

Curriculum Vitae



Personal information

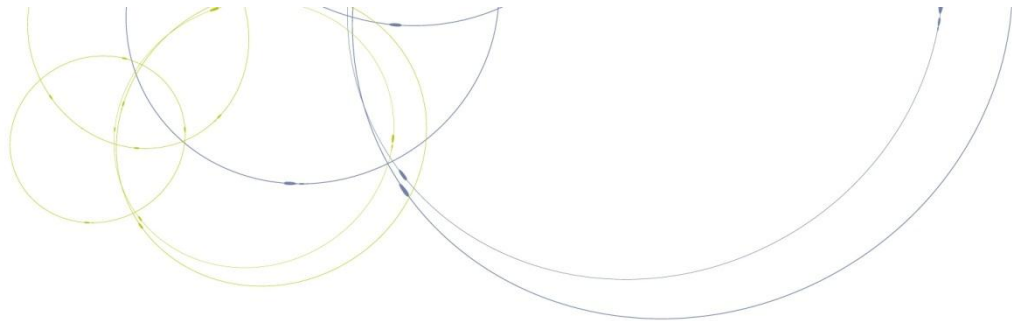
First name / Surname	Pierre Millard		
Address(es)	Rés. Les Jardins Occitans, bât. 4, 95 avenue Tolosane 31520 RAMONVILLE-ST-AGNE		
Telephone			
Mobile	+33 (0)617 454 354		
E-mail	pierre.millard@free.fr		
Nationality	French		
Date of birth	07-15-1985		
Gender	male		

Personal statement and statement of intent

I have always had an interest in science-based subjects, especially those related to biology. Thus I have started a Master Program in Biochemistry and Metabolomics, and after this was completed I started a PhD Thesis in microbiology and systems biology. During my PhD I have first developed and validated a complete methodology (including both experimental and computational aspects) for quantitative, system-level investigations of microbial metabolism. These approaches were used to investigate the role of a post-transcriptional regulator, the Csr system, in carbon nutrition and in the actual control of *E. coli* metabolism. We identified systemic properties of the operation of *E. coli* metabolism, and we showed that Csr controls carbon, energy and redox metabolism. Csr emerges as a key regulator for colonization and persistence of *E. coli* in the dynamic gut environment.

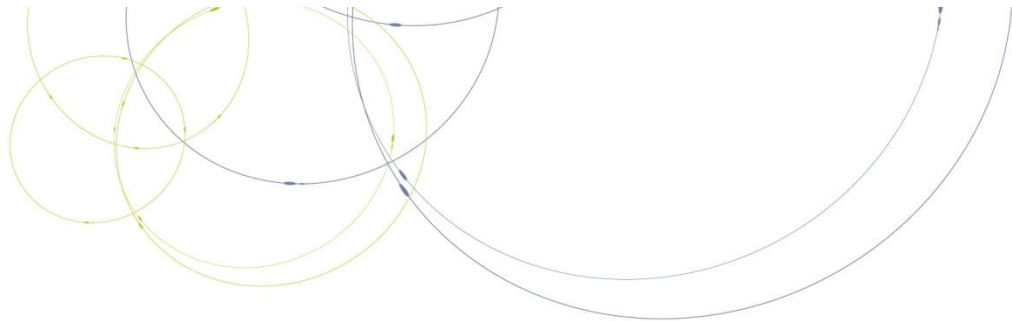
Now I want to extend my research interest into Systems biology, and in particular to understand how metabolic networks and regulatory networks cooperate in the biological response of the bacterium to environmental changes, with the ultimate goal to explain and predict how micro-organisms respond to their environment. I am convinced that working in the group of Prof. Westerhoff and Mendes will be a chance for me to further improve my knowledge in computational methods and modelling approaches for systems biology, in a stimulating and highly competitive place.

Through this mobility period, I will actively contribute to the growing field of predictive biology. It will also allow me to gain experience, knowledge and working customs different from those offered in my home country, and to develop an international network. This immersion in an unfamiliar culture will also be extremely enriching on a personal level. I will further improve my English, and I will grow personally and spiritually through this significant cultural experience. I believe that this will be of great value for my future research career.



Education and training

Location and dates	MetaSys team – LISBP – INSA Toulouse (from October 2009 to December 2012)
Title of qualification awarded	PhD in Microbiology and Systems biology
Principal subjects/occupational skills covered	<p><u>Research project:</u> "Role of the Csr system in carbon nutrition and in control of central metabolism of <i>Escherichia coli</i> K12 MG1655 and Nissle 1917"</p> <ul style="list-style-type: none"> • Development and validation of a complete methodology for quantitative, system-level investigations of <i>Escherichia coli</i> metabolism • Getting knowledge on the actual operation of <i>E. coli</i> metabolism • Comprehensive understanding on the role of the post-transcriptional regulator Csr in the control of <i>E. coli</i> metabolism <p><u>Skills:</u> microbial metabolism and physiology, high-throughput cultivation systems, ¹³C-metabolic flux analysis, metabolomics, liquid chromatography, mass spectrometry, nuclear magnetic resonance, programming (R, python) and computational methods, mathematical modelling, systems biology</p>
Name of Institute	INRA
Location and dates	MetaToul platform – LISBP – INSA Toulouse (from February 2009 to September 2009)
Title of qualification awarded	Master Degree in Structural biochemistry, Proteomics and Metabolomics
Principal subjects/occupational skills covered	<p><u>Research project:</u> "¹³C-metabolic flux analysis of <i>Escherichia coli</i> on fucose and gluconate"</p> <p><u>Skills:</u> microbial metabolism and physiology, functional analysis of metabolic systems by ¹³C-metabolic flux analysis</p>
Name of Institute	CNRS
Location and dates	MetaSys team – LISBP – INSA Toulouse (from June 2008 to August 2008)
Title of qualification awarded	None
Principal subjects/occupational skills covered	<p><u>Research project:</u> "Study of the methylglyoxal pathway in <i>Escherichia coli</i>: Identification of the <i>in vivo</i> topology of the central metabolic network on fucose"</p> <p><u>Skills:</u> microbial metabolism, liquid chromatography, enzymatic assays</p>
Name of Institute	INSA
Location and dates	Modified Nucleic Acids team – SPCMIB – Université Paul Sabatier Toulouse (from September 2007 to January 2008)
Title of qualification awarded	M.S. in Biochemistry and Molecular biology
Principal subjects/occupational skills covered	<p><u>Research project:</u> "Analysis of nucleic acid folding – stabilization of 'hairpin' structure"</p> <p><u>Skills:</u> synthesis of oligonucleotides, structural characterization of nucleic acid folding by circular dichroism and mass spectrometry</p>
Name of Institute	CNRS



Work experience

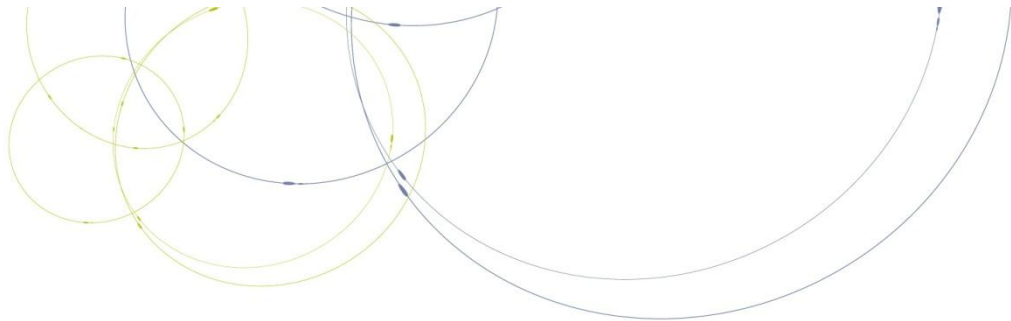
Location and dates	
Occupation or position held	
Main activities and responsibilities	
Name of employer	

Languages

Mother tongue(s)	French				
Other language(s)	Understanding		Speaking		Writing
<i>European level (*)</i>	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	B2	B2	B2
	(*) Common European Framework of Reference for Languages http://europass.cedefop.europa.eu/en/resources/european-language-levels-cefr				

Academic Record

Publications	<p>Accepted, in press and published articles / papers:</p> <p><u>Millard P.</u>, Letisse F., Sokol S., Portais J.C. (2012). IsoCor: Correcting MS data in isotope labeling experiments. <i>Bioinformatics</i>, 28(9):1294-1296.</p> <p>Sokol S., <u>Millard P.</u>, Portais J.C. (2012). influx_s: increasing numerical stability and precision for metabolic flux analysis in isotope labelling experiments. <i>Bioinformatics</i>, 28(5):687-693.</p> <p>Boissonnet A., Dupouy C., <u>Millard P.</u>, Durrieu M.P., Tarrat N., Escudier J.M. (2011). α,β-D-CNA featuring canonical and noncanonical α/β torsional angles behaviours within oligonucleotides. <i>New J. Chem</i>, 35, 1528-1530.</p> <p>Dupouy C., <u>Millard P.</u>, Boissonnet A., Escudier J.M. (2010). α,β-D-CNA preorganization of unpaired loop moiety stabilizes DNA hairpin. <i>Chem Commun</i>, 46(28):5142-5144.</p> <p>Submitted publications:</p> <p>Revelles O.*, <u>Millard P.*</u>, Nougayrède J.P., Oswald E., Létisse F., Portais J.C. The Carbon storage regulator system exerts a nutrient-specific control over central metabolism in <i>Escherichia coli</i> strain Nissle 1917. Submitted to Plos One.</p> <p>* First authors with equal contributions</p> <p><i>Four other publications are in preparation and are presented in my PhD manuscript.</i></p>
Presentations as invited speaker	
Books or books chapter author	
Participation in open calls for proposals as contributor or leader	
Graduate teaching as lecturer or training coordinator	Instructor of a graduate-level course titled "Functional analysis of metabolic systems by ¹³ C-metabolic flux analysis" (2012), Université Paul Sabatier (Toulouse)
Awards and prizes if any	Fellowship "Contrat Jeune Scientifique" (CJS program) from the INRA (MICA department) (2009)



Collaboration and Networking

Participation in collaborative projects funded by competitive programmes	Participation in the project Mexique CNRS – CONACYT (title: "Functional analysis of <i>Escherichia coli</i> strains modified by metabolic engineering for the production of aromatic compounds")
Partnerships or experience with industry	
University or post-graduate programme leader	
Graduate teaching as lecturer or training coordinator	
Membership of professional bodies and committees	Member of the CATI-G3M (INRA) steering committee (2011) Member of the French Network for Metabolomics and Fluxomics (RFMF), since 2010 Doctoral student representative of the SEVAB committee at the AERES national evaluation (2010)

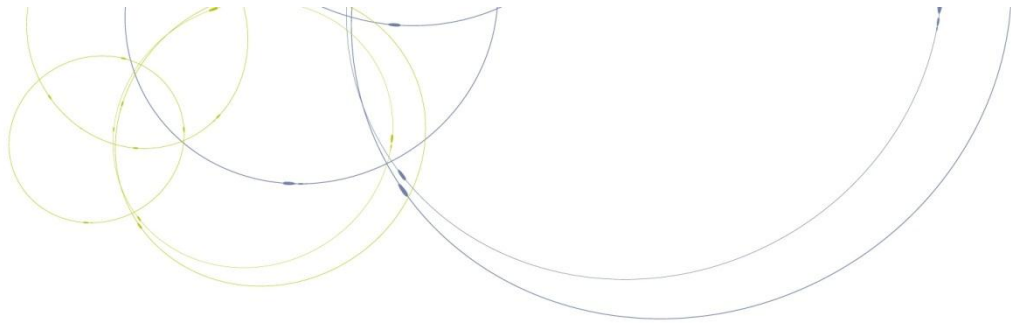
Research management, Technology transfer and Communication

Team management	
Technological platform management	
Consultancy for the public or private sector	

Other experience and skills relevant to the application	<p>Collaboration with Dr. Fabien Jourdan (Xenobiotics metabolism team, INRA-ENVT, Toulouse) for the development of MetMS, a software dedicated to identification of metabolites by mass spectrometry.</p> <p>Collaboration with Prof. Eric Oswald (INRA-ENVT, Toulouse) to identify functional metabolic features specific of <i>Escherichia coli</i> strains belonging to the B2 phylogenetic group.</p> <p>Collaboration with Dr. Andreas Tholey (Institute for Experimental Medicine, University of Kiel, Germany) to have a comprehensive understanding of metabolic adaptation of <i>Escherichia coli</i> during a nutrient shift (glucose → acetate).</p>
--	---

Scientific References

Full name	Jean-Charles Portais
Position	Director of the MetaSys team (LISBP, INSA-CNRS-INRA, Toulouse, France)
Institution	Université Paul Sabatier
Email address	portais@insa-toulouse.fr
Full name	Jean-Marc Escudier
Position	Research director in the team "Modified Nucleic Acids" (SPCMIB, Université de Toulouse, France)
Institution	CNRS
Email address	escudier@chimie.ups-tlse.fr



Full name	Nic Lindley
Position	Director of the Laboratoire d'Ingénierie des Systèmes Biologiques et des Procédés (LISBP, INSA-CNRS-INRA, Toulouse, France)
Institution	CNRS
Email address	lindley@insa-toulouse.fr