

Marc Joiret | Curriculum Vitae

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birthdate : July 6th,1967

*We are drowning in information and starving for knowledge.
-Rutherford D. Rogers*

Education

Université de Liège, ULiège, Faculté des Sciences Appliquées <i>Biomech Dept. GIGA In Silico Medicine PhD ongoing</i>	Liège, Belgium 2018 – 2022
Interuniversity Institute for Biostatistics and Bioinformatics <i>Master of Biostatistics, English taught Program</i> <i>Magna cum Laude (2nd Master: Great Distinction, 1st Master: Distinction)</i>	Hasselt, Belgium 2015–2017
Université de Liège, ULiège <i>Master of Science in Physics, specialized in Theoretical Physics</i> Great Distinction	Liège, Belgium 2002–2004
Université de Liège, ULiège <i>Bachelor of Science in Physics</i>	Liège, Belgium 1996–1998
Faculté universitaire des Sciences agronomiques, FUSAGx <i>ir. Bioengineer, Dipl. Engineer in Chemistry and AgroBio-Tech</i> Great Distinction	Gembloux, Belgium 1987–1990
Faculté universitaire des Sciences agronomiques, FUSAGx <i>Bachelor of Science in Agronomy</i> Distinction	Gembloux, Belgium 1985–1987
Faculté polytechnique de Mons, FPMS <i>Entrance Admission test to Civil Engineering, 4th out of 260 candidates</i>	Mons, Belgium July 1985

Masters Thesis

Title: *M. Sc. Biostatistics, specialization Bioinformatics. Thesis : The impact of correlated genetic markers on large-scale DNA-based gene-gene interaction studies, 2017.*

Supervisors: Prof. Kristel Van Steen (KUL & ULG) & Prof. Ziv Shkedy (UHasselt).

Description: Genome-wide association simulation study of a pair of interacting functional variants associated to human complex diseases taking into account linkage disequilibrium as confounding.

Title: *M. Sc. Phys. Thesis : The speed of gravity in General Relativity, 2004.*

Supervisors: Prof. Jean Surdej & Yves De Rop & Jean-René Cudell & André Burnel.

Description: My M. Sc. Phys. thesis was in Relativistic Gravitation and dealt with the gravitomagnetic effects of matter currents on the time delay of electromagnetic signals.

Title: *Bio-engineer Thesis : Modeling and Production of Poly- β -hydroxybutyric Acid (PHB) by *Alcaligenes eutrophus* in a pilot fermentor, 1990.*

Supervisors: Prof. Philippe Thonnart & Raphaëlle Rikir & Eric de Buyl.

Description: My Bio-engineer thesis took place at the Solvay Research Center in Neder-over-Heembeek and aimed at developing indirect (software) sensors for a microbiological process monitoring. PHB was used as source of enantiomerically pure monomers used in pharmacology as a cardiotoxic substance when esterified to the arginine amino acid.

Work Experience

Liège University | GIGA-R In Silico Medicine

Liège, Belgium

PhD student

2018–Present

Researcher & Biostatistician | Bioinformatician on FNRS-FWO EOS funded program.

Profs Liesbet Geris and Pierre Close are my PhD supervisors. My PhD research addresses the translational control of protein synthesis. *mRNA translation rate modeling with extended TASEP incorporating tRNAs modifications effects.*

AQUATION s.a.

Liège, Belgium

Managing Director

2007–2017

I founded AQUATION s.a. and settled on my own as an independent consultant specialised in life science engineering and modeling for health, agro-industry, environment, water treatment. My strength lies in providing new knowledge-based services to public or private owned companies in the bio-economy market model.

Detailed achievements:

- Statistical experimental design for the measurement of the effect on bitterness of water sulfate/chloride ratio in the brewing of trappist beers by a panel of rating judges
- Water treatment engineering projects for general contractors and public tenders in Belgium and abroad (Vietnam, Tunisia, Indonesia, Algeria, Sri Lanka)
- Water Demineralisation engineering projects for the industry
- Water Thermal Desalination research projects for the industry
- Anaerobic water treatment process engineering projects for the industry
- Auditing for water source treatment in the brewing industry
- External reviewer for the European Commission to rank applicants calling for FP7 funding under water or circular economy thematic

BALTEAU s.a., John Cockerill group

Sprimont, Belgium

R&D Manager and Senior Project Engineer

1999–2007

Research program coordinator, in charge of public fund raising and senior project engineer.

Detailed achievements:

- Research program project leader on membrane bioreactor technology for waste water treatment : process modelling, pilot tests on membrane ultrafiltration modules
- Waste water treatment plant design, engineering, construction follow-up and plant starting-up. Budget in charge in the range 0.3 to 6 millions euros

WATCO s.a., Tractebel group

Welkenraedt, Liège, Brussel, Belgium

Project Engineer and business development

1992–1999

Project Engineer and business unit leader in Landfill Engineering and Biogas to Energy Sector.

Detailed achievements:

- New Landfill site project set up near Warsaw (Tractebel, Poland)
- Design, permitting procedures, environmental impacts follow-up of landfill extension projects in Wallonia and Flanders
- Design, call for tender, execution follow-up of a complete biogas collection and valorisation unit (gas collecting pits, piping network, blowers, gas analysers, high temperature flare and 1.8 MW gas engines) at the Engis landfill site. Budget in charge : 3.5 millions euros.

Morgan Guaranty Trust Company of New York

Brussel, Belgium

Analyst Programmer, IT Dept.

1992–1992

Database queries programming on the Eurobonds clearing organization (EUROCLEAR) for the Information Management.

Detailed achievements:

- IBM 3090 Mainframe application programming (RDBMS, SQL, DB2 and PL1)
- Team work in an English speaking environment for 7 months.

Publication record in Biophysics, Bioinformatics and Computational Biology

2022: Joiret, M., Kerff, F., Rapino, F., Close, P., Geris, L. Ribosome Exit Tunnel Electrostatics, Physical Review E, 105, 2022. <https://journals.aps.org/pre/abstract/10.1103/PhysRevE.105.014409>.

2019: Joiret, M., Mahachie John, J.M., Gusareva, E.S, Van Steen, K. Confounding of linkage disequilibrium patterns in large scale DNA based gene-gene interaction studies. BioData Mining, 2019.

all publications:: <https://orbi.uliege.be/ph-search?uid=U179427>

Computer and software skills

Intermediate: HTML5, CSS, JavaScript, \LaTeX , Matlab.

Advanced: UNIX/Linux scripts, **Python**, C++, **R**, Mathematica, DBMS MS Access, SQL, Excel, Visual Basic, FORTRAN, PASCAL, SAS Statistical Analysis (SAS Certified Base Programmer), OpenBUGS and JAGS (Bayesian methods), PLINK, simuPOP, MB-MDR (GWAS), Ingenuity Pathway Analysis, Netlogo,

Python libraries (BioPython SeqIO, regular expression, Scikit-Learn, Numpy, Pandas, PyTorch, Keras, TensorFlow, Database querying API, Matplotlib).

Artificial Intelligence, Machine Deep Learning and data mining: Experience in expert models building, General knowledge and projects experience in ML/AI methods, e.g., neural networks.

Classical Biostatistics: advanced knowledge of classical statistical inference methods and tools.

Bioinformatics: QC|alignment|mapping tools|genomic repositories|downstream analysis of NGS repositories SRA, ENA, fastqc, trimmomatic, cutadapt, bowtie2, STAR, RiboProfiling tools, PyMol for X-Ray crystallography or EM biomolecular structural analysis, Alfafold.

Communication and Pedagogical Skills

2007–2017: Invited lecturer for water treatment and environmental sciences at the Polygone de l'Eau, Verviers & Mons, 18 ECTS credits per year.

2017-2022: Invited lecturer for Energy course at HEC ULG Liege in the Master in Environmental Management, 3 ECTS credits per year.

2020-2021: Assistant lecturer of Prof. Liesbet Geris at ULiege in Biophysics: lecture on optical tweezers and applications to the study of biomolecules and biological structures.

2021-2022: Assistant lecturer of Prof. Liesbet Geris at ULiege in Biophysics: lecture on the application of PyMol and Alfafold for the study of biomolecules and biological structures.

Languages

French: Mother tongue

English: Professional proficiency

Level 4 | CEFR C1 | TOEFL 550

German: Basic

Zertificat Deutsch als Fremdsprache, Goethe-Institut

Dutch: Basic

Interests

- Reading | Learning | Writing | Science diffusion and outreach
- Chess
- Epistemology
- Swimming
- Mountain hiking with teammates
- Yachting and Sailing