ASPERT Théo

Nationality: French
Age: 27 y.o
PhD in biophysics (of aging)
Expert in microfluidics

Contact

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Bioengineer and PhD in biophysics passionate about the biology of aging, I have a strong expertise in developing, using, and transmitting microfluidics, timelapse microscopy, and image processing technics to study how cells age, at the single-cell level.

MAIN R&D EXPERIENCES

Charvin lab - **PhD**
Institut de Génétique et de Biologie Moléculaire et Cellulaire (INSERM, CNRS, University of Strasbourg)
(2017 - Dec 2021)

R&D and scientific projects:

- Development of a high-throughput platform for replicative aging based on microfluidics and microscopy.
- Deep learning-based automated detection of cell divisions for replicative lifespan reconstruction
- Measuring the statistics of extrachromosomal rDNA Circle excisions, a major event in the replicative lifespan of budding yeast cells.
- Monitoring the dynamics of entry into quiescence during an unperturbed lifecycle at single-cell level.
- Development of a microfluidic device to couple single-cell timelapse analysis with biochemical assays.
- Multiple collaborative projects, involving the development/use of microfluidic strategies.
- 2x first author publications, 6 publications.

Technical skills developed:
Microfluidics (experimental, theorical and simulations (COMSOL)). **Microfabrication** (design (AutoCAD), photo- and soft-lithography, clean room management). **Timelapse**, confocal and epifluorescence **microscopy**, microscope and hardware programming (Micromanager). Classical and d**eep-learning image and sequence processing** (CNN, LSTM, U-Net). Electronics and automation. **Data science and software development** (Matlab, Python).
Quantitative biology (data acquisition, processing and visualization. Deterministic and stochastic modeling).
Yeast biology (notably aging and quiescence).
Classical biology tools: FACS, PCR, DNA gels, yeast and bacteria strains generation.

Saudou lab -
Grenoble Institute of Neurosciences
Master's internship
(2016)

Description of a new mode of vesicles transport along axons
Technical skills developed:
Timelapse with spinning disk confocal microscopy, microfluidics, image and data processing, arduino automation, neuronal cell culture, immunofluorescence tagging.

ALMA MATER

Grenoble Institute of Technology - PHELMA
*Bachelor's degree in Engineering Physics
*Master's degree of bioengineering (physics and instrumentation for biomedical applications)
Grenoble-Alps University
*Master of Science in Nanobiology

(2014-2017)

Ex of courses/praticals: Theoretical and experimental microfluidics, microfabrication, hydrodynamics, numerical modelisation, multi-physics simulations (COMSOL), image processing, molecular and cellular biology, physiology, systems biology.
Ex of projects: Studying the influence of shear stress on *Dictyostelium discoideum* actin polymerization using a microfluidic device.

Lycée Pothier - Pre-engineering class
(2011-2014)

Intensive undergraduate preparation in mathematics, physics and engineering sciences for the national competitive entrance exams to French «Grandes Ecoles».

OTHER SKILLS

Chatting with computers and machines
Matlab, Python, C++, HTML/CSS, Fiji/Java
3D modeling and printing (FDM, SLA), Arduino, DIY
Printed 500+ faceshields for hospitals during the Covid19 pandemic
Conveying a scientific/technical message
Giving talks, Powerpoint, Adobe suite, Webdesign

PERSONNAL INTERESTS

Cycling (road/mountain/gravel), hiking, trekking
100+km/week
Photography/Astrophotography
Environment and society
Co-founder of twitter.com/sapiensecologie