and Applications in Biology 2007", "Congrès 2010 de la Société Canadienne d'écologie et d'évolution") and student initiatives (e.g. "BioconneXion 2011", "Journée étudiante IBIS" 2011-2014).
- I have also organized several series of seminars on bioinformatics for my department (Bioinfo@IBIS), 2010-2012

Information Technology skills and competences

- European Computer Driving Licence (ECDL) full
- Programming Languages: Perl (Advanced), R (Advanced), Python (Advanced), Php (Intermediate), C++ (Basic usage), Java (Basic usage)
- Other: Matlab, Maple, Latex, XML, SQLite, ...

Other interests

- In my spare time I do a lot of activities: photography, reading, practicing sports, programming, travelling, visiting museums and learning foreign languages