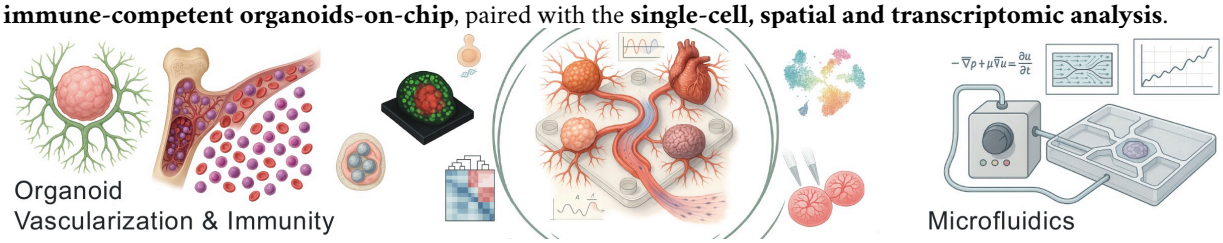
Clément Quintard, Ph.D.

clement.quintard@gmail.com Scholar GitHub https://clementquintard.com

Postdoctoral Fellow in the Josef Penninger Lab, University of British Columbia (Vancouver, Canada). I design and run experimental programs end to end, from building the platform to interpreting the data: **vascularized, immune-competent organoids-on-chip**, paired with the **single-cell, spatial and transcriptomic analysis**.



Selected Publications

2026 **Residual Scoring of Transcription Factor Activity Reveals Context Specific Regulators** — **Quintard, C.**, … Penninger, J.M. & Pelissier, A. **In preparation**

2026 **An immune-coupled human heart-on-chip for dissecting and treating myocardial ischemia-reperfusion injury** — **Quintard, C.**, Wang, J., Pelissier, A., … & Penninger, J.M. **In revision, Nature Biotechnology**

2026 **Flow shapes endothelial and mural cell states in human stem cell-derived capillary networks-on-chip** — **Quintard, C.**, Wang, J., Pelissier, A., … & Penninger, J.M. **In revision, Nature Cell Biology**

2026 **Modeling human hematopoiesis in bone marrow organoids** — **Quintard, C.**, Salewskij, K., Ramisch, S., … & Penninger, J.M. **In revision, Cell Stem Cell**

2026 **A Critical Review of Body-on-a-Chip Systems** (Review Article) — Ren, J., **Quintard, C.** & Penninger, J.M. **In revision, Lab on a Chip**

2026 **Building physiologically relevant multi-organ-on-chip systems** (Comment Article) — **Quintard, C.**, Ren, J. & Penninger, J.M. **Nature Reviews Bioengineering**

2026 **Organotypic vascularization improves human islet organoids survival and reverses diabetes** — Wang, J., Pelissier, A., Lin, J., **Quintard, C.**, … & Penninger, J.M. **Cell Stem Cell**

2025 **Human assembloid of human blood vessel organoids with pancreatic islets improves insulin secretion over time ex vivo** — Tubbs, E., ... , **Quintard, C.**, … & Gidrol, X. **Cell Reports**

2025 **Organoid models of lymphoid tissues** (Review Article) — Bogoslowski, A., Ren, J., **Quintard, C.** & Penninger, J.M. **Organoids**

2024 **Engineering next generation vascularized organoid constructs** (Review Article) — Werschler, N., **Quintard, C.**, Nguyen, S. & Penninger, J.M. **Atherosclerosis**

2024 **A microfluidic platform integrating functional vascularized organoids-on-chip** — **Quintard, C.**, Tubbs, E., Jonsson, … Penninger, J.M. & Gidrol, X. **Nature Communications**

2022 **Selective plane illumination microscope dedicated to volumetric imaging in microfluidic chambers** — Bissardon, C., Mermet, X., **Quintard, C.**, Sanjuan, F., Fouillet, Y., … & Blandin, P. **Biomedical Optics Express**

2022 **Microfluidic device integrating a network of hyper-elastic valves for automated glucose stimulation and insulin secretion collection from a single pancreatic islet** — **Quintard, C.**, Tubbs, E., Achard, J-L., Navarro, F., Gidrol, X. & Fouillet, Y. **Biosensors and Bioelectronics**

Patents

2025 **Scalable, vascularized, perfusable organoids-on-chip and methods thereof** — **Quintard, C.** & Penninger, J.M. US63/802,864, May 9 2025

2021 **Method for microfluidic perfusion of a spheroid and device suitable for implementing said method** — **Quintard, C.**, Achard J-L. & Fouillet, Y. EP3878942A1 / US0277349, Sep 9 2021

Research Experience

2022–Present **Postdoctoral Research Fellow,** University of British Columbia (Vancouver, Canada)
Penninger Lab, Department of Medical Genetics.
- Built the first vascularized, immune-competent heart-on-chip: perfused heart and bone marrow organoids in a closed loop. Identified and validated drug targets.
- scRNA-seq analysis end to end: integration, DEG, RNA velocity, ligand–receptor inference, gene regulatory network inference, atlas reference mapping.
- Designed microfluidic systems for higher-throughput organoid culture.
- **Lab manager** since 2026: main point of contact for the Penninger lab's Vancouver site (10 people); assign tasks and schedules, oversee ordering, logistics and budget, and write grant and collaboration reports.
- Supervised 1 PhD student 1 MSc student (8 months), and 1 medical student (6 months).

Supervisor: Josef M. Penninger.

2018–2022 **Ph.D. Researcher,** CEA Grenoble (France)
Microfluidic Systems & Bio-Engineering (LSMB) & Biomics Laboratories.
- Developed microfluidic devices for automated insulin monitoring of pancreatic islets.
- Developed iPSC-derived blood vessel organoids-on-chip.
- Published 2 first author research articles, 1 review, 1 patent.
- Supervised MSc student Théo Champion.

Supervisors: Xavier Gidrol, Yves Fouillet.

2018 **Research Intern,** ESPCI Paris & Sanofi (France)
Physics and Mechanics of Heterogeneous Media Laboratory (PMMH).
- Studied the deformation of monoclonal antibody aggregates in microfluidic channels.

Supervisors: Anke Lindner, Charles Duchêne.

2016–2017 **Research Fellow,** Wrocław University of Science and Technology (Poland)
- Investigated optothermal Marangoni effects via laser-driven microfluidics.

Supervisor: Andrzej Miniewicz.

2016 **Research Intern,** Harvard University (USA)
The Holbrook Group, Department of Organismic and Evolutionary Biology.
- Investigated air propagation in porous media using leaves as a biological model.

Supervisors: N. Michele Holbrook, Alexandre Ponomarenko, Uri Hochberg.

2015 **Research Intern,** École Normale Supérieure Paris–Saclay (France)
Quantum and Molecular Photonics Laboratory (LPQM).
- Worked on liquid-state optical resonators for lab-on-chip applications.

Supervisor: Abdel El Abed.

Education

2018 – 2022 **Ph.D., CEA Grenoble (France)** Microfluidic systems, Organs-on-chips, Organoids. *LSMB Laboratory & Biomics Laboratory.*

2017 – 2018 **M.Sc. Microfluidics, Institut Pierre-Gilles de Gennes (IPGG) (Paris, France)** Double degree with ENS Paris-Saclay

2014 – 2018 **Grande École Degree – Fundamental Physics and Applications, ENS Paris-Saclay** *Quantum and statistical physics, Solid state physics, Environmental physics, Particle physics, Soft-matter physics, Fluid mechanics, Astrophysics, Biology, Biophysics, Experimental physics.*

2011 – 2014 **Scientific CPGE – Lycée La Martinière Monplaisir (Lyon, France)** *Classes Préparatoires aux Grandes Écoles (CPGE): entrance examinations to France's top engineering and science schools.*

Skills

Bioengineering Chip design and fabrication (SolidWorks, COMSOL), fluid handling, device integration. Confocal, light sheet, electron microscopy (TEM, SEM), ImageJ/Fiji

Computational Single-cell and spatial transcriptomics (Seurat, CellChat, Visium HD), GRN and TF activity inference, bulk RNA-seq (salmon, DESeq2/pydeseq2), custom image-analysis pipelines, experimental design and statistics. Python, R, Matlab

Awards, Grants & Selected Talks

Awards & Fellowships

2026 **ISSCR Travel Award**, $500 (USD)

ISSCR Merit Award

2024 – 2026 **Michael Smith Health Research BC Research Trainee Fellowship**, $64,500/year (CAD)

2024 **ISSCR Travel Award**, $1125 (USD)

ISSCR Merit Award

2023 **Best PhD Thesis Award**, Doctoral school winner; national-level representative

Research Funding

2022–present **Grant writing, reporting & administration** – Prepare progress reports, budgets and financial summaries (Fondation Leducq; CIHR), totalling $2.2M (CAD)

Conferences & Presentations

2026 **BaCell3D (Basel, Switzerland) – Speaker**, "A multi-organoid-on-chip model of myocardial ischemia-reperfusion injury and immune cell dynamics"

2025 **Keystone Symposia (Whistler, Canada) – Speaker**, "Engineering organoids-on-chip with flow dynamics to model organ-specific vascularization and immune-enhanced cellular crosstalk in cardiac tissues"

2024 **EUROoCs (Milan, Italy) – Speaker**, "A microfluidic platform integrating functional vascularized organoids-on-chip"

2019 **Pint of Science (Grenoble, France) – Speaker**, "Organs-on-chips: A promising future for drug development" (public outreach talk)

Interests

General interest in sports (played football and tennis at a competitive level), outdoor activities, science, history, wine, literature, nature, and music.