Mathias Galati

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Education

PhD in Biology: i2TRON Doctoral Training Unit — *Belval, Luxembourg*
University of Luxembourg - LCSB — *2021 - 2025*

- Advisors: Prof. Dr. Reinhard Schneider, Dr. Venkata Satagopam
- WP 1.5: Bringing translational science and medicine through interdisciplinary collaborations

MSc: Structural Biology, Bioinformatics and Biotechnology — *Strasbourg, France*
University of Strasbourg — *2017 - 2019*

Java, Python, UML, SQL, systems biology, drug design, mathematics and statistics in the Big Data Era

Bsc: Molecular and Cellular Biology — *Strasbourg, France*
University of Strasbourg — *2014 - 2017*

Nervous and endocrine systems, microbiology, structural biology

Professional Experiences

2021 – 2025 **PhD | LCSB – Biocore team, Prof. Dr. Reinhard Schneider, Dr. Venkata Satagopam |** *Belval, Luxembourg*,
Systems biology: Mechanisms of peanut allergy development in early childhood
scRNA seq – CCC: WNT5A and fibroblast roles in colorectal cancer
Multi-omics: Molecular mechanisms linking Dietary fibers to gut inflammation

2019 **Internship | CIRAD – QualiSud team, Dr. F. Constantias |** *Montpellier, France*,
Metabarcoding approaches on test microbial communities; 16S and ITS analysis on apples and mangoes

2018 **Internship | ICUBE – CSTB team, Pr. C. Mayer and Dr. O. Poch |** *Strasbourg, France*,
Updating sequence analyses and improving structural modeling of the B subunit of meiotic topoisomerase VI

2018 **Internship | ICUBE – CSTB team, Dr. J. Thompson |** *Strasbourg, France*,
Constructing and classifying phylogenetic profiles of protein networks at domain and interaction site level

Publications

Published

Galati, M, Wang X, Shoaib M, Rawal R, Balaur I, Narayanasamy S, Satagopam V (2025). Next-Generation Sequencing: Standard Operating Procedures and Applications (1st ed.). Chapter 7. CRC Press. doi: 10.1201/9781003354062-7

Galati, M, PhD Thesis: Data mining in integrating immune strategies for translational research in oncology, allergology and nutritional medicine

In writing

Timing variability governs fate decisions in dopaminergic neuron differentiation

IL10 mechanisms linking dietary fibers to gut inflammation

Network modeling of peanut allergy manifestation in children

Modeling WNT5A roles with cancer associated fibroblast

Outreach & Professional Development

Conferences

2025	**8th Venusberg Meeting on Neuroinflammation**, Attendee, Cerebral immune activation at the crossroads of healthy aging, senescence and neurodegeneration	*Belval, Luxembourg*
2024	**Life Sciences PhD Days**, Poster: Data Mining in Integrating immune strategies for Translational Research in Oncology, Allergology and Nutritional Medicine	*Belval, Luxembourg*
2023	**ISMB-ECCB**, Poster: Investigating inflammatory pathways in cancer and chronic diseases aetiologies through different molecular and cohorts data layers	*International*
2019	**OMICS days**, Attendee, bioinformatics and multi-omics	*Montpelier, France*
2018	**FRISBI Instruct**, Attendee, State-of-the-art strategies for preparation and biophysical characterization of macromolecular complexes	*Strasbourg, France*

Workshops

2022	**sincellTE Bioinformatics School**, Single cell - Transcriptomics - spatial and Multi-Omics	*Roscoff, France*
2022	**Max Delbrück Center for Molecular Medicine**, Genetic Association Course with Application to Sequence and Genotype Data	*Berlin, Germany*

Scientific community service

2022 – 2025	**ISCB – RSG Luxembourg**, Board member, Treasurer, Secretary	*Luxembourg*
2019 – 2022	**JeBIF**, Board member	*France*
2021	**ISCB Student Council Symposium**, Social event Chair	*International*
2018	**ABISS**, Founding vice-Chair	*Strasbourg*

Training activities

Good Scientific Practice: Research ethics, conflict management, data/source management, and publication processes

Elixir: FAIR principles, metadata standards, and data life cycle strategies for reproducible, interoperable research data

Reproducible workflows: Auto., scalable pipelines (Snakemake, Targets, Quarto, Conda) for transparency and efficiency

Translational Research: Bench-to-clinic; drug dev., regulatory pathways, and bioinformatics in precision medicine

Statistics for omics: Hypothesis testing, dimensionality reduction, and predictive modeling for high-throughput data

Systems Biology: Computational modeling, network analysis, and multi-omics integration for complex biological systems

Machine Learning: Supervised/unsupervised algos., Python for data preprocessing, feature eng., and imbalanced data

Skills

Languages:

- French: Native speaker
- English: B2 – Fluent in daily communication, academic writing skills

Programming: R (tidyverse, ggplot2, Seurat), Python, Bash/Shell, SLURM, Git/Gitlab/Github, LaTeX

Softwares: Microsoft Office, Inkscape

Personal interest: FDM 3D printing, hiking with the dog, Movies, Computer/Board games

Other:

- French driver license B (owning a car)
- ISCB member since 2022

References: Reinhard Schneider, Venkata Satagopam, Ahmed Hemedan