Domaine d’Intérêt Majeur (DIM)

Empowering LIfe sCiences with Innovative Technologies (ELICIT)

Call 2019: Co-development of innovative technologies & methods

This call will be open from the 20th of December 2018 to the 15th of March 2019.

Applications will have to be sent to dim.elicit@pasteur.fr.We will acknowledge the receipt of all the applications within a week.

Projects will have to be written in English.

More details about DIM ELICIT philosophy and objectives on:

<https://dim-elicit.fr/>

We are trying to provide clear information on the eligibility criteria in the call description. However, we will be happy to answer further questions and help you check the eligibility of your project prior to the submission. For any question, please contact:

dim.elicit@pasteur.fr

or

axel.bonetto@pasteur.fr (01.45.68.82.26)

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Call description

# Call design:

**Co-development of innovative technologies and methods**

This call has been designed to set up innovative/disruptive technologies which will benefit the Life Science community.

**We will fund exclusively collaborations between:**

* At least one academic research team from the Region Ile de France working on the creation & development of devices or methods, according to the 3 Core Technologies of the DIM (Microfluidics, Biophotonics and waves, Image analysis and Big Data)

**AND**

* At least one academic research team from the Region Ile de France in biology, within the application axis of the DIM ELICIT (see section 6)

The two major partners are encouraged but not required to come from two different institutes.

Additional teams can participate to the project to bring additional specific expertise without geographic limitation. Team out of the region Ile de France will not be funded.

Start-ups and companies can also be associated to the project without geographic limitation.

To help you check whether your consortium is in the scope of this call, please note that the following **examples of consortia are NOT eligible**:

* Co-development with an industrial partner as one of the two major partners (Tech or Biology) 🡺 non-eligible
* Co-development between only several technology partners 🡺 non-eligible
* Co-development between only several biology/biochemistry partners 🡺 non-eligible
* Co-development between several members of the same lab with different expertise 🡺 non-eligible

A clear statement of the **economic impact of technologies** and methods to be developed will be asked as part of the application. This aspect being an important part in the evaluation, project leaders are asked to write this part with their tech transfer department (SATT, internal departments…).

Proof of concept or development of technologies/methods close to industrial applications are encouraged.

# Eligibility criteria:

Any research team from the region Ile de France can apply with a project in line with the aims, positioning and thematic axes of the DIM.

A researcher can only coordinate one project within the framework of this call but can be partner in other projects.

A researcher that has been selected for funding in 2018 cannot apply to this call.

The proposed project should not have been previously supported by another DIM, the SESAME program, a program from the Genopole or a collaborative project from a competitive cluster.

# Awards:

In the context of this call, the DIM ELICIT will fund for each project either a:

* Doctoral allocation (max 36 months + 30k€ of running costs)
* **OR** a post-doctoral allocation (max 24 months + 20k€ of running costs)
* **OR** an engineer salary (max 18 months + 20k€ of running costs)

**AND/OR** equipment purchase (66% max of total cost without VAT) with a maximum participation of 200k€ from DIM ELICIT.

Projects will be ranked irrespectively of the type of requested funding. Fellowships/salaries/running costs will be granted only to the top-ranked projects (typically 5 maximum). The DIM ELICIT will propose to the best runner-up projects to fund only their equipment request (with no personnel/other cost).

# Aims:

**The aim of this call is to promote the emergence of innovations able to address the market of instruments and technologies for Life Sciences (with potential dual applications in healthcare, agronomy or other industrial sectors), in the mid-term.**

The 2019 Co-Development Call aims at supporting interdisciplinary collaborative research projects that will combine:

* First application of technologies or innovative instruments or new methods to biology, with a clear impact and transformative potential in Life Science;

**AND**

* Integration in the SME and industrial value-added chain, in particular in Ile-de-France, in the area of Technologies for Life Sciences either through tech transfer or start-ups creation.

# Core technologies:

* **Microfludics**: micro droplets, lab-on-chip, organ-on-chip, 3D printing, surface patterning, low-cost technologies (paper microfluidics), submicrometric scale microfluidics, nanofluidics…
* **Biophotonic and waves**: acoustic and electromagnetic waves, super-resolution, associated sensor technologies, multiphoton microscopy, visible spectroscopy, terahertz spectroscopy, Raman, innovative probes (nanoparticles, nanosensors, ...), ontogenetic, adaptive optics, photoablation and stimulation, emission tomography positron ...
* **Image analysis and Big Datas:** compressive sensing, tracking, localization, digital pathology, statistical analysis, spatial analysis, harmonic analysis, optimization, automation, deep learning, cloud software deployment, augmented and immersive visualization ...

# End-user applications:

* **Single Cell, single molecule**: technology development to manipulate and to analyze single cell and single molecule in order to understand biological phenomena involved in heterogeneous populations (eg a subset of cells resistant to chemotherapy in a tumor). The ability to act / manipulate before the analytic phase is critical. Breakthrough results are expected with this type of method in immunology, developmental biology, cancer ...
* **Organ on chips:** In order to outperform more and more animal models, these technologies will have to fully mimic biology of tissues and organs (3D aspects, signaling, mechanobiology…). Key applications would be models to understand diseases development, toxicology assessment, drug screening…
* **Technologies for *in vivo* biology:** Animal models remain an essential and critical step to understand complex phenomena such as drug metabolism, psychiatric diseases, or tumors’ development in an organism. Thus, it is essential to rationalize the use of these models through a more and more accurate and efficient extraction of data from these experiments (ad hos microscopy devices, implanted and connected sensors…)
* **High Tech – Low Cost technologies**: Disruptive technologies to ensure affordable access to manipulation and analysis tools of biologic systems in low resources contexts like in developing countries (Low-cost “point of care” diagnosis, low-cost microscopy…)

# Selection process and Evaluation criteria:

Project selection will be organized by the [DIM ELICIT Steering Committee](https://dim-elicit.fr/dim-elicit/) and will be based on external evaluations.

Results will be announced in July 2019.

Applications will be assessed according to the following evaluation criteria:

* Innovation and originality of the proposal
* Scientific quality, implementation, timeline
* Competitive positioning
* Adequacy of resources with the proposed project
* Economic impact and tech transfer potential and perspectives

Application form

**Acronym and title of the project**

1. ***Thematic axis***

**Core Technologies**: Tick the dominant box

|  |  |
| --- | --- |
|  | *Microfluidics* |
|  | *Biophotonics and waves* |
|  | *Image analysis and Big Data* |

**End-user applications:** Tick the dominant box

|  |  |
| --- | --- |
|  | Digital Biology: single-cell and single-molecule analysis |
|  | Organ-on-chips |
|  | Technologies for in vivo biology |
|  | High Tech at Low Cost |

# Teams

*Teams will have to work in different labs but can belong to the same research institute/structure.*

**Team 1 (leader)**

|  |  |
| --- | --- |
| Name of the PI |  |
| Email |  |
| Phone number  |  |
| Lab’s name, number and address  |  |
| COMUE’s name  |  |

Short description of the laboratory:

(Max 10 lines)

|  |
| --- |
|  |

**Team 2**

|  |  |
| --- | --- |
| Name of the PI |  |
| Email |  |
| Phone number  |  |
| Lab’s name, number and address  |  |
| COMUE’s name  |  |

Short description of the laboratory:

(Max 10 lines)

|  |
| --- |
|  |

**Team 3.......**

**Associated company** (if relevant)

|  |  |
| --- | --- |
| Person in charge  |  |
| Email |  |
| Phone Number |  |
| Company’s address |  |

**Short description of the company and of its implication in the project:**

(Max 15 lines)

|  |
| --- |
|  |

# History of collaboration

Have the teams already worked together?

|  |  |  |  |
| --- | --- | --- | --- |
| Yes |  | No |  |

If yes, on which occasion? Please describe

|  |
| --- |
|  |

# Publications

Recent publications related to the project ( max 3 per team)

|  |
| --- |
|  |

# Scientific description of the project

**Abstract**

(Max. 10 lignes)

|  |
| --- |
|  |

**Description of the project***:* state of the art, objectives, time table, description and figures, deliverables and project plan, innovative aspects, description of scientific projects to be conducted on the technology

For each piece of equipment requested, please specifically describe and justify it:

(Max. 5 pages, Times 11)

|  |
| --- |
|  |

**Technology readiness level**

(Max 0,5 page, Times 11)

Please comment on the envisioned time to start-up creation/tech transfer after the completion of the project.

You can use the positioning in the Technology Readiness Level scale of the European Commission.

|  |  |
| --- | --- |
| **Technology Readiness Level** | **Description** |
| TRL 1. | Basic principles observed |
| TRL 2. | Technology concept formulated |
| TRL 3. | Experimental proof of concept |
| TRL 4. | Technology validated in lab |
| TRL 5. | Technology validated in relevant environment (industrially relevant environment in the case of key enabling technologies) |
| TRL 6. | Technology demonstrated in relevant environment (industrially relevant environment in the case of key enabling technologies) |
| TRL 7. | System prototype demonstration in operational environment |
| TRL 8. | System complete and qualified |
| TRL 9. | Actual system proven in operational environment (competitive manufacturing in the case of key enabling technologies; or in space) |

|  |
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|  |

**Economic potential impact and strategy of Tech Transfer**

(Max 0,5 page, Times 11)

Inputs of your patent office / tech transfer office are very recommended

|  |
| --- |
|  |

**Adequacy with the DIM ELICIT objectives**

(Max 0,5 page, Times 11)

|  |
| --- |
|  |

# Resources that will be available to achieve the scientific project

**Persons involved in the project**

|  |  |  |
| --- | --- | --- |
| Name | Position | Percentage of implication |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

**Equipment expected to be used in the project**

List the equipment the equipment that will be used in the project, except the one that will be purchased.

|  |
| --- |
|  |

# Additional information for salaries/fellowship/running costs

Has the candidate already been identified? (Please join the resume of the candidate to your application)

|  |  |  |  |
| --- | --- | --- | --- |
| Yes |  | No |  |

**Host institution**

Which structure will perform the recruitment?

|  |
| --- |
|  |

# Additional information for equipment

**Total cost of the equipment**

|  |  |
| --- | --- |
|  | € HT  |

**Amount of funding requested**

|  |  |
| --- | --- |
|  | €  |

|  |  |
| --- | --- |
|  | % total cost |

You shall respect the maximum rate of 66% and a maximum amount of 200k€.

**Co-funding plan**

Please indicate the amount and the percentage of implication of each co-funder.

NB: Co-funding letters signed by a qualified person will be asked to laureates before the signature of the funding agreement.

|  |
| --- |
|  |

**Host institution**

Which structure will purchase the equipment?

|  |
| --- |
|  |

**Equipment localisation**

|  |  |
| --- | --- |
| Laboratory: |  |
| Site: |  |

**Envisioned date of equipment purchase**

|  |
| --- |
|  |

**Equipment list**

Please include quotes

For internal developments assembling components into a device, no quote for small parts (< 1000 euros/piece) is required

|  |
| --- |
|  |

# Signatures

**Team 1 (leader)**

|  |  |
| --- | --- |
| First name, surname  |  |
| Position  |  |
| Location |  |
| Date  |  |
| Signature |   |

**Team 2**

|  |  |
| --- | --- |
| First name, surname  |  |
| Position  |  |
| Location |  |
| Date  |  |
| Signature |   |

**Team 3......**