Domaine d’Intérêt Majeur (DIM)

Empowering LIfe sCiences with Innovative Technologies (ELICIT)

Call 2020

Dissemination of Innovative Technologies for Life Sciences

This call will be open from the 4th of February 2020 to the 20th of April 2020.

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:

**Dissemination of new technologies or methods for new applications in Life Sciences** (**noncommercial methods and/or instruments)**

*This call has been designed to support the establishment of competitive technology platforms and to introduce relevant prototypes in biological research environments.*

**We will fund collaborations between:**

* At least one academic research team from the region Ile de France working on the creation of devices or methods, according to the 3 Core technologies of the DIM (Microfluidics, Biophotonics and waves, Image analysis and Big Data). This team – the “Technology Team” - will set up or purchase an innovative instrument and will lead the action of dissemination;

**AND**

* At least 2 additional academic research teams -“Application teams”- from the region Ile de France working on applied biology which will demonstrate the competitive advantages brought by the new technology/methods for their research. The research should fit in the scope of the 4 End-user applications axis of the DIM ELICIT (see section 6).

Participation of research teams belonging to different institutes are encouraged. A start-up company can be associated to the project but will not have access to fund.

**We will consider projects proposing:**

* The duplication in a biology environment of an existing noncommercial prototype previously developed by the Technology Team;
* The adaptation by the Technology Team of an existing prototype to fit specific applications and its implementation in the end-user environment.

The Technology Readiness Level (TRL) expected for this call is higher than for the Co-Development call. We will not consider totally new/invalidated technologies. A preexisting publication or patent of the technology team showcasing the technology is a must.

The envisioned equipment can be manufactured by a private third party under the supervision of the Technology Team.

**Some examples regarding eligibility:**

* Development by technology partner of an add-on/adaptation to a technology commercialized by a spin-off company of the lab, and dissemination in at least 2 laboratories 🡺 eligible, and highly favored if said spin-off is based in the Region Ile de France
* Development by technology partner of an add-on/adaptation to a technology commercialized by a third party, and dissemination in at least 2 biology laboratories 🡺 eligible only if the company express interest on the commercialization of the new technological developments (letter to be provided with the application)
* Development of new protocols on a commercially available device, without modification of the device 🡺 non-eligible

## 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 2019 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:

* equipment(66% max of total cost without VAT) with a maximal participation of 200k€ from DIM ELICIT

**AND/OR**

* Engineer salary (max 12 months): this engineer will install the prototype and will provide assistance to the biology teams to adapt and use the technology

Projects will be ranked irrespectively of the type of requested funding. Engineer salary will be granted only to the top-ranked projects. 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 Dissemination Call 2019 aims at supporting interdisciplinary collaborative research projects that will combine:

* Implementation of disruptive technologies or methods in biology, the disruptiveness criteria being assessed regarding their impact and transformative nature;

**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.

**AND**

* Integration in an open access environment for Life Sciences research teams.

## 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 2020.

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**

# 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.*

*Please do not mention more than 5 research teams in biology (Application Teams)*

### **Technology team**

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

Short description of the laboratory:

(Max 10 lines)

|  |
| --- |
|  |

### Application team 1

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

Short description of the laboratory:

(Max 10 lines)

|  |
| --- |
|  |

### Application 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)

|  |
| --- |
|  |

### Application team 3

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

Short description of the laboratory:

(Max 10 lines)

|  |
| --- |
|  |

### **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)

|  |
| --- |
| The company should provide a letter demonstrating its interest in commercializing new results, ideally signed by an executive of the company. |

## 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. 4 pages + ½ page per Application Team, 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

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### **Adequacy with the DIM ELICIT objectives**

(Max 0,5 page, Times 11)

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| --- |
|  |

## Resources that will be available to achieve the scientific project

### Persons involved in the project

Please demonstrate that the human resources are adequate to run the project smoothly.

|  |  |  |
| --- | --- | --- |
| 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 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.

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|  |

### Host institution (Equipment)

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| --- |
|  |

### 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

**Technology Team**

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

**Application team 1**

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

**Application team 2**

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

**Application team 3**

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