Innovate4 Life – i4L

The EPFL life sciences innovation initiative

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Director of Programs

Innovate4Life

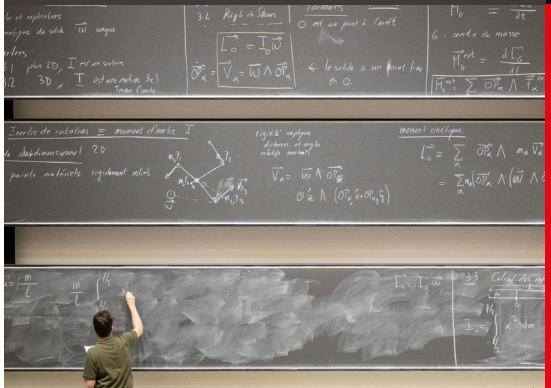
Date 2024

EPFL i4L innovate for life

EPFL's three missions according to the Federal Act

Education

Innovation



Research

EPFL at a glance

Key Figures

14’374
Students

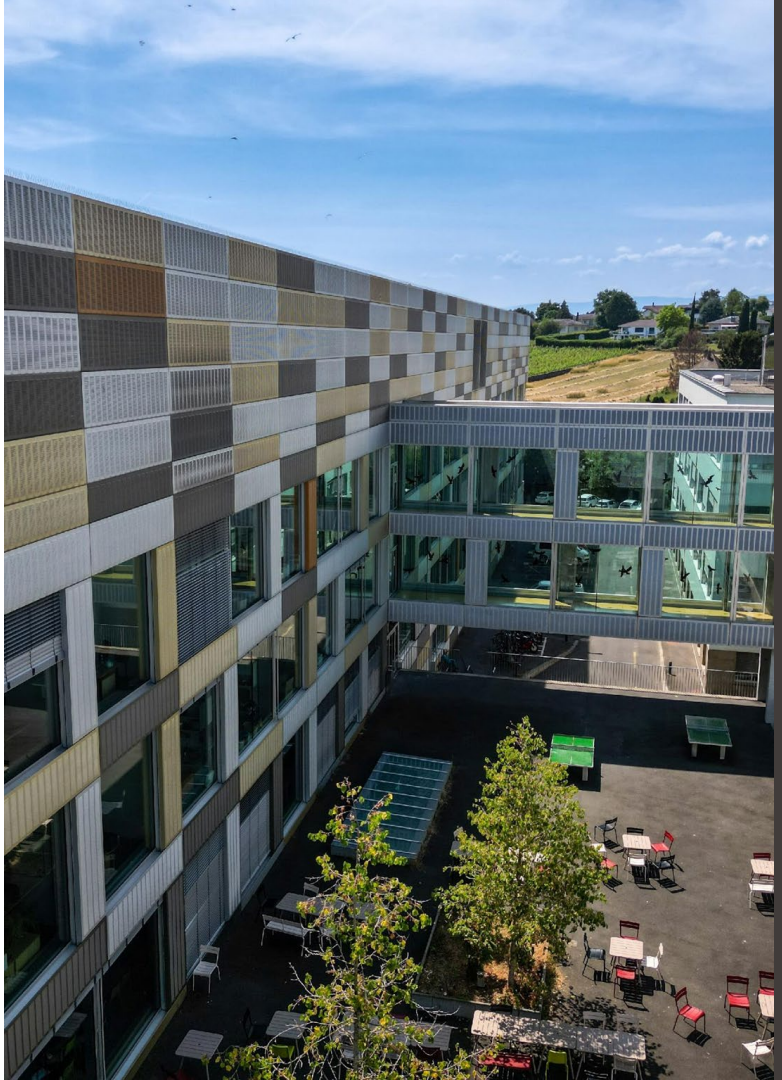
372
Professors

+6’081
Employees
(including PhD)

+130
Nationalities

5 Schools and 2 Colleges

- ENAC — Architecture, Civil and Environmental Engineering
- IC — Computer and Communication Sciences
- SB — Basic Sciences
- STI — Engineering
- SV — Life Sciences
- CDM — Management of Technology
- CDH — Humanities

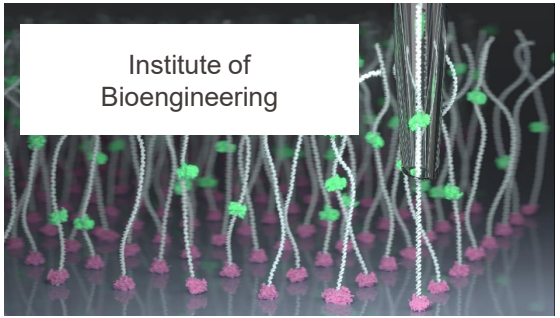


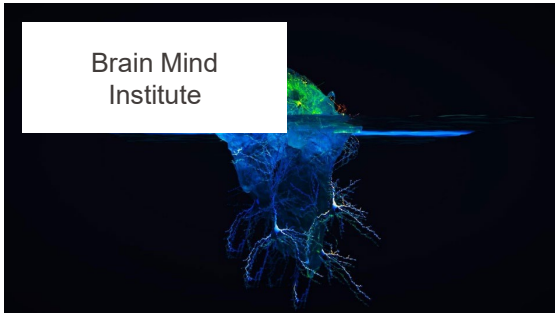
School of Life Sciences

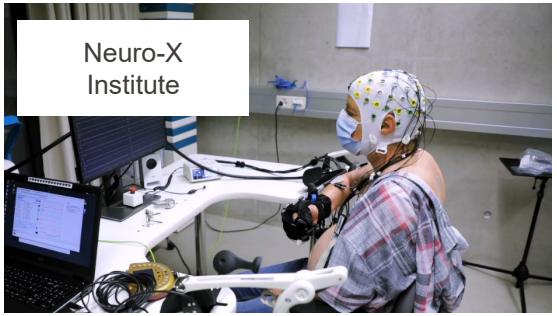
Education, research and innovation at the interface of biology, engineering, basic and computer sciences to

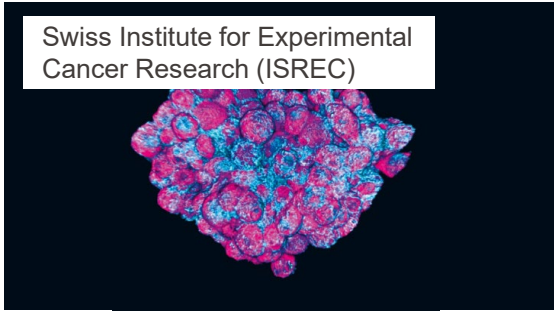
- Understand mechanisms of life
- Improve medicine
- Benefit health and wellbeing
- Serve society

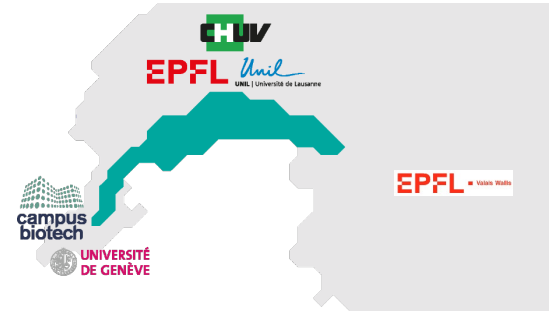
School of Life Sciences Research Domains/Institutes



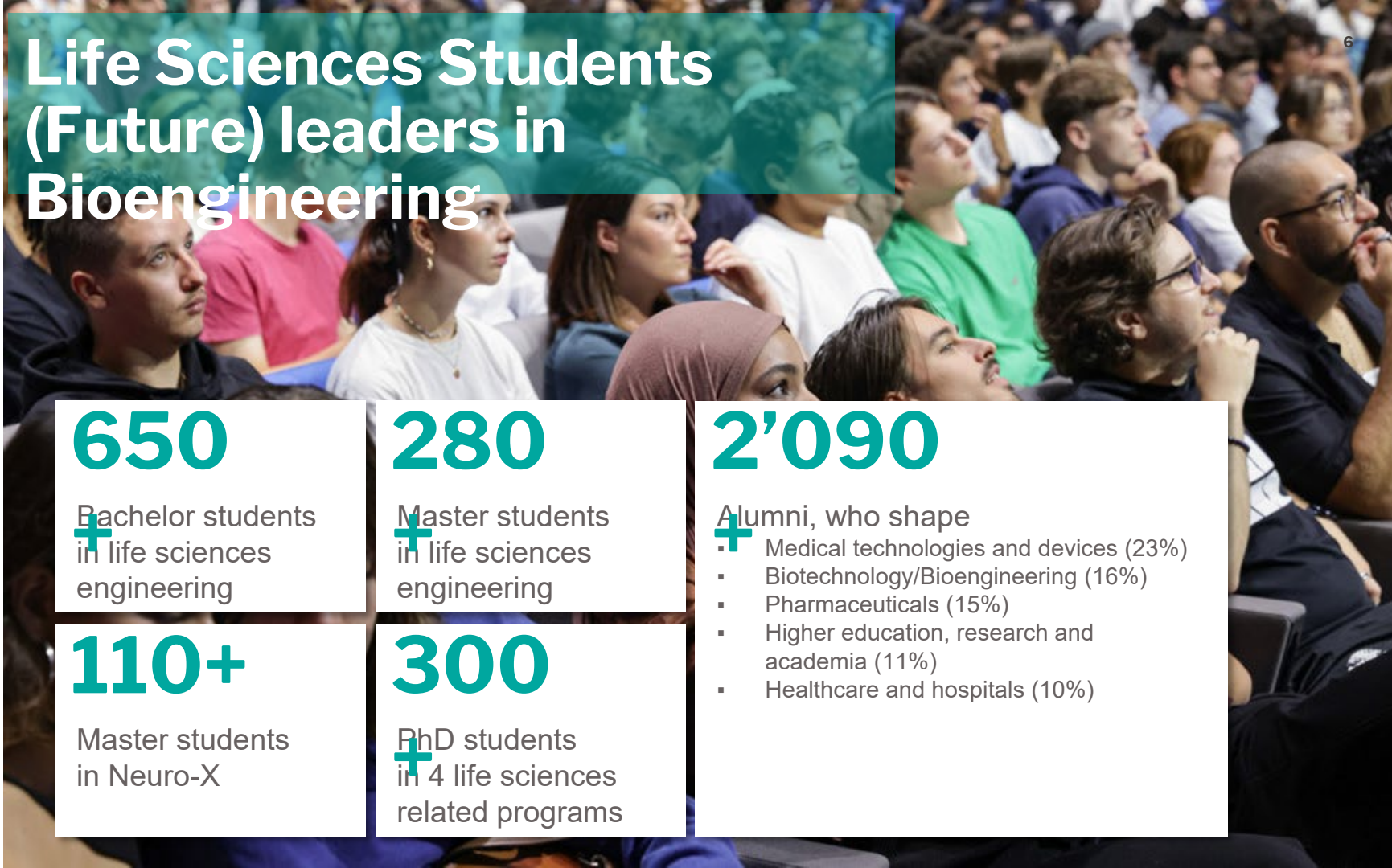








Life Sciences Students (Future) leaders in Bioengineering



650

Bachelor students in life sciences engineering

+

280

Master students in life sciences engineering

+

110+

Master students in Neuro-X

+

300

PhD students in 4 life sciences related programs

2’090

Alumni, who shape

- Medical technologies and devices (23%)
- Biotechnology/Bioengineering (16%)
- Pharmaceuticals (15%)
- Higher education, research and academia (11%)
- Healthcare and hospitals (10%)

EPFL Innovation in 2023

500+
TOTAL EPFL STARTUPS

23
NEW STARTUPS CREATED IN 2023

470
MCHF RAISED BY EPFL STARTUPS

21.5
MCHF RAISED FROM INDUSTRIAL CONTRACTS (DIRECT FUNDING)

11.2
MCHF RAISED FROM INNOSUISSE PROJECTS

126
INVENTIONS AND **SOFTWARE**

45
LICENSES SIGNED

86
PATENTS FILED

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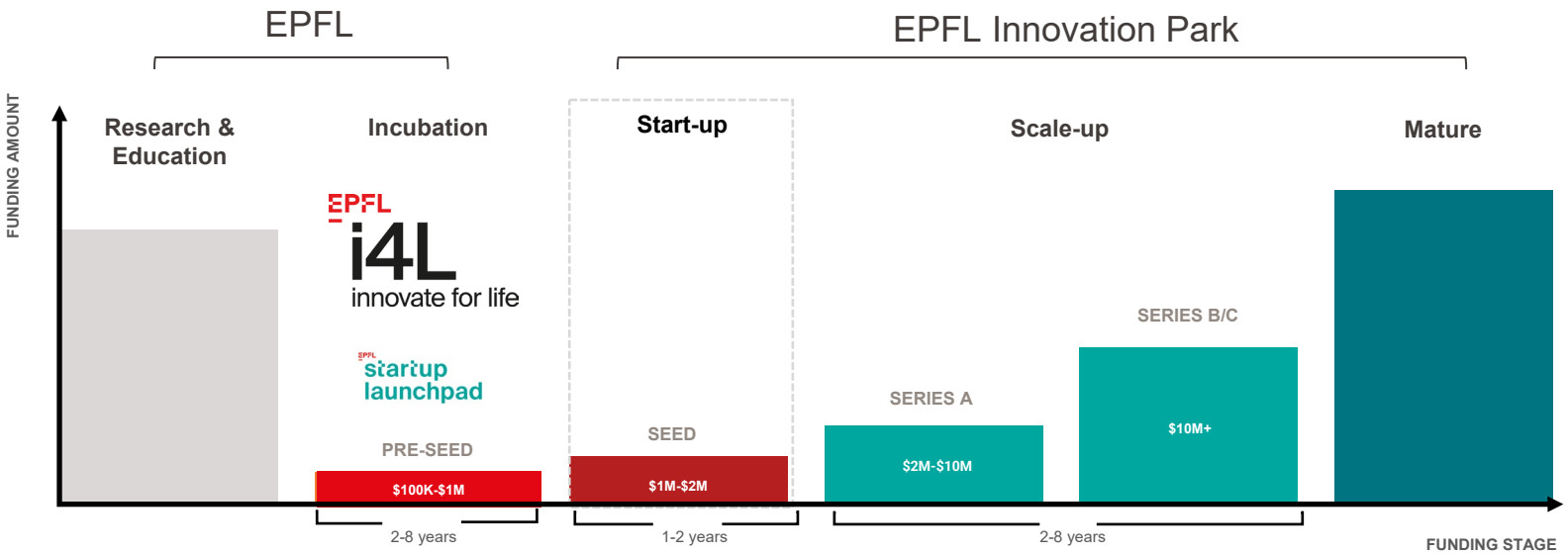
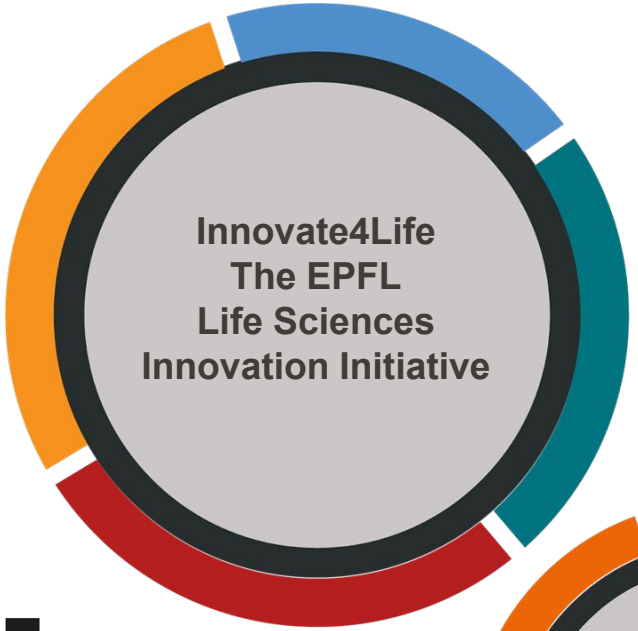
Ref: EPFL Vice Presidency for Innovation (VPI) and EPFL Tech Transfer Office (TTO)

The EPFL Startup Ecosystem

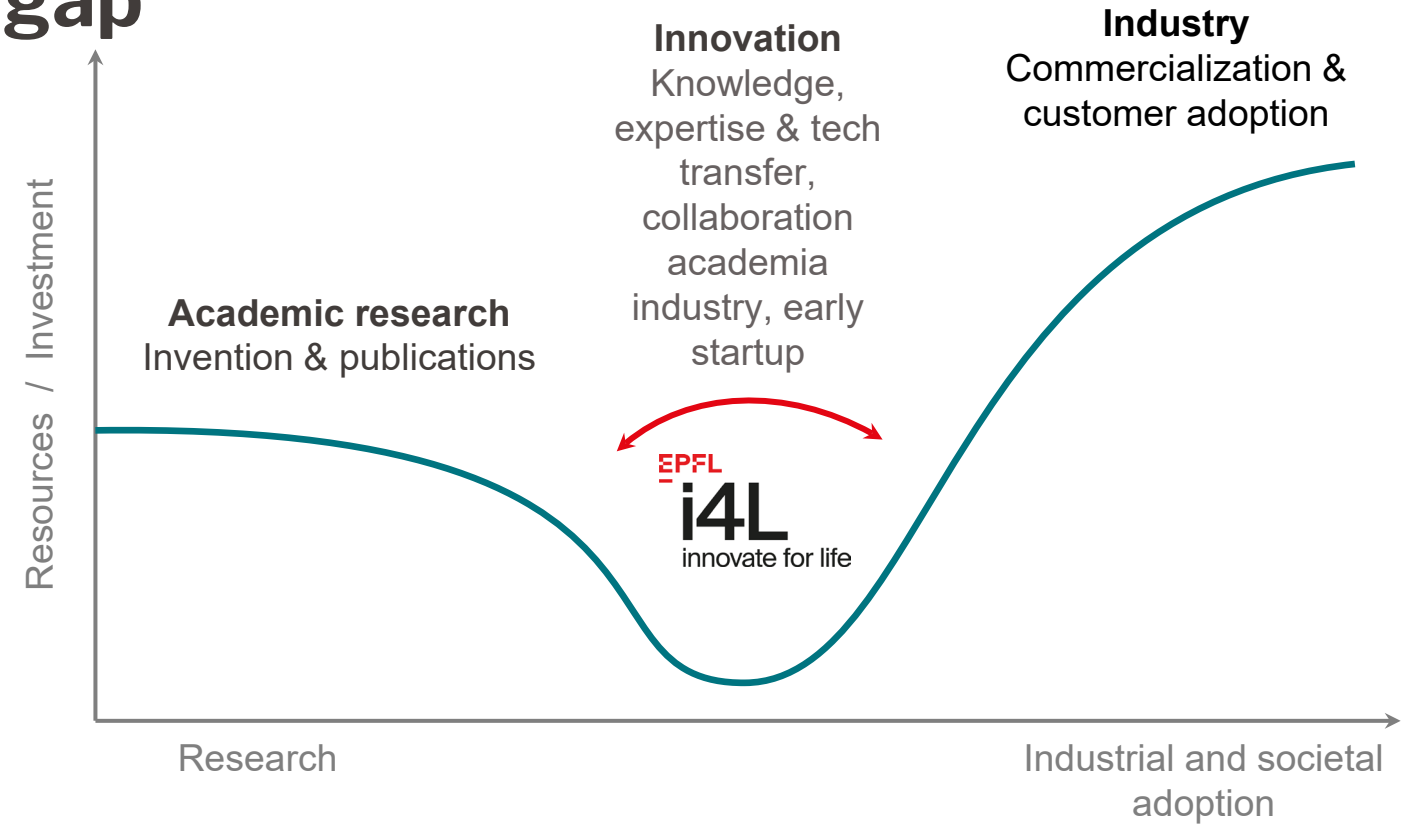




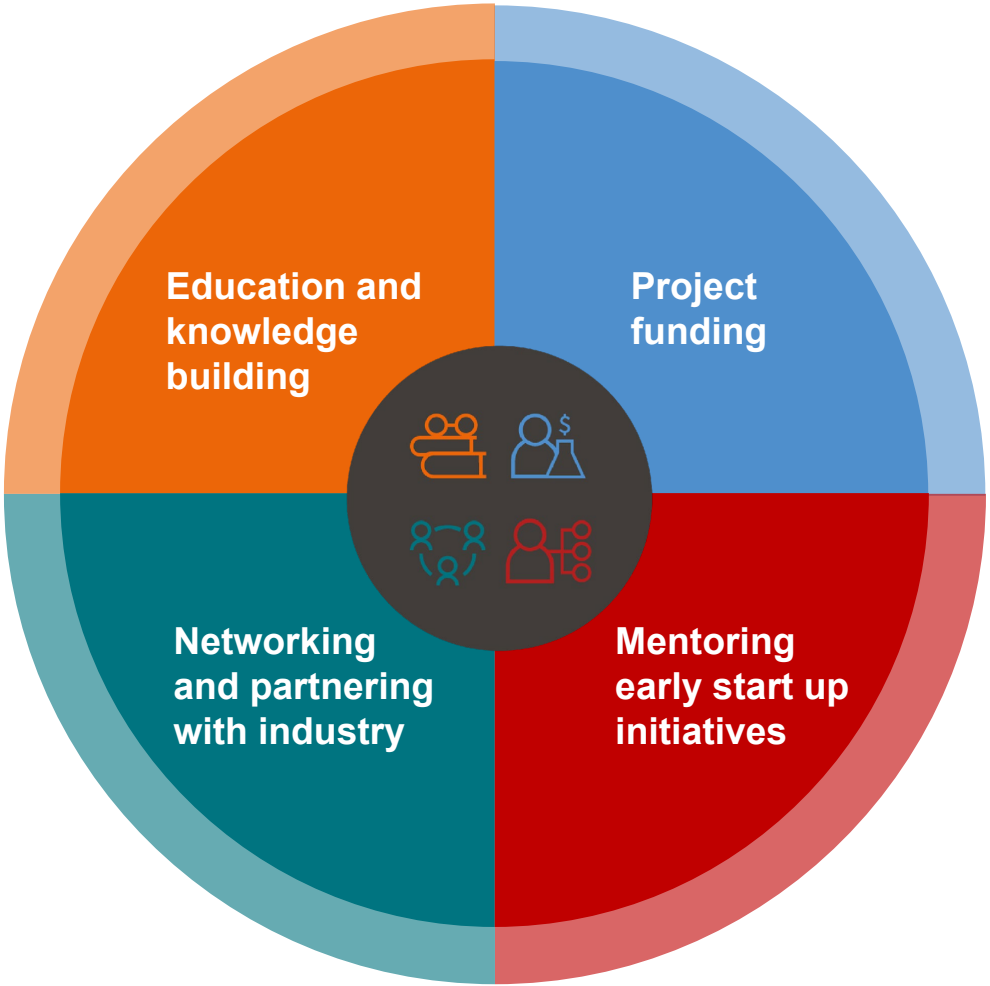
i4L

innovate for life

Bridging the early funding and expertise gap



Pioneering innovation for societal advancement



Education and knowledge building to leverage innovation

- **Master Course: Concept to early stage Drug & MedTech Products Bio-497**
  - 12 external speakers and EPFL experts
  - Topics include drug development, medtech and medical device, food and nutrition, intellectual property (IP), quality assurance, project management, business plan introduction and market access basics
  - 25 master students per year, open to PhD students and Postdocs

- Other relevant EPFL courses
  - Entrepreneurship in life sciences Bio-490
  - The making of an innovative medicine Bio-689
  - Entrepreneurship in food and nutrition science Bio-498
  - MINTT: Management of Innovation and technology transfer ENG-632

Education and knowledge building to leverage innovation

Student internship program at Biopôle

- Immerse master students in start-up culture
- Up to 3 students yearly perform internship in a startup at Biopôle
- Salary equally shared i4L, Biopôle and startup
- 2023 participating companies

biped.ai limula perivision

- 2024 participating companies

Adaptyv Bio limula

Student programs sponsored by EPFL VPI

- Changemakers
  - a 12-week program to turn ideas into real-life projects
  - Open to EPFL bachelor, master and PhD students
  - Next edition October 2024
- Blaze
  - 3-month accelerator program leading student startups up to successful market launch
  - 2x a year

Funding early stage life sciences projects

Provides funding to translate life sciences-related discoveries into products or service with a real societal impact

- Open to all schools across EPFL campuses and antennas
- Supports 3 to 5 pioneering projects per year, 30kCHF/project
- 25 projects funded since 2018

Advisory and selection commitee


Bart Deplancke
Vice Dean of Innovation


Fiorella Ghisays
Head of Life Sciences Innovation


Natalia Giovannini
Technology Transfer Manager


Carlota Guiducci
Professor for Life Sciences Electronics


Christian Heinis
Professor for Therapeutic Proteins and Peptides


Gautam Maitra
Regulatory Affairs Professional


Christoph Merten
Professor for Biomedical Microfluidics


Eric Meurville
Technology Acceleration Manager


Florence Pojer
Head of Protein Production and Structure Core Facility


Gaspard Pardon
Head of Bioengineering and Technology Platform


Freddy Radtke
Professor for Cancer Research

2024 call - awarded projects

- Myriad Optics: a rapid solution for identification of low concentrations of bacterial pathogens on production lines

Marwan El Chazli
Galland lab of Quantum and Nano Optics (SB)

- Dexterous Catheters: novel variable stiffness catheters used for minimally invasive procedures

Yegor Piskarev
Floreano lab of Intelligent Systems (STI)

- Miniature transcriptomics-based ex vivo drug screening for personalized breast cancer therapy

Yueyun Zhang
Brisken lab (SV)

Supported Projects

	Call4Project Title	School	PI	Topics
1	Treatment for Rare Hematologic Diseases	STI	Faouzi Khechana, CEO HemostOD	Drug therapy
2	Treatment against Tuberculosis	SV	Stewart Cole	Drug therapy
3	Vaccine against Respiratory Syncytial Virus	STI	Francesco Stellacci	Vaccine
4	Treatment for Alzheimer	SV	Hilal Lashuel	Drug therapy
5	**Cell Therapy for Cancer**	**STI**	**Li Tang**	**Cell therapy**
6	Nanopore based Sequencing Technology	STI	Aleksandra Radenovic	Medtech technology
7	Whole Genome Diagnostics	SV	Bart Deplancke	Diagnostics
8	Novel material formulation rescuing dental implants	STI	Juergen Brugger	Novel Material
9	A novel bleeding free antiplatelet drug to treat thrombosis	STI	Nikolaos Stergiopulos	Drug therapy
10	**A Microfluidic device for rapid, multiplexed, bead-less chromatin immunoprecipitation with on-chip DNA processing**	**SV**	**Bart Deplancke**	**Medtech technology**
11	A novel automated Zebrafish egg sorter	STI	Frank Bonnet,CEO and co-founder of Bionomous	Medtech technology
12	Conformable and deployable electrode arrays for minimally invasive surgeries	SV	Ayanda Biosystems S.A. (closed company)	Microdevice therapy
13	Your Assistive Grasp Orthosis	STI	Silvestro Micera	Medtech technology
14	**REA Test (Pre-mature birth screen)**	**STI**	**Loulia Kasem**	**Diagnostics**
15	MeniGel	STI	Peyman Karami	Novel Material
16	Mechano-Inhibitors (antibiotics)	STI	Alexandra Radenovic	Drug therapy
17	Antibody-delivered cathepsin inhibitors	SV	Elisa Oricchio	Drug delivery
18	Small molecule based stabilization of native TDP-43	SV	Hilal Lashuel	Drug therapy
19	Phenomic diagnostics by combined molecular and image-profiling per cell	SV	Bart Deplancke	Diagnostics
20	Novel curative CAR NK treatment for cardiac fibrosis	SV	Joerg Huelsken	Cell therapy
21	Flow-driven neurovascular microcatheterization system	STI	Selman Sakar	Microdevice therapy
22	Immunoassay diagnostics by Naialabs	SV	Gregoire Michielin (BET platform)	Diagnostics

(1): Close partnership with Novochizol SA, using nanoparticles to deliver cytokines and immune checkpoint inhibitors inside tumors
(2): Alithea Genomics, a 20 FTE+ HT-Omics start-up
(3): Rea Diagnostics, state-of-the-art tech to monitor the risk of a preterm birth from home

Networking and Partnering with Industry Regular events

- Yearly EPFL startup meet-up to strengthen the community of medtech and biotech startups
- Leverage advantages offered by EPFL ecosystem
- Networking of like-minded people, keynote presentations, round tables
- **October 3, 2024**
  Prof. Patrick Aebischer, Senior Partner at ND Capital and President of EPFL (2000 to 2016)

- Inspirational event twice a year
- Industry professionals provide insights and guidance for career paths in industry or entrepreneurship
- Presentations, workshops, networking with lively atmosphere
- **September 17, 2024**
  Vasant Narasimhan, MD, CEO of Novartis

Mentoring Early Startup Initiatives

Tuesday Entrepreneurship Meetups

Bring your questions, projects and ideas

We are able to help you!

- every Tuesday during the academic year
- 15:00 – 17:00
- Cybercafé Hall SV

Innovate4Life team

Bart Deplancke
Vice Dean of Innovation SV

Gautam Maitra
Program Director SV

Fiorella Ghisays
Life Sciences Innovation VPI-SV

Florence Pojer
Life Sciences Innovation SV

Joanna Rusnok
Administrative Assistant SV

- i4L enhances life sciences translational innovation potential and education
- i4L fills a void in supporting life sciences innovation
- i4L provides an additional dimension to current innovation and educational efforts at EPFL, with full dedication to life sciences

Funding early stage life sciences projects

Innovate4Life supports 3 to 5 pioneering projects each year.

The initiative provides funding to translate life sciences-related discoveries into products or service with a real societal impact.

The call for projects is open to all schools across EPFL campuses and antennas.

Entry Criteria:

Compliance with the 7Ps (***P**lace, **P**roject, **P**romise, **P**eople, **P**lan, **P**atent, **P**eers*)

Funding early stage life sciences projects

Speaker

Selection criteria

- Scientific excellence
- Feasibility of technology validation
- Potential for technology transfer
- Potential societal impact
- Future commercial attractiveness

Funded Projects

- 25 projects funded since 2018
- 2024 call for projects included topics like
  - peptide inhibitors
  - drug platform
  - bacterial detection
  - cancer detection
  - proton therapy
  - Microfluidics
  - magnetic catheters
  - bioreactors

Others Sources of Funding early stage life sciences projects

[blaze EPFL Startup Accelerator – Startup - EPFL]

[Commercialize your research – From Lab to Market - EPFL]

[EPFL Changemakers – Students - EPFL]

Thought-controlled walking again after spinal cord injury

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THANK YOU