

# GONNET Mathieu

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## Microbiologist

Genomics, Bioinformatics, Ecology



### EDUCATION

- 2003-2008 Ph.D thesis in Microbiology  
*Université Bretagne Occidentale Brest, France*
- 2002-2003 Master degree in Genomics  
*Université Paris XI Paris, France*

### MOC

- 2014 Data Analysis for Genomics (8 weeks - 48h)  
*Massachusset Institute of Technology, online course platform edX*
- Statistique avec R (6 weeks - 42h)  
*Université Paris-Sud, via France Université Numérique*
- 2013 Computing Molecular Evolution (6 weeks -56h)  
*Technical University of Denmark*
- Bioinformatics Algorithms (14 weeks - 140h)  
*University of California San Diego, via coursera*
- Computer Science and programming (14 weeks - 168h)  
*Massachussets Institute of Technology, via edX*

### RESEARCH

- 06.2010 - 02.2013 Postdoctoral fellow, **population genomics** « Whole genome sequencing and exploration of genomic diversity of 63 *Borrelia burgdorferi* sl isolates »  
*EpiA, UR346 INRA Clermont-Ferrand - France. Supervisor: G. Vourc'h & X. Bailly*
- 10.2003 - 10.2008 Ph.D in microbiology, **microbial genomics** « Abundance and diversity of genetic elements of Thermococcales, an hyperthermophilic archaeal order »  
*LM2E, UMR6197 IFREMER/UBO/CNRS Brest - France. Supervisor: D.Prieur*
- 01.2003 - 07.2003 Master training course, **genomics** « Transposition study of polymorphic Tc1 transposons in *C. elegans* »  
*CGMC, Université Paris XI - France. Supervisor: L. Segalat*
- 11.2002 - 12.2002 Master training course, **genomics** « RNAi of mitochondrial genes of *C. elegans* »  
*IGM, Université Paris XI. Supervisor: E. Culetto*
- 01.2002 - 03.2002 Master training course, **bioinformatics** « Comparative analysis of sequence similarity and structure deviation »  
*Faculté de Médecine de Tours - France. Supervisor: T. Moreau*

### TEACHING

- 2007-2008 **Associate professor** - ESIAB Ecole Supérieure d'ingénieurs en Agroalimentaire  
160H Databases (MySQL)  
32H Statistics
- 2006-2007 **Associate professor** - Université Bretagne Occidentale  
60H Molecular biology  
30H Cellular biology  
24H Bioinformatics  
46H Microbiology  
16H Bases moléculaires de la biologie L1  
06H Tutored projects
- 2005-2006 **Part-time lecturer** - Université Bretagne Occidentale  
06h Microbiology  
12h Molecular biology  
12h Bioinformatics

## PUBLICATIONS

- 2014 JACQUOT M., GONNET M., FERQUEL E., ABRIAL D., GASQUI P. SERTOOUR N., DE GOER J., VOUREC'H G., BAILLY X.  
**Comparative population genomics of the *Borrelia burgdorferi* species complex reveals high degree of genetic isolation among species and underscores benefits and constraints to studying intra-specific epidemiological processes.**  
*Plos One*, 9(4):e94384, doi:10.1371
- 2013 KUPROVIC M., GONNET M., HANIA WB., FORTERRE P., ERAUSO G.  
**Insights into dynamics of mobile genetic elements in hyperthermophilic environments from five new *Thermococcus* plasmids.**  
*PLoS One*, 8(1):e49044, doi: 10.371
- 2011 GONNET M., ERAUSO G., PRIEUR D., LE ROMANCER M.  
**pAMT11, a novel plasmid isolated from a *Thermococcus* sp. strain closely related to the virus-like integrated element TKV1 of *Thermococcus kodakaraensis* genome.**  
*Research in microbiology*, 162(2):132-43 Elsevier Ed, doi:10.1016
- 2009 ROUSSEAU C., GONNET M., LE ROMANCER M., NICOLAS J.  
**CRISPRI: a CRISPR interactive database**  
*Bioinformatics*, vol 25 n°24, p. 3317-3318, Oxford University Press, DOI:10.1093
- 2005 PRIEUR D., ERAUSO G., FLAMENT D., GAILLARD M., GESLIN C., GONNET M., LE ROMANCER M., FORTERRE P.  
**Deep Sea Thermococcales and their genetic elements: plasmids and viruses.**  
*Methods in Microbiology*, vol 35, Elsevier Ed, doi:10.1016

## COMMUNICATIONS

- 2013 **8ème Rencontres du REID Réseau Ecologie et Interactions Durables**  
*Sciences Agro, Bordeaux, France, 4-6 february 2013*  
GONNET M., PYTHON M., FERQUEL E., CLAUDE A., GASQUI P., ABRIAL D., DE GOER J., VOUREC'H G., BAILLY X.  
Population genomics of *Borrelia burgdorferi sensu lato* isolates
- 2011 **XIth Animal Health days**  
*Azureva, Fréjus, France, 22-25 may 2011*  
GONNET M., ABRIAL D., FERQUEL E., GASQUI P., SERTOOUR N., DE GOER J., VOUREC'H G., BAILLY X.  
Population genomics of *Borrelia burgdorferi sensu lato* isolates
- 2008 **Genomics and Ecology of Aquatic Viruses**  
*REX Marine Genomics, Banyuls-sur-mer, France, 11-13 february 2008*  
GONNET M., ERAUSO G., PRIEUR D., LE ROMANCER M.  
Exploring the diversity of mobile genetic elements of deep-sea Thermococcales  
**Extremophilic microorganisms : molecular adaptation & bionanotechnological**  
*Institute of Biology, Bucarest, Roumania, 18-19 september 2008*  
ERAUSO G., GONNET M., LE ROMANCER M., PRIEUR D.  
Diversity of plasmids from hyperthermophilic *Archaea*
- 2007 **Jacques Monod Conferences - Genomics**  
*Station biologique, Roscoff, France, 9-13 june 2007*  
GONNET M., ERAUSO G., PRIEUR D., LE ROMANCER M.  
Exploring the diversity of mobile genetic elements of deep-sea Thermococcales
- 2006 **International Marine Genomice conference 2006**  
*REX Marine Genomics, Sorrento, Italie, 28 oct - 1 nov 2006*  
GONNET M., ERAUSO G., LE ROMANCER M., PRIEUR D.  
Unexpected abundance and diversity of plasmids in deep-sea hyperthermophiles:  
a reservoir for novel gene families?  
**Plasmid biology 2006**  
*International Society of Plasmid Biology, Stanford Camp, Californie, 23-27 sept 2006*  
GONNET M., ERAUSO G., LE ROMANCER M., PRIEUR D.  
Unexpected abundance and diversity of plasmids in deep-sea hyperthermophiles:  
a reservoir for novel gene families?  
**6th International Congress on Extremophiles**  
*International Society of Extremophiles, Brest, France, 17-21 sept 2006*  
GONNET M., ERAUSO G., LE ROMANCER M., PRIEUR D.  
Abundance and diversity of plasmids in deep-sea hyperthermophiles: a reservoir for novel gene families?  
**11th International Symposium on Microbial Ecology**  
*International Society of Microbial Ecology, Vienne, Autriche, 20-25 august 2006*  
GONNET M., ERAUSO G., LE ROMANCER M., PRIEUR D.  
Comparative genomic of plasmids from *Thermococcales*
- 2005 **Thermophiles 2005**  
*Griffith University, Gold Coast, Australie, 18-22 september 2005*  
GONNET M., TOFFIN A., LE ROMANCER M., PRIEUR D., ERAUSO G.  
Comparative genomic of plasmids from *Thermococcales*  
**2<sup>ème</sup> Colloque d'Ecologie Microbienne**  
*Société Française de Microbiologie, Obernai, France, 9-12 may 2005*  
GONNET M., ERAUSO G., LE ROMANCER M., CHEVEREAU M., PRIEUR D.  
Génomique comparée de 4 plasmides de *Thermococcales*

## SKILLS

### *Microbiology*

Enrichment, isolation, characterization, fluorescence microscopy, optical tweezer  
Oxygen-free glove box cultures, Hyperbaric cultures (200 bars)  
Viral particule purification  
FISH

### *Molecular biology*

Shotgun DNA libraries creation: DNA extraction, nebulization, cloning  
Sequencing: Sangers, 454  
DNA labelling: P<sub>34</sub>, Cyanine fluorescent labelling  
Transcripts cartography: RNA extraction, inverse transcription, rt-qPCR, primer extention  
Hydridization: Northen, Southern, Western, microarray

### *Biochemistry*

Recombinant protein production  
Spectrometry: Spectrophotometry, Spectrofluorimetry, Mass spectrometry, RMN

### *Bioinformatics*

Assembly  
Annotation  
Comparative genomics  
Population genomics  
Phylogeny

### *Informatics*

Programming & scripting: python, perl, R, bash, php, css  
Databases: mySQL, noSQL  
Datamining & Machine Learning  
Geographic Information System  
Infographics (Adobe suite: Photoshop, Illustrator...)

## FIELD CAMPAIGNS

2012

OSCAR project: Brittany, 2 weeks: micro-mammal trapping, dissection, blood analysis and serology

2011

OSCAR project: Paris, 2 weeks: tick dragging

2010

OSCAR project: Paris, 2 weeks: tick dragging

2004

SweepVents: South Pacific, 4 weeks: invited by the JAMSTEC, japanese institute.  
oceanic cruise, 2000m bathyscaphe diving, samples collect, microbial enrichment, isolation, characterization

## REFEREES

Pr. ERAUSO Gaël  
Université de la méditerranée  
IRD UR 180 Microbiology et Biotehnologie des Environnements chauds  
163 avenue de Luminy 13288 Marseille cedex 9 - France  
+33(0)4.91.82.86.89      gael.erauso@univmed.fr

Pr FORTERRE Patrick  
Institut Pasteur - Université paris XI  
Unité de Biologie Moléculaire du Gène chez les Extrêmophiles  
25 rue Dr. Roux, 75724 Paris cedex 15 - France  
+33(0)1.45.68.87.91      forterre@pasteur.fr

Dr. BAILLY Xavier  
Unité d'Epidémiologie Animale  
INRA Clermont-Ferrand - Theix  
Route de Theix, 63122 Saint Genès Champanelle  
+33(0)4.73.62.46.95      xavier.bailly@clermont.inra.fr

## PERSONAL INFORMATIONS

French citizenship, 34 years, single, no child  
Languages: French (mother tongue), English (fluent), Italian (intermediate), German (beginner)  
Hobbies: Photography, Hiking, Boardgames, Science-fiction, Badminton, Open-source electronics 3/3