The Paris Region

Fellowship Programme

**Application form**



**Call 1 deadline: October, 21st, 2020, 17:00 CET**

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**DOCUMENTS REQUESTED AND FURTHER INFORMATION**

* The following documents must be joined to the application, and named as follows:
* “**NameApplicant\_ApplicationForm**” (fully dated and signed)
* “**NameApplicant\_ID**” (a copy of the identity proof, like valid passport)
* “**NameApplicant\_CV-TrackRecord**” (max 5 pages)
* “**NameApplicant\_ResearchProject**” (max 7 pages)
* “**NameApplicant\_PhDdegree**” or **“NameApplicant\_PhDLetterofCommitment”** (a letter in English from the PhD delivering University to attest the near future delivery of the PhD) or “**NameApplicant\_WorkCertificate**” (if no PhD degree at all). For the PhD degree / work certificate(s), a copy of the original and non-certified English-translated copies are needed (certified translations will be requested in case applicant is selected).
* “**NameApplicant\_RecommendationLetter1**” and “**NameApplicant\_RecommendationLetter2**” (in English. The letters shall be sent by mail to prfp@iledefrance.fr by the person providing the letter)
* If applicable: “**NameApplicant\_EthicsSelf-Assessment**”
* In order to prepare correctly the application, the Application Guide must be consulted beforehand on <https://parisregionfp.sciencescall.org/>. Please check especially the Section 7.4 Evaluation Criteria.
* For any question, please contact : prfp@iledefrance.fr

#  APPLICANT

## Administrative data

|  |  |
| --- | --- |
| Name, first name |  |
| Place of birth (city, country) |  |
| Date of birth |  |
| Sex |  |
| Nationality |  |
| Nationality 2 |  |
| Home address |  |
| Current place of residence |  |
| Current organization name |  |
| Home telephone |  |
| Work telephone |  |
| E-mail |  |
| ORCID-ID (publicly available) |  |
| Country in which PhD or equivalent awarded |  |
| Date PhD awarded (or to be awarded) | DD/MM/YYYY |
| Proposed starting date for the 24-month fellowship (possible between April, 1st, 2021 and September, 1st, 2021) | DD/MM/YYYY |
| I would like to apply for MSCA Special Needs Allowance (see 1.3) | Yes/No |
| How did you find about the call? | By mail, internet, social media, jobportals like Euraxess, publication in scientific journals, other (please describe) |

## Place of activity / place of residence

Indicate the period(s) and the country/countries in which you have legally resided and/or had your main activity (work, status, ..) **during the** **last 3 years up until the call deadline (October, 21st, 2020)**. Please fill in this section without gaps by putting the most recent one first.

|  |  |  |
| --- | --- | --- |
| **Period from (DD/MM/YYY)** | **Period to (DD/MM/YYY)** | **Country**  |
| … | 21/10/2020 |  |
|  |  |  |
|  |  |  |
| 22/10/2017 | … |  |

## CV - track record

Please enclose your CV-Track Record to your application (*“****NameApplicant\_CV-TrackRecord****”*). Please send also a copy of your PhD degree (name it as : *“****NameApplicant\_PhDdegree****”*). Or alternatively please provide a letter in English from the PhD delivering University to attest the near future delivery of the PhD (name it as: **“NameApplicant\_PhDLetterofCommitment”**). If you do not have a PhD degree (and it is not planned either), provide Work certificate(s) (name it/them as: “**NameApplicant\_WorkCertificate**”). For the two latter cases, please fill in carefully the section 1.4.

The CV-Track record should be limited to a max 5 pages in total (incl. list of publications) and should include the standard academic and research record.

We recommend you to include the following information (exhaustive list, please select what is applicable for you):

*1. Education*

*2. Current and previous positions (please highlight international and cross-domain experience)*

*3. Fellowships, prizes and awards. Institutional responsibilities. Memberships of scientific societies.*

*4. Teaching, supervising and mentoring activities*

*5. Scientific evaluation/ reviewing activities*

*6. Organization of international conferences in your field(s) of research, including membership in the steering and/or programme committee.*

*7. Examples of participation in industrial innovation, and granted patents. Any other extra-academic professional activity*

*8. Funding received so far, and on-going fellowship and grant applications*

*9. Major collaborations*

*10. Career breaks*

*11. 10 major publications in peer-reviewed scientific journals, peer-reviewed conference proceedings and/or monographs of their respective research fields, indicating also the number of citations (excluding self-citations) they have attracted*

*12. Research monographs, chapters in collective volumes and any translations thereof*

*13. Invited presentations to peer-reviewed, internationally established conferences and/or international advanced schools*

*14. Research expeditions led by the applicant*

*15. Any other track record item that permits to evaluate the applicant’s potential for leadership, openness and creativity, and communication (including outreach) skills*

Please notice that any research career gaps and/or unconventional paths should be clearly explained (reason/ duration) so that this can be fairly assessed and taken into account by the independent evaluators.

MSCA Special Needs Allowance (max 60,000 € per researcher) will be solicited for the fellows for who the long-term physical, mental, intellectual or sensory impairments are as such that their participation in ParisRegionFP would not be possible without extra financial support. This grant will cover the additional mobility costs, e.g. to ensure necessary assistance by third persons or for adapting the researchers’ work environment (social security and health insurance will be covered by other means). Please explain if applicable.

## Calculation of the total full-time postgraduate research experience

**The following table is only to be filled out if the applicant does not have a PhD degree at call deadline :**

Researchers without a doctorate at the call deadline should clearly detail any period of full-time equivalent research experience in the CV. It is essential that the CV clearly explains how the research experience is calculated, following the template below.

|  |
| --- |
| **Academic qualifications counting towards the total full-time postgraduate research experience** |
| University degree giving access to PhD[[1]](#footnote-1): | Institution name and country  | Date of award (a) |   |
|   | DD/MM/YYYY |
| Other university degree(s)/master(s), if any, obtained after the award of the university degree giving access to PhD: | Institution name and country  | From | To |
|   | DD/MM/YYYY | DD/MM/YYYY |
| Full time research experience | Proportion of research activities as a percentage of the duration of the Master |  Duration of research activities expressed in months |
| xx % | (b)[[2]](#footnote-2) = xx% \* duration of Master |
| Doctorate:  | Institution name and country  | From | To (Date of expected Award) |
|   | DD/MM/YYYY | DD/MM/YYYY |
| Full time research experience[[3]](#footnote-3) |   | Duration of research activities expressed in months |
| (c) |
| **Other research activities counting towards the total full-time postgraduate research experience** |
| Position: | Institution name and country  | From | To |
|   | DD/MM/YYYY | DD/MM/YYYY |
|   | Full time research experience |   | Duration of research activities expressed in months |
| (d) |
| **Total full-time postgraduate research experience: number of months** | **= (b)+(c)+(d)** |

## Recommendation letters

Two recommendation letters should be provided for your application (*“****NameApplicant\_RecommendationLetter1****”* and *“****NameApplicant\_RecommendationLetter2***”).

The letters should be provided from prior supervisors, professors, co-workers, and they shall precise their position (director, researcher, etc.), title (Prof., Dr., Mr., Mrs.,..), name, first name, e-mail, and telephone number. Please notice that the recommendation letter cannot be provided from your future host. **The letters shall be sent by mail to** prfp@iledefrance.fr **by the person providing the letter**. The letters are not thus provided with the other supplementary documents via the call platform.

**No application can be completed without all the information required, including the two reference letters.**

# FUTURE HOST ORGANIZATION AND SUPERVISOR

Based on individual-driven mobility, applicants will freely choose a research topic and the appropriate host (and secondment) organization and supervisor(s) fitting their scientific interest. It will be up to the applicants to search and contact the most suitable host organization/ laboratory (and secondment organization(s)) and supervisor(s) to discuss a potential cooperation and the research project.

To facilitate the search, the names and contact information of the laboratories linked to the Domains of Major Interest (DMI) are available on the call platform. The programme accepts also host laboratories situated in the Paris Region, even if they are not part of a DMI.

1.
2.

## Future host organization/ laboratory

|  |  |
| --- | --- |
| Name and short name of the organization |  |
| Department/ laboratory |  |
| Code of the department/ laboratory/ unit |  |
| Address |  |
| E-mail |  |
| Telephone |  |
| Domain of Major Interest (DMI) the host laboratory / team is attached to. If not applicable, DMI(s) closest to the scientific expertise of the host laboratory/team | Please indicate which DMI(s) is(are) concerned: ACAV+, MAP, MATH’INNOV, ONEHEALTH, RESPORE, SIRTEQ, QI2, THERAPIE GENIQUE, ELICIT, RFSI, ISLAM (PhASIF), GEROND’IF, STCN |
| I have established a contact with the host organization/ laboratory | Yes (mandatory) |
| **My contact at the host organization/ laboratory**  |
| Position (director, researcher, etc.) |  |
| Title (Prof., Dr., Mr., Mrs.,..) |  |
| Name, first name |  |
| E-mail |  |
| Telephone |  |
| Additional information |  |

## Future supervisor

|  |  |
| --- | --- |
| Name, first name  |  |
| Position (director, researcher, etc.) |  |
| Title (Prof., Dr., Mr., Mrs.,..) |  |
| Name and short name of the organization | If not same as above |
| Department/ laboratory |  |
| Code of the department/ laboratory/ unit |  |
| Address |  |
| E-mail |  |
| Telephone |  |
| I have established a contact with the future supervisor | Yes (mandatory) |
| Additional information |  |

## Future host organization for secondment (if applicable)

Secondments consist typically of a short research stay (up to 3 months over the 2-year fellowship) in the premises of the host for secondment. Please notice that the secondments are taken into account in the evaluation criteria[[4]](#footnote-4)*.*

Please duplicate the table in case of more than one secondment envisaged.

|  |  |
| --- | --- |
| Name and short name of the organization  |  |
| Department/ laboratory |  |
| Code of the department/ laboratory/ unit |  |
| Address |  |
| E-mail |  |
| Telephone |  |
| I have established a contact with the future host organization for secondment | Yes/No. Please indicate if the secondment is confirmed or not (yet). |
| I have not contacted the future host organization for secondment but would like to benefit from this possibility | Yes/No/NA. If Yes, please motivate your demand in the description of your research project  |
| **My contact at the organization for secondment** |
| Position (director, researcher, etc.) |  |
| Title (Prof., Dr., Mr., Mrs.,..) |  |
| Name, first name |  |
| E-mail |  |
| Telephone |  |
| Additional information |  |

## Motivation to choose the selected future host laboratory, and secondments if applicable

In order to be competitive in the ParisRegionFP call, you need to propose an original, ambitious and feasible project with interesting future career perspectives for which the host laboratory (and possible secondment(s)) is (are) an evident choice.

Please explain shortly (max 1 page):

* What is the origin of the project, how did you get the idea?
* Your personal motivation to choose this particular laboratory/research group and supervisor(s) for your postdoctoral research experience. Why they are an excellent choice to perform your research project?
* How your track record, expertise and project is complementary with that of the host including the thematic perimeter of the host, and how you and your project will integrate there (explain the envisaged two-way knowledge transfer between you and the host).
* Justify the feasibility of the project (methodologies, adequacy of the budget and available resources like equipment, expertise etc. at the host).

# RESEARCH PROJECT

1.

## Title

Please provide the title of the project with max 200 characters, and understandable to the non-specialist.

## Abstract

Please provide non-confidential abstract of the project with max 2000 characters: Context, main objectives, 3i-character (international, interdisciplinary, intersectoral) of the project (if applicable), impact on research & career. If you are awarded for the fellowship, the abstract will be used in further communication actions.

## Descriptors and free keywords

Please provide min 2, max 5 descriptors (in the order of importance, the first being the most important and most relevant for the proposal), selected from the list in Annex 1:

|  |  |
| --- | --- |
| Descriptor 1 |  |
| Descriptor 2 |  |
| Descriptor 3 |  |
| Descriptor 4 |  |
| Descriptor 5 |  |

Free keywords: Please provide a list of keywords with a max 200 characters.

The descriptors and keywords will be mainly used to determine the most suitable experts for the evaluation of the application.

## Description of the research project

Please provide a max 7-page description of your research project (incl. references) for a 2-year duration (name it as: *“****NameApplicant\_ResearchProject****”*), following the below structure. This must be written by the applicant using standard police (Arial/Times/Calibri etc., size 11, margins 1.5). A simple template is provided in the call platform.

1. **EXCELLENCE :** General context, concept of the project. Objectives and methodology (any novel concepts, approaches or methods that will be employed, interdisciplinarity and feasibility of the research). Originality: How the project goes above the current state-of-the-art
2. **IMPACT:** Expected impact on the research area, measures to exploit and disseminate the project results, and to communicate the project activities to different target audiences. Expected impact on the professional career development (immediate and long-term goals, your “pathway to independence”)
3. **IMPLEMENTATION:** Work plan / timeline or Gantt chart with clear milestones and review points. Description of risks / contingency plans. If applicable, please include the description and planning (international/ intersectoral) secondments
4. **RESSOURCES:** Estimated total research costs and resources needed to implement the envisaged research project, as elaborated with the host laboratory.

**Standard allocation for each fellow[[5]](#footnote-5)**:

• Living allowance : 56 880 €/ year (4 740€/month);

• Mobility allowance : 2 640 € / year. This allowance can, for example, cover the travel costs of family visits or provide support for housing in the Paris Region;

• Travel allowance : 1 200€ / year, covering registration fees, accommodation and travel expenses, to be used by the fellow for career development purposes, including participation to international conferences, seminars;

• Research costs : 3 720 € / year, is allocated by Paris Region to the host for any expenses linked to the research project implementation including publications. **If the applicant’s estimated total research budget is above that limit, supplementary budget needs to be justified/ agreed with the host organization.**

In addition to the above categories, the ParisRegionFP programme budget covers also the cost of the training programme, and administrative costs.

Please use this table to detail the research costs needed to implement your project in concertation with the host organization:

|  |  |  |  |
| --- | --- | --- | --- |
| **Research cost category** | **Details - justifications** | **Cost per month (€)** | **Total cost for 24-month fellowship (€)** |
| Scientific equipment  |  |  |  |
| Other goods and services (like materials, supplies, publication costs, .. please detail) |  |  |  |
| Subcontracting  |  |  |  |
| Any other costs (please detail) |  |  |  |
| Total  |  |  |  |

## Ethics self-assessment

Please complete the table below. For full guidelines on each area, please refer to the H2020 ethics self-assessment guide available at :

<http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/ethics/h2020_hi_ethics-self-assess_en.pdf>

[ ]  “*I confirm that I have taken into account all ethics issues described below and that, if any ethics issues apply (any Yes identified in the below table), I will complete an ethics self-assessment document following the H2020 ethics self-assessment guide and attach the required documents to my application.”*

Please name this ethics package as: *“****NameApplicant\_EthicsSelf-Assessment****”*.

|  |  |  |
| --- | --- | --- |
|  | Yes | No |
| 1. **Human embryos/foetuses**
 |
| Does your research involve Human Embryonic Stem Cells (hESCs)[[6]](#footnote-6)?  |  |  |
| Will they be directly derived from embryos within this project? |  |  |
| Are they previously established cell lines? |  |  |
| Does your research involve the use of human embryos? |  |  |
| Will the research lead to their destruction? |  |  |
| Does your research involve the use of human foetal tissues/cells? |  |  |
| 1. **Humans**
 |
| Does your research involve human participants? |  |  |
| Are they volunteers for social or human sciences research? |  |  |
| Are they persons unable to give informed consent? |  |  |
| Are they vulnerable individuals or groups? |  |  |
| Are they children/minors? |  |  |
| Are they patients? |  |  |
| Are they healthy volunteers for medical studies? |  |  |
| Does your research involve physical interventions on the study participants? |  |  |
| Does it involve invasive techniques? |  |  |
| Does it involve collection of biological samples? |  |  |
| If your research involves processing of genetic information, see also section 4. |  |
| 1. **Human cells/tissues**
 |
| Does your research involve human cells or tissues (other than from Human Embryos/Foetuses, i.e. section 1)? |  |  |
| Are they available commercially? |  |  |
| Are they obtained within this project? |  |  |
| Are they obtained within another project, laboratory or institution? |  |  |
| Are they deposited in a biobank? |  |  |
| 1. **Personal data**
 |
| Does your research involve personal data collection and/or processing? |  |  |
| Does it involve the collection and/or processing of sensitive personal data (e.g. health, sexual lifestyle, ethnicity, political opinion, religious or philosophical conviction)? |  |  |
| Does it involve processing of genetic information? |  |  |
| Does it involve tracking or observation of participants? |  |  |
| Does your research involve further processing of previously collected personal data (secondary use)? |  |  |
| 1. **Animals**
 |
| Does your research involve animals?  |  |  |
| Are they vertebrates? |  |  |
| Are they non-human primates? |  |  |
| Are they genetically modified? |  |  |
| Are the cloned farm animals/ |  |  |
| Are they endangered species? |  |  |
| Please indicate the species involved (max 1000 characters) |  |  |
| 1. **Third countries**
 |
| In case of non-European countries are involved, do the research related activities undertaken in these countries raise potential ethics issues? If yes, please specify the countries involved (max 1000 characters):Please notice that “*in case activities undertaken in non-EU countries raise ethics issues, the applicants must ensure that the research conducted outside the EU is legal in France”.* |  |  |
| Do you plan to use local resources (e.g. animal; and/or human tissues samples, genetic material, live animals, human remains, materials for historical value, endangered fauna or flora samples, etc.)? |  |  |
| Do you plan to import any material from non-EU countries into the EU?*For data imports, please fill in also section 4.**For imports concerning human cells or tissues, fill in also section3.*If yes, please specify the material and countries involved (max 1000 characters): |  |  |
| Do you plan to export any material from non-EU countries into the EU?*For data exports, please fill in also section 4.**For exports concerning human cells or tissues, fill in also section3.*If yes, please specify the material and countries involved (max 1000 characters): |  |  |
| If your research involves low and/or lower middle income countries[[7]](#footnote-7), are benefits-sharing measures foreseen? |  |  |
| Could the situation in the country put the individual taking part in the research at risk? |  |  |
| 1. **Environment, and health and safety**
 |
| Does your research involve the use of elements that may cause harm to the environment, to animals or plants?*For research involving animal experiments, please fill in also section 5.* |  |  |
| Does your research deal with endangered fauna and/or flora and/or protected areas? |  |  |
| Does your research involve the use of elements that may cause harm to humans, including research staff? |  |  |
| 1. **Dual use**
 |
| Does your research involve dual-use items in the sense of Regulation 428/2009[[8]](#footnote-8), or other items for which an authorisation is required? |  |  |
| 1. **Exclusive focus on civil applications**
 |
| Could your research raise concerns regarding the exclusive focus on civil applications? |  |  |
| 1. **Misuse**
 |
| Does your research have the potential for misuse (malevolent/criminal/terrorist abuse,..) of research results? |  |  |
| 1. **Other ethics issues**
 |
| Are there any other ethics issues that should be taken into consideration? If so, please specify (max 1000 characters): |  |  |

# DECLARATIONS OF HONOR AND SIGNATURE

[ ]  I declare that *“in compliance with the Marie Sklodowska-Curie mobility rule, I have not / will not have resided or carried out my main activity (work, studies, etc.) in France for more than 12 months in the last three years before the call deadline (October, 21st, 2020)”.*

[ ] I declare that *“I am / will be in possession of a doctoral degree[[9]](#footnote-9) or have at least four years of full-time equivalent research experience (as detailed in Table 1.4) at the date of the recruitment”.*

[ ]  I declare that *“I have read the Application Guide / Frequently Asked Questions of the programme, and the references therein, and understand and agree on the requirements, obligations and conditions inherent to the fellowship programme financed by the European Union’s Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie actions”.* These requirements, obligations and conditions for example concern (non-exhaustive list) the mandatory training events, Open Access to scientific publications and research data, fundamental principles of Ethics and Research Integrity, declaration of any conflict of interest..

[ ]  I declare that *“the information that I have given on this Application Form is complete and accurate”*.

[ ]  I declare that, *“except as otherwise stated on this form, I have not started the project which forms the basis of this application and no expenditure has been committed or defrayed on it”.*

[ ]  I declare that *“the research project including the budget and ressources submitted in this application has been elaborated in concertation with the host laboratory”.*

First Name, Name :

Date:

Signature:

# ANNEX1: DESCRIPTORS

Please use this list to provide the descriptors in section 3.3. As an example, a descriptor is Bioinorganic chemistry or again Catalytic materials (thus not the title C1 – Inorganic chemistry).

**Chemistry (CHE)**

|  |
| --- |
| **C1 – Inorganic Chemistry** |
| Bioinorganic chemistry | Catalytic materials | Coordination chemistry |
| Chemistry of non-metals | Inorganic chemistry | Organometallic chemistry |
| Radiation and nuclear chemistry | Solid state materials |  |
| **C2 – Organic, Polymer and Molecular Chemistry** |
| Carbohydrates | Chirality | Click chemistry |
| Combinatorial chemistry | Heterocyclic chemistry | Macromolecular chemistry |
| Molecular architecture and structure | Molecular chemistry | Natural product synthesis |
| Nucleic acid chemistry | Organic chemistry | Organic reaction mechanisms |
| Peptide chemistry | Polymer chemistry | Stereochemistry |
| Supramolecular chemistry | Synthetic organic chemistry |  |
| **C3 – Physical and Analytical Chemistry** |
| Analytical chemistry | Chemical instrumentation and instrumental techniques | Chemical reactions: mechanisms, dynamics, kinetics and catalytic reactions |
| Chemistry of condensed matter | Crystallography and X-ray diffraction | Chromatography |
| Colloid chemistry | Corrosion | Crystallisation |
| Electrochemistry, electro dialysis,microfluidics, sensors | Forensic chemistry | Homogeneous catalysis |
| Heterogeneous catalysis | Ionic liquids | Magnetic resonance |
| Mass spectrometry | Method development in chemistry | Microscopy |
| Molecular dynamics | Molecular electronics | Photocatalysis |
| Photochemistry | Physical chemistry | Physical chemistry of biological systems |
| Quantum chemistry | Separation techniques/extraction | Spectroscopic and spectrometric techniques |
| Surface chemistry | Theoretical and computational chemistry | Trace analysis |
| **C4 – Applied and Industrial Chemistry** |
| Batteries | Biological chemistry, biochemistry | Biomaterials, biomaterial synthesis |
| Ceramics | Coating | Enzymology |
| Food chemistry | Fuel cells | Graphene, carbon nanotubes |
| Green chemistry | Hydrogen production/storage | Intelligent materials, self-assembled materials |
| Materials for sensors | Medicinal chemistry | Nanochemistry |
| Nano-materials: oxides, alloys, composite, organic-inorganic hybrid, nanoparticles | Pharmaceutical processes and production, Regulatory aspects, quality assurance, good manufacturing practice | Plastics |
| Porous materials, metal organic framework (MOFs) | Solar cells | Structural properties of materials |
| Surface modification | Targeted drug delivery/discovery | Thin films |
| Toxicology | Water splitting | Water treatment/purification |

**Economic Sciences (ECO)**

|  |
| --- |
| **E1 – Economics** |
| Applied research econometrics | Behavioural and experimental economics | Economic geography |
| Economic growth | Economic history | Economics of education |
| Environment economics | Financial econometrics | Game theory |
| Global macroeconomic challenges | Health economics | Industrial economics |
| International trade | Labour economics | Macroeconomics theory |
| Monetary economics, international finance | Political economy | Public economics |
| Social economics, welfare economics | Statistics and big data | Urban and regional economics |
| **E2 – Economic Development** |
| Circular economy | Cluster development | Environment issues in development economics |
| Key enabling technologies for development | Natural resources management | Public administration |
| Research & Open innovation, Competitiveness |  |  |
| **E3 – Management** |
| Corporate governance and management | Human resources management | Industrial organization |
| Research and innovation management | Start-up's, new business models in entrepreneurship, social entrepreneurship | Strategy, marketing |
| Value chain and optimisation |  |  |
| **E4 – Finance** |
| Accounting, international accounting standards, reporting, tax issues related to Accounting | Banks, insurance companies, financial intermediaries & fund, credit rating Agencies | Corporate finance, fundamentals analysis, capital budgeting, venture capital, risk assessment |
| Financial markets, stock markets, fixed income markets, other markets investments, asset pricing, bonds, derivatives, Commodities |  |  |

**Information Science and Engineering (ENG)**

|  |
| --- |
| **G1 - Computer science and informatics** |
| Algorithms, distributed, parallel and network algorithms, algorithmic game theory | Artificial intelligence, intelligent systems, multi agent systems | Bioinformatics, e-Health, medical informatics |
| Cognitive modelling, cognitive engineering, cognitive sciences | Complexity and cryptography, electronic security, privacy, biometrics | Theorem proving, symbolic, algebraic computations |
| Pervasive computing, ubiquitous computing, ambient intelligence, internet of things | Computer games, computer geometry, multi-media, augmented and virtual reality | Computer graphics, computer vision, multimedia, computer games |
| Parallel/distributed systems, GPGPU, grid, cloud processing systems | E-commerce, e-business, computationalFinance | E-learning, user modelling, collaborative systems |
| Intelligent robotics, cybernetics | Internet and semantic web, ontologies, database systems and libraries | Machine learning, data mining, statistical data processing and applications |
| Modelling engineering, human computer interaction, natural language processing | Numerical analysis, simulation, optimisation, modelling tools | Scientific computing and data processing |
| Sensor networks, embedded systems, hardware platforms | Software engineering, operating systems, computer languages | Neural networks, connectionist systems, fuzzy logic |
| Evolutionary computing, biologically-inspired computing | Theoretical computer science, formal Methods | Quantum computing, DNA computing, photonic computing |
| **G2 - Systems and Communication Engineering: Electrical, electronic, communication, optical and systems engineering** |
| Control Engineering | Diagnostic and implantable devices, environmental monitoring | Electrical and electronic engineering: semiconductors, components, systems |
| Electronics, photonics | Human-computer-interfaces | Nano engineering |
| Networks (communication networks, sensor networks, networks of robots, etc.) | Optical engineering, photonics, lasers | Signal processing |
| Simulation engineering and modelling | Systems engineering, sensorics, actorics, automation | Wireless communications, communication, high frequency, mobile technology |
| **G3 - Products and Processes Engineering: Product design, process design and control, construction methods, civil engineering, energy processes, material engineering** |
| Aerospace engineering | Architecture, smart buildings, smart cities, urban engineering | Chemical engineering, technical chemistry |
| Civil engineering | Computational engineering and computer aided design | Energy collection, conversion and storage, renewable energy |
| Energy systems, smart energy, smart grids, wireless energy transfer | Environmental engineering and geotechnics | Fluid mechanics, hydraulic-, turbo-, and piston engines |
| Industrial bioengineering | Industrial design (product design, ergonomics, man-machine interfaces, etc.) | Lightweight construction, textile technology |
| Maritime engineering | Materials engineering | Mechanical and manufacturing engineering (shaping, mounting, joining, separation) |
| Production technology, process engineering | Sustainable design (for recycling, for environment, eco-design) | Transport engineering, intelligent transport systems |
| Waste treatment |  |  |

**Environmental and Geosciences (ENV)**

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| **V1 - Environment and society** |
| Clean technologies, circular economy, life cycle assessment | Environmental determinants of health | Environmental regulations, climate negotiations and citizen science |
| Environmental risk assessment, monitoring | Mobility and transportation | Social and industrial ecology,sustainable development |
| Spatial and regional planning (including landscape and land management), GIS | Urbanization and urban planning, cities | Waste, by-products and residue management (including from agriculture) |
| **V2 - Earth system science** |
| Atmospheric chemistry, atmospheric composition, air pollution, indoor air quality | Biogeochemistry, biogeochemical cycles | Clean exploration and exploitation of natural resources |
| Climatology and climate change | Cryosphere, dynamics of snow and ice cover, sea ice, permafrost and ice sheets | Earth observations from space/remote sensing |
| Environmental chemistry, environmental forensics | Geochemistry, crystal chemistry, isotope, geochemistry | Geology, tectonics, volcanology, physics of earth's interior, seismology |
| Hydrology, water management | Meteorology, atmospheric physics and dynamics | Mineralogy, petrology, igneouspetrology, metamorphic petrology |
| Natural hazards | Noise pollution | Oceanography, marine science, coastal engineering |
| Paleoclimatology, paleoecology | Physical geography | Pollution (water, soil, sediment), rehabilitation and reconstruction of polluted areas, clean technologies |
| Sedimentology, soil science, palaeontology | Terrestrial ecology, land cover change |  |
| **V3 - Evolutionary, population and environmental biology** |
| Animal behaviour | Biogeography, macro-ecology | Biodiversity, conservation biology |
| Comparative biology | Ecology | Ecotoxicology |
| Environmental, marine and freshwater biology | Population biology, population dynamics, population genetics | Species interactions (e.g. food-webs, symbiosis, parasitism, mutualism, bio-invasion) |
| Systems evolution, biological adaptation, phylogenetics, systematics |  |  |
| **V4 - Food Science, Agriculture, Forestry and Non-Medical Biotechnology** |
| Agriculture production systems (animals) | Agriculture production systems (crops), including fertilisation and nutrient management | Applied plant biology |
| Applied biotechnology (non-medical), bioreactors, applied microbiology | Aquaculture, fisheries | Biohazards, biological containment, biosafety, biosecurity |
| Biomass and biofuels production | Biomimetics | Crop protection, pest and disease control |
| Environmental biotechnology, bioremediation, biodegradation | Food sciences, safety, traceability, authenticity, agroindustry | Forestry and forest management, agroforestry |
| Soil biology, soil functionality, soil management |  |  |

**Life Sciences (LIF)**

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| **L1 - Molecular and Structural Biology** |
| Biophysics (e.g. transport mechanisms, bioenergetics, fluorescence) | DNA synthesis and degradation | DNA repair and recombination |
| Molecular metabolism | Molecular interactions | Protein synthesis, folding, modification and turnover |
| Lipid synthesis, modification and turnover | Carbohydrate synthesis, modification and turnover | RNA synthesis, processing, modification and degradation |
| Structural biology (e.g. crystallography, EM, NMR, PET) |  |  |
| **L2 - Genetics, Genomics, Bioinformatics and Systems Biology** |
| Applied genetic engineering, transgenic organisms, recombinant proteins, biosensors | Bioinformatics | Biological systems analysis, modelling and simulation |
| Biostatistics | Computational biology | Epigenetics and gene regulation |
| Genetic epidemiology | Genomics and functional genomics | Genetic and genomic variation and related disorders |
| Comparative, evolutionary and population genomics | Chromosome structure organization and dynamics | Metabolomics (including glycomics) |
| Molecular genetics, reverse genetics and RNAi | Proteomics | Quantitative genetics |
| Systems biology | Transcriptomics | Plant genetics |
| Genome editing | Genetic pharmacology |  |
| **L3 - Cellular and Developmental Biology** |
| Developmental biology and technology | Pattern formation and embryology in animal organisms | Molecular transport mechanisms |
| Mechanisms of growth control and cell proliferation | Cell differentiation, physiology anddynamics | Morphology and functional imaging of cells |
| Organelle biology | Plant development pattern formation and embryology in plants | Molecular mechanisms of signal transduction |
| Stem cells and cellular programming | Mechanisms and dynamics of cell migration |  |
| **L4 - Physiology, Pathophysiology and Endocrinology** |
| Ageing | Cancer and its biological basis | Cardiovascular diseases |
| Comparative physiology | Endocrinology | Metabolism, biological basis of metabolism related disorders |
| Organ physiology and pathophysiology | Environmental physiology | Rare/orphan Diseases |
| Reproductive biomedicine (reproductive physiology and endocrinology, infertility and pregnancy research) |  |  |
| **L5 - Neurosciences and neural disorders** |
| Behavioural neuroscience (e.g. sleep, rhythms, speech, handedness) | Cognitive neuroscience (e.g. learning, memory, emotions, consciousness) | Neural development and neuroplasticity |
| Mechanisms of pain | Molecular and cellular neuroscience | Neuroanatomy and excitability |
| Physiology of nerves and motor systems | Medicines, psychoactive drugs and pharmacology, poison. | Neuroimaging and computational neuroscience |
| Neurological disorders (e.g. Alzheimer's disease, Huntington's disease, Parkinson's disease) | Psychiatric disorders and clinical psychology (e.g. schizophrenia, autism, Tourette's syndrome, obsessive compulsive disorder, depression, bipolar disorder, attention deficit, hyperactivity disorder, addiction) | Sensory perception (nose and smell, tongue and taste, eyes and vision, ears and hearing, skin, pain, touch and movements) |
| **L6 - Immunity and infection** |
| Bacteriology | Biological basis of cancer immunity | Biological basis of auto-immunity/ tolerance |
| Biological basis of immunity related inflammatory disorders | Biological basis of other immunity related disorders | Cellular and adaptive immunity |
| Immunogenetics | Immunological memory and tolerance | Immunosignalling |
| Microbiology | Parasitology | Phagocytosis and innate immunity |
| Prevention and treatment of infection by pathogens (e.g. vaccination, antibiotics, fungicide) | Veterinary medicine and infectious diseases in animals | Virology |
| **L7 - Diagnostic tools, therapies and public health** |
| Diagnostic tools (e.g. genetic, molecular diagnostic) | Drug discovery and design (formulation and delivery) | Drug therapy and clinical studies |
| In vivo bio and medical imaging | In vitro cell and tissue imaging | Environment and health risks, occupational medicine |
| Gene therapy, cell therapy, regenerative medicine | Tissue regeneration and engineering | Immunotherapy (vaccine discovery, genetic vaccines) |
| Health services, health care research | Medical engineering and technology | Personalised medicine (diagnostic/prognostic biomarker, patient-orientated management solutions) |
| Pharmacology, pharmacogenomics | Public health and epidemiology | Radiation therapy |
| Surgery |  |  |

**Mathematics (MAT)**

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| **M1 - Mathematics** |
| Algebraic geometry | Algebraic number theory | Algebraic topology |
| Algorithms and complexity | Analytic number theory | Category theory and algebraic structures |
| Combinatorics | Complex analysis | Complex geometry |
| Differential Geometry | Functional analysis | Game Theory |
| General topology | Graph Theory | Group Theory |
| Harmonic analysis | Homological algebra | Low dimensional topology |
| Mathematical logic and set theory | Non commutative Geometry | Ordinary Differential Equations and Dynamic Systems |
| Partial Differential Equations | Probability | Ring theory |
| Set theory |  |  |
| **M2 – Applied Mathematics** |
| Control Theory | Data Analysis | Mathematical aspects of Biology |
| Mathematical aspects of Computer Science | Mathematical aspects of Economy andFinance | Mathematical aspects of Physics |
| Mathematics in Engineering and otherApplied Sciences | Numerical analysis and scientific computing | Operational Research |
| Optimization | Scientific Computing | Statistics |

**Physics (PHY)**

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| **P1 – Particle and Nuclear Physics** |
| Fundamental interactions and fields | Neutrino oscillations | Nuclear physics, heavy ions |
| Nuclear physics, nuclear structure | Particle accelerators and detectors | Particle physics, experiment |
| Particle physics, theory/phenomenology | Supersymmetric particles | Quantum chromodynamics |
| Quantum field theory |  |  |
| **P2 – Atomic and molecular physics, optics** |
| Atomic physics | Chemical Physics | Cold/Ultra-cold atoms and molecules |
| Laser physics | Metrology and measurement | Molecular physics |
| Nano-optics | Non-linear optics | Interferometry |
| Optical physics | Photonics | Statistical physics (gases) |
| Quantum optics | Quantum electrodynamics |  |
| **P3 - Condensed matter physics** |
| Condensed matter, thermal properties | Condensed matter, transport properties | Condensed matter, mechanical and acoustical properties, lattice dynamics |
| Electronic properties of materials, surfaces, interfaces | Films and Interfaces | Fluid dynamics |
| Gas and plasma physics | High pressure physics | Low-temperature physics |
| Magnetism and strongly correlated systems | Mesoscopic physics | Nanophysics: nanoelectronics, nanophotonics, nanomagnetism, nanoelectromechanics |
| Phase transitions, phase equilibria | Polymer physics | Semiconductors and insulators |
| Soft condensed matter | Spintronics | Statistical mechanics (condensed matter) |
| Structure of solids and liquids | Superconductivity | Superfluids |
| Surface Physics |  |  |
| **P4 – Astrophysics, Cosmology, Space science** |
| Active Galactic Nucleus (AGN) , QSO | Astrobiology, astrochemistry | Astrometry |
| Astronomical instrumentation: telescopes, detectors, techniques | Astrophysical jets, accretion phenomena | Big bang nucleosynthesis |
| Clusters of galaxies and large scale structures | Cosmic Microwave Background (CMB) | Cosmology |
| Dark matter, dark energy | Formation and evolution of galaxies | Formation, structure and evolution of stars |
| Extrasolar planets and exoplanets | Gravitational lensing | Gravitational waves |
| High energy astrophysics | Interstellar medium | Nuclear astrophysics |
| Radio astronomy | Relativistic astrophysics | Solar physics |
| Solar system and planetary science | Space weather |  |
| **P5 – Applied physics** |
| Acoustics | Agrophysics | Biophysics and biophysical techniques |
| Communication Physics | Complex systems, Networks | Computational Physics |
| Geophysics | Laser applications | Medical Physics |
| Nanotechnology: nanomaterials, tools and techniques, applications of nanotechnology | Optical engineering | Optoelectronics |
| Photodetectors | Photonics applications | Photovoltaics and solar cells |
| Plasmonics | Quantum electronics | Quantum Technology and Quantum Devices |
| Solid-state devices |  |  |

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| **S1 - Sociology, social anthropology****Social Sciences and Humanities (SOC)** |
| Ageing, health social policies | Attitudes and values | Demography, population issues and policies |
| Fertility, family dynamics, policies | Gender studies | Globalization, glocalization, antiglobalism |
| Inequalities, discrimination, prejudice, aggression and violence, antisocial behaviour | Kinship, cultural dimensions of classification and cognition, identity | Migration, refugees, asylum, interethnic relations, conflicts and integration of migrants |
| Myth, ritual, symbolic representations, religious studies | Qualitative methods, ethnography, case studies | Rural population, agriculture, innovation, depopulation |
| Social economy, social entrepreneurship | Social influence, power and group behaviour, classroom management | Social integration, exclusion, inequalities, participation and prosocial behaviour |
| Social structure, social mobility | Social theory | Social welfare and neoliberalism |
| Sociology of education | Sociology of knowledge | Transformation of societies, democratization, social movements |
| Urban sociology, urban theory, urbanstudies, global cities, territorialisation | Work, employment, precariousness | Youth studies |
| **S2 - Political science** |
| Comparative politics | Development studies | Electoral politics, Political parties,Citizenship and public engagement |
| EU and European politics | Foreign policy | Game theory, Logic of collective choice |
| Human, economic and social geography | International relations, Global governance,International politics and history; geopolitics | Migration policy |
| Political economy | Political systems and institutions, governance | Political theory, Political thought,Political philosophy; Ideologies |
| Politics of gender, Race, Discrimination and inequalities; Identity politics | Public administration, Public policies | Regional and territorial politics |
| Relations with public interest groups | Theories of conflict, violence and security; Negotiation and mediation |  |
| **S3 - Law** |
| Business, corporate and securities law | Comparative law | Criminal law |
| Education law | Employment and labour law, social law | European law |
| Family and juvenile law | Health law | Intellectual property and innovation law; Data protection law, IT law |
| International law, human and civil rights; Violence, conflict and peacebuilding | Legal systems, constitutions, foundations of law | Private law, consumer protection law |
| Public law, immigration law, environmental law | Sports and entertainment law |  |
| **S4 - Communication** |
| Communication networks, media, including social media, information society | Crisis communication theory and procedures | Digital social research, audiovisual social services |
| Information & communication technology and the world of work | Information society and education | Institutional communication |
| Lobbying | Political communication and strategy | Social communication, verbal and non verbal communication |
| Social studies of science and technology |  |  |
| **S5 - Cognition, psychology, linguistics** |
| Biological psychology: mind-body connection, health, stress and disease | Cognitive psychology: learning, cognition | Development across the life-span and developmental psychopathology |
| Ergonomics, human factors, user modelling, and neuroergonomics | Evolution of mind and cognitive functions, animal communication | Formal, cognitive, functional and computational linguistics |
| Neuropsychology and neurolinguistics | Psycholinguistics: acquisition, comprehension, production | Socio-cultural psychology and social cognition |
| Typological, historical and comparative linguistics | Use of language: pragmatics, sociolinguistics, discourse analysis, second language teaching and learning, lexicography, terminology |  |
| **S6 – Philosophy** |
| Aesthetics and philosophy of culture and anthropology | Analytic philosophy | Epistemology, logic, philosophy of science |
| Ethics and morality, bioethics | History of philosophy | Metaphysics |
| Phenomenology | Philosophy of religion | Social and political philosophy |

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| **S7 – Education** |
| Education systems, institutions and policies, sociology of education | Educational assessment, feedback | Learning technologies, e-learning, tutoring systems, learning analytics |
| Lifelong learning, workplace learning and training, heutagogy | Philosophy of education, human development | Teaching and learning methodologies, pedagogy, andragogy, psychology of education |
| **S8 - Literature, arts, music, cultural and comparative studies** |
| African literature | Classics, ancient Greek and Latin literature and art | Comparative literature |
| Computational modelling and digitisation in the cultural Sphere | Contemporary literature | Cultural memory, intangible cultural heritage |
| Cultural studies, cultural diversity | History of art and architecture, arts-based research | History of art criticism |
| History of books, codicology | History of collections | History of fashion design |
| History of literature | Latin American literature | Library and archival science; Librarianship |
| Literary theory and comparative literature, literary styles | Medieval literature | Modern literature |
| Museums and exhibitions, conservation and restoration | Music and musicology, history of music | Oriental and East Asian literature |
| Textual philology, palaeography and epigraphy | Visual arts, performing arts, film, design |  |
| **S9 - Archaeology, history and memory** |
| American archaeology, art and culture | Ancient history | Asian archaeology, art and culture |
| Classical archaeology and art, history of archaeology | Collective memories, identities, lieux de mémoire, oral history | Colonial and post-colonial history, global and transnational history, entangled histories |
| Cultural heritage, cultural memory | Cultural history; History of collective identities and memories | Diplomatics |
| Early and modern archaeology | Egyptology and ancient near eastern archaeology, art and culture | Gender history |
| General archaeology, archaeometry, landscape archaeology | Historiography, theory and methods in history, including the analysis of digital data | History of ideas, intellectual history, history of science, techniques and technologies |
| Industrial archaeology | Medieval history | Military history |
| Modern and contemporary archaeology | Modern and contemporary history | Numismatics, epigraphy |
| Prehistory, palaeoanthropology, palaeodemography, protohistory | Social, economic, cultural and political history |  |

1. See definition of Full-Time Equivalent Research Experience in the Application Guide and FAQ [↑](#footnote-ref-1)
2. Please count only time spent in months on research activities. [↑](#footnote-ref-2)
3. Please count only time spent until the 2020 call deadline (October, 21st, 2020) or the end of the PhD, whichever comes first. [↑](#footnote-ref-3)
4. Please see the details on secondments and definition of evaluation criteria in the Application Guide of the call. [↑](#footnote-ref-4)
5. Please refer to the Application Guide for details. [↑](#footnote-ref-5)
6. https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2013:373:0012:0015:EN:PDF [↑](#footnote-ref-6)
7. https://datahelpdesk.worldbank.org/knowledgebase/articles/906519 [↑](#footnote-ref-7)
8. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32009R0428 [↑](#footnote-ref-8)
9. Please see the definition of a doctoral degree in the Application Guide of the call. [↑](#footnote-ref-9)