BERAUD Mélanie, Ph.D.

PhD Microbiology/Molecular Biology, Data Scientist,
Senior technician Biotechnology

in R^G *Melanie Beraud*

○ *kumquat42*

✉ *melanie.beraud@gmail.com*

📞 *0033 6 67027587*

🏠 *currently in Paris, France*

SOFT SKILLS

People management, Tutoring, Open-minded,
Public speaking, Analytical skills, Critical thinking,
Adaptability, Enthusiast, Self-learner

TECHNICAL SKILLS

Molecular Biology
High-throughput cloning, mutagenesis & screening, 'Golden Gate', qPCR, primer design, DGGE, Q-PIX, BIOMEK

Biochemistry and Proteomics
Protein Expression and Purification, HPLC/UPLC, Mass-spectrometry (ESI, MALDI, SELDI), ChIP, pymol

Omics & Bioinformatics
Web servers/platforms/softwares (IMG, PATRIC, MG-RAST, SEED, NCBI, Expasy, BLAST, MEGA, SNAPGene), Genome browsing, sequence analyses, variant analyses

Microbiology
E.coli, *Salmonella*, *B. subtilis*, *fungi*, environmental strains, communities, L2 safety protocols

DATA SKILLS

Coding
Python, R, VBA for Excel, SQL, version control (github)

Data Visualization and Statistics
plotly, seaborn, dash, streamlit, Excel, Statistics (R), STAMP

Machine Learning
supervised, unsupervised (sklearn), deep-learning, NLP (tensorflow), hugging face

Big Data
Spark, Databricks AWS

Environments and OS
IDE, Jupyter Notebooks, docker, shell, Windows, Linux

LANGUAGES

English 🇬🇧 🇺🇸	**French** 🇫🇷
Full Professional Proficiency	*Native Proficiency*
German 🇩🇪	**Dutsch** 🇳🇱
Limited Working Proficiency	*Elementary Proficiency*

WORK EXPERIENCE

Biotechnology Teacher, *Lycée technique Galilée*
03/2023 - 08/2023   *Genevilliers, France*
- High school and BTEC students.

Sequencing Platform Manager, *Seqlab, Genoscope, CEA*
05/2021 - 11/2022   *Evry, France*
Illumina sequencing platform mainly working on ecological cues; Tara projects; methylome via Oxford Nanopore sequencing
- ~ 8 People: HR, planning, meetings, daily production,
- 1000 extractions, 5000 libraries, 79 Tb sequenced/yr.
- 2 papers published,
- Project management (up to 100,000E)

Strain engineer, *Lipofabrik*
04/2018 - 01/2021   *Lesquin, France*
Strain engineering for overproduction of anti-fungal products
- Strain optimization: GMO/non-GMO tools,
- High-throughput screening (5000/wk.), characterization
- Lead for Strain registration, genome analyses,
- Technician supervision.

Postdoc, *University of Mons*
04/2013 - 09/2017   *Mons, Belgium*
Design and monitoring of synthetic community of environmental bacteria _ total 500,000E/5 yrs.
- Engineering of marine communities,
- Development of qPCR and MS protocols,
- Home-made databases & statistical analyses pipelines
- Genomics, Proteomics,
- UMons project manager: reporting, talks, posters.

Postdoc, *MPI Biochemistry*
01/2011 - 01/2013   *Planegg, Germany*
Chromosomal segregation in Bacillus subtilis, *BACmid design and targeted mutagenesis*
- Golden Gate cloning,
- High-throughput screening,
- Fluorescence microscopy, ChIP, qPCR,
- Structure analysis.

Research engineer, *Institut Pasteur*
09/2007 - 09/2010   *Paris, France*
Characterization of the RpoS-dependent YncC transcriptional regulator in Salmonella,
- 2 papers, talks at International conferences,
- Cloning and SELDI-TOF proteomics,
- Home-made application for results analyses.

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MOOCs

BIG (Génomique) *(2020)*
Python *(2018)*
Genomes and Algorithms *(2016)*
Analyse de données multidimensionnelles *(2016)*
Statistics using R *(2015)*

EDUCATION

Data Science
Jedha Bootcamp   *Paris, France*
08/2023 - 01/2024
    - Data Visualization
    - Machine Learning
    - Deployment
    <u>Final project:</u> *Development of a web application*
        for the detection of human emotion

PhD Microbiology
University Denis Diderot (Paris VII)   *Paris, France*
09/2007 - 09/2010
<u>Thesis:</u> *Le locus* yciGFE(katN) *du régulon* σ^S*: Régulation différentielle chez* E. coli *et* Salmonella *par H-NS et le régulateur YncC*

M.Sc. Microbiology, Genomic, Biochemistry, Structural Biology
Paris VII and XI University   *Paris, France*
09/2004 - 08/2007

Technical degree in Biotechnology (BETC)
ENCPB
09/2002 - 06/2004   *Paris, France*

VOLUNTEERING

Data4Good
2024 - …
Data Scientist for 2 projects:
    - LinkR: Interhop
      Development of plugins for graphic visualization of
        medical prescriptions
    - Seastemik: PinkBombs
    Research on feces and chemical rejection under
marine aquaculture cages and their impact on environment

MeepleClub
2022 - …
Active member, organization of public events for Telethon, local yearly convention, and other public events

StaPa
2008 – 2010
Young Researcher Association from 'Institut Pasteur'.
Secretary, Yearly congress organization, Leisure events and Movie nights.

PAPERS

Schmidt *et al.* 2024
Low-frequency somatic mutations are heritable in tropical trees *Dicorynia guianensis* and *Sextonia rubra*, PNAS, DOI: 10.1073/pnas.2313312121

Fouteau *et al.* 2022
Complete Genome Sequence of *Tepidibacter sp*. Strain 8C15b, Isolated from Bank Sediments of Haiphong Bay, Vietnam, Microbiol. Resour. Announc., DOI: 10.1128/mra.00132-22

Matallana-Surget *et al.* 2017
Chapter 17: Comparative metaproteomics to study environmental changes, In 'METAGENOMICS: PERSPECTIVES, METHODS, AND APPLICATIONS', ISBN: 9780081022689

Levi-Meyrueis *et al.* 2015
Repressor activity of the RpoS/σ^S-dependent RNA polymerase requires DNA binding, Nucleic acid Res., DOI: 10.1093/nar/gku1379

Beraud *et al.* 2010
Proteomic Analysis Reveals Differential Regulation of the σ^S-Dependent *yciGFE(katN)* Locus by YncC and H-NS in *Salmonella* and *Escherichia coli* K-12, Mol Cell Proteomics, DOI: 10.1074/mcp.M110.002493

PERSONAL INTERESTS

I like to…
Break my head on board Games and puzzles, Read books,
Bike;
& make something out of all kind of threads: Knitting, Hooking, Sewing

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