



# Emerald

International PhD Programme  
for Medical Doctors

## **Guide for Applicants**

A guaranty for a fair  
and transparent  
recruitment process

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# 1. EMERALD

## Overview

Biomedical research is advancing at high speed. In the last decades, we have seen major developments resulting in a significantly better understanding of the biological processes causing disease and improved treatment and healthcare. However, translating results obtained in the lab to clinical practice is often a difficult process. It requires both knowledges of medicine and biology, and experience with academic research and clinical practice. Addressing the increased need for innovative solutions in medicine requires more than ever the rise of the unique professional profile of *physician-scientists*, combining research with clinical care, understanding patients' needs and driving research forward to address them.

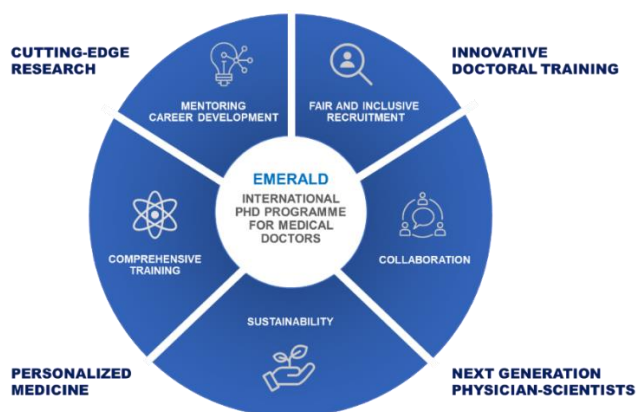
The “International PhD Programme for Medical Doctors”, EMERALD, trains and nurtures excellent physician-scientists. The programme recruits medical doctors to carry out a PhD in cutting-edge research in one of the seven recruiting European centres of excellence in life sciences and biomedicine. The recruited medical doctors will acquire unique scientific, technical, and digital skills and knowledge to advance their careers at the frontier of medicine and research, with the final goal to improve patient care and tackle global health challenges.

## Benefits for EMERALD fellows

The fellows will enrol in the international PhD programme at the host institute, benefiting from competitive salaries, an international, stimulating and creative environment, advanced training, tailored career development and mentoring programmes, and access to high-end technologies and facilities. They will be supervised by the host Principal Investigator (PI), and co-supervised by a second PI. The choice of co-supervision will be driven by the fellow and the host PI.

They will also benefit from a joint international training and mentoring programme provided by EMERALD, with the opportunity to build valuable international networks with multiple actors in academia, hospitals, patients' organizations and the private sector. The joint training and mentoring programme is a unique feature of EMERALD, entailing a common online training platform, dedicated summer schools on the latest technologies, and mentoring activities (peer-to-peer, and mentee-mentor). Training will focus on four complementary tracks: 1) excellent and cutting-edge biomedical research and technology; 2) open and responsible research; 3) innovation and knowledge transfer; and 4) professional empowerment.





## 2. List of PhD positions available in the second call

EMERALD will hire a total of 24 fellows in two calls of recruitment. We hired the first 9 EMERALD fellows in the 1<sup>st</sup> Call, and we are now offering 15 positions to be filled in this 2<sup>nd</sup> Call of recruitment. Importantly, applicants can choose up to two laboratories (as first and second priority) from those listed in the table (being updated), offering to host a fellow. The details can be found on the EMERALD webpage: <https://emerald-mdphd.eu>.

Host ID	Position Title	Host country	Host supervisor
CRG#1	Genetic mechanisms of diabetes	Spain	Jorge Ferrer
CRG#2	How misregulation of alternative pre-mRNA splicing contributes to cancer progression?	Spain	Juan Valcárcel
CRG#3	Molecular origins of age-associated diseases	Spain	Nicholas Stroustrup
CRG#4	RNA-binding proteins and translational reprogramming of cancer cells	Spain	Fatima Gebauer
BRIC#1	Molecular mechanisms of AML with focus on translation	Denmark	Kim Theilgaard-Mønch
BRIC#2	Mechanisms underlying maintenance of genome stability	Denmark	Claus Storgaard Sørensen
BRIC#3	Brain tumor microenvironment and its influence on tumor aggressiveness and resistance mechanisms	Denmark	Bjarne Winther Kristensen
BRIC#4	Epigenetics, metabolic rearrangements and gene regulation in hepatobiliary diseases (epi-metabolic deregulation)	Denmark	Jesper Andersen

BRIC#5	The impact of severe maternal respiratory tract infections on fetal brain development and offspring behavior	Denmark	Konstantin Khodosevich
BRIC#6	Tumour evolution, heterogeneity, and understanding of the mutational processes leading to aggressive disease	Denmark	Joachim Weischenfeldt
BRIC#7	Understanding and overcoming drug resistance in acute myeloid leukemia	Denmark	Krister Wennerberg
IC#1	The role of RNASE1 in lung metastatic niche establishment by breast cancer cells	France	Albertas Navickas
IC#2	New targetable vulnerabilities for the treatment of chemoresistant breast and ovarian BRCA1/2-mutated tumors	France	Raphael Ceccaldi
IC#3	Evaluation of the efficiency of immunotherapy by tracing ctDNA in metastatic NSCLC and triple-negative breast cancer patients	France	Francois-Clement Bidard
IC#4	The role polyglutamylation in tauopathic neurodegeneration	France	Carsten Janke
IDIBAPS#1	Developing and investigating computing, machine learning and physiological modelling for understanding each individual heart towards personalised medicine	Spain	Bart Bijnens/Marta Sitges
IDIBAPS#2	Mechanisms and therapies for Myeloma, amyloidosis, macroglobulinemia and other gammopathies	Spain	Carlos Fernández de Larrea
IDIBAPS#3	Mechanisms involved in vascular inflammation/remodeling in systemic vasculitis	Spain	Maria Cinta Cid Xutglà
IDIBAPS#4	Mechanisms involved in strenuous exercise-induced atrial myocardial fibrosis	Spain	Eduard Guasch
IGC#1	Functional interplay between immune-driven resistance mechanisms, stress and damage responses acting in parenchyma tissues	Portugal	Miguel P. Soares
IGC#2	Lymphocyte development and Leukemogenesis	Portugal	Vera Martins
IGC#3	Genetic and genomic diversity, Reconstructing the recent evolutionary history of endangered species and of humans	Portugal	Lounes Chikhi
IGC#4	Lymphocyte Physiology	Portugal	Jocelyne Demengeot
MDC#1	Host-microbiome factors in cardiovascular disease	Germany	Sofia Forslund
MDC#2	Molecular and cellular basis of behavior	Germany	Hanna Hörnberg
MDC#3	Neuromuscular and Cardiovascular Cell Biology	Germany	Michael Gotthardt
MDC#4	Molecular Oncology	Germany	Gaetano Gargiulo

MDC#5	Anchored Signalling	Germany	Enno Klussmann
NKI#1	Epigenetic regulation in hormone-driven cancers and therapy resistance	Netherlands	Wilbert Zwart
VIB#1	Medical biotechnology to improve hepatocellular carcinoma diagnostics	Belgium	Nico Callewaert
VIB#2	Integrative genomics to underpinning somatic evolution, tumour heterogeneity, and treatment resistance	Belgium	Jonas Demeulemeester
VIB#3	Basic mechanisms of Alzheimer's disease and neurodegeneration	Belgium	Bart De Strooper
VIB#4	Identification of universal biomarkers of metastatic melanoma in CTCs	Belgium	Jean Christophe Marine
VIB#5	Unraveling the molecular mechanisms of neuronal degeneration in motor neuron diseases	Belgium	Ludo Van Den Bosch
VIB#6	Cellular metabolism and metabolic regulation in cancer metastasis	Belgium	Sarah Fendt
VIB#7	Endothelial immunosuppressive mystery genes for alternative immunotherapy: artificial intelligence-driven target discovery and validation	Belgium	Peter Carmeliet
VIB#8	Mechanisms of inflammation and associated tissue damage in musculoskeletal diseases	Belgium	Dirk Elewaut



## 3. Selection and recruitment

### Eligibility criteria

Candidates shall fulfil the following eligibility criteria at the time of the call deadline.

**Academic record:** Candidates must have obtained a medical degree, which allows them to enrol in an official Doctoral programme in accordance with the national regulations and institutional requirements in force at the respective recruiting research centre.

**Research experience:** At the date of the call deadline, candidates must be in the first four years (full-time equivalent research experience) of their research career, and have not been awarded a PhD degree.

Exception: The 4-year period is extended by 18 months for each child the candidate gave birth to during this period, or for the time the candidate took parental leave (according to the applicable national laws) during this period. The period is also extended for candidates who did obligatory military service, had long-term illness, or took care of a family member or officially registered partner for the period the care was provided.

**Mobility:** Candidates can be of any nationality, but must undertake trans-national mobility according to the H2020 MSCA programme's rules. During the 3 years before the date of the call deadline they must not have resided or carried out their main activity (work, studies, etc.) for more than 12 months in the country of the selected recruiting centre for which they apply for.

### Application

Applicants have to complete an online application form in English. Incomplete applications will not be eligible. You need to submit only one application in which you select up to two laboratories of your choice.

**Submission of online application:** <https://emerald-mdphd.eu/how-to-apply/>

**Deadline of submission:** 28th August 2022, 17h CET.

The following information is required for the **EMERALD** application:

- a. **Personal details.**
- b. **Eligibility self-assessment.** Applicants need to list reverse chronologically the location of their main activity during the last 3 years, and calculate their total Full-Time Equivalent (FTE) research experience (<4 years).
- c. **Contacts of two referees.** Applicants need to provide contact details of two referees, which should not be affiliated with the institutes you apply to. Once clicked the button "Send Request", the referees will receive an automatic email to complete the recommendation letter form online. The application will only be eligible if the recommendation letters were provided before the application deadline. Therefore, the applicant needs to make sure to send the request through the online application portal as soon as possible, before finalizing the application. Applicants will be able to check



whether and when the recommendation letters were submitted, but will not be able to read the recommendation letter itself.

- d. **Academic record information** including medical degree certificate and transcript copies (including grades, if available) in English. Additionally, the applicants are asked to translate their credits into Grade Point Average (GPA) using the U.S. 4.0 scale to allow an international comparison. The GPA Calculator online tool allows the translation from almost any country. If your country is not included, please get in contact with the helpdesk ([emerald@crg.eu](mailto:emerald@crg.eu)).

Link to the tool: <http://www.foreigncredits.com/Resources/GPA-Calculator>.

If applicants apply during the final phase of their studies, it is important to calculate the GPA from the available grades. In this case, the final degree sheet is not required, although many universities provide interim grade sheets upon request or also online. If available, an overview of courses and grades accomplished so far with university records should be included. Applicants also have the possibility to provide information about an additional degree in another field besides the medical studies, and a Master's degree.

- e. **Interruptions in education**, if any. Applicants should specify the occupation(s) they have pursued in the interim (max. 200 words)\*.
- f. **Career breaks**, if any. A detailed description of career breaks is important to understand the career record, but also to justify eventual exceptions for the eligibility rule related to previous research experience (see eligibility criteria above). If the applicant's research experience exceeds four years due to an extended career break, they will need to provide official documentation with their application (max. 200 words).
- g. **Scientific Interest**. Applicants are asked to write a short essay about their current and future scientific interests (max. 500 words).
- h. **Initial research experience**. Applicants should list in reverse chronological their research experience and/or positions held. They should indicate duration and type of training/positions, and highlight their main contributions and results, and which impact their work had. If any, applicants can also describe their active participation to conferences by presenting posters or giving talks, and their activities related to student supervision, technology transfer, open science, science education and/or public engagement (max. 800 words).
- i. **List of publications**, if any. Applicants shall indicate whether the publication is a peer-review article (A), a review (R), a book chapter (B), or other (O) such as a case report, editorial, letter, or comment and provide an online link or a DOI for each listed publication. The language should be indicated, in case it is not in English.
- j. **Honours, scholarships, prizes and awards**, if any. Applicants shall list those relevant to this application, including dates and a short description (max. 500 words).
- k. **Motivation letter**, describing the specific motivation for applying to this programme in general and in particular the preference for the two selected laboratories.
- l. **Preferred host laboratories and research areas**. Max. 2 laboratories can be selected.
- m. **Signed eligibility statement and commitment to fellows' responsibilities** as outlined below in this guide for applicants.





Data submitted by the applicant will be managed by Fundació Centre de Regulació Genòmica. Please find all relevant legal information on the EMERALD website: <https://emerald-mdphd.eu/legal-information/>

## Evaluation panels and committees

**Coordination Committee:** to coordinate the implementation of the EMERALD Programme, organize the remote evaluation and oral interviews, select the final candidate based on evaluation scores from the merit-based assessment and follow redress procedures. It includes eight experts, one from each of the eight recruiting centres (<https://emerald-mdphd.eu/people/>).

**External expert panels:** to evaluate remotely the submitted applications. While gender balanced, they will include biomedical and life science researchers together with medical doctors who hold a PhD degree. All experts are experienced in recruiting and training PhD students and do not have a conflict of interest in the Emerald recruitment process.

**Selection Committee:** to evaluate candidates at the oral interviews. There will be a standing selection committee, including experts with relevant scientific and clinical competencies, and experience in recruitment and training PhD researchers.

## Selection

Starting upon call closure, the selection workflow consists of different phases: 1) eligibility screening, 2) remote evaluation, 3) online oral interview, 4) site visits and 5) final selection.

### 1) Eligibility screening

After the call deadline, the EMERALD Coordination Committee will carry out an eligibility check of all submitted applications. In case of eligibility questions, we will contact the applicant and give them one week to clarify the question. Ineligible applications will not be further evaluated, and the applicants will be informed. Applicants not fulfilling the eligibility criteria have 10 calendar days after receipt of rejection to send a written objection and request a re-evaluation of the decision. Eligible applications will undergo further evaluation.

### 2) Remote evaluation

Each eligible application will be reviewed by three external independent evaluators, following the predefined selection criteria and scoring method (see Tab. 1) and the evaluator will include a brief and constructive justification. Applicants will be ranked based on the final evaluation scores. For each position, a maximum 3 of the highest-ranking candidates will be selected for oral interviews, provided that their average scores are above the quality threshold (>3). All candidates will receive the evaluation results by email. If positively assessed, the shortlisted applicants will move forward for oral interviews. Applicants not shortlisted will be informed including of their redress opportunity.

### 3) Online oral interview



The Selection Committee will receive in advance the reports from the remote evaluation and interview the candidates, in parallel panels. The interviews will be online by videoconference (see calendar below for dates). At the interview, the candidate will give 1) a short presentation on previous research experience (any field, clinical or laboratory-based); 2) a short talk on an original scientific article previously selected by the Selection Committee, and 3) an interview to explore the scientific knowledge and future plans. Future supervisors can participate only as observers in the candidates' presentations and interviews. Evaluations will follow the predefined selection criteria and scoring system (see Tab. 1), and evaluators will document strengths and weaknesses. The final scoring for each candidate will be discussed at a consensus meeting of the Selection committee. Only candidates who scored >3 (the quality threshold) will be able to continue to site visits and finally be considered for a fellowship.

#### 4) Site visits/Host interviews

Candidates passing the quality threshold of the oral interviews will be invited to on-site personal interviews with up to two selected host PIs. The candidates and hosts will have the opportunity to discuss the project, expectations and explore the match between their research interests and competencies. The candidates will visit the host facilities, get to know the local training programme, employment conditions, and meet with student representatives (see calendar below for dates). In case the pandemic situation does not allow for physical visits for all applicants, in order to treat equally all the applicants, a virtual meeting schedule with all relevant actors of the host-institutions will replace the on-site visits (host interviews).

#### 5) Final selection

Following the site visits/host interviews, candidates shall submit changes to their host priority list, if any, and each interviewing PI will indicate their interest in the candidates. The Coordination Committee will decide on the final ranking, taking into consideration the score from the interview and the matching of priorities of the candidates and host PIs. Candidates, who passed the quality threshold but who are not initially offered a fellowship, will be on a reserve list, in case a selected candidate rejects the offer. All candidates will receive by email the results of the individual evaluation, including the report of the Selection Committee. The candidates will have 2 weeks to accept the offer. We will publish the selected candidates on the EMERALD website, upon their acceptance to enrol in the programme.

#### 6) Redress procedure

Candidates will have 10 calendar days to request redress after the eligibility check, remote evaluation, and final selection. The Coordination Committee together with the Chairs of the Selection Committee will examine the request to ensure equal treatment and coherent interpretation, without questioning the scientific judgment of qualified experts.

### Evaluation criteria

The following table illustrates the evaluation criteria and sub-criteria for remote evaluation and oral interviews. In addition to the evaluation criteria, we will consider well-justified career breaks as career evolution, without any penalization. Evaluators will score each criterion from



excellent (5), very good (4), good (3), fair (2), to poor (1). In case final scores are equal, we will give preference to candidates from under-represented groups, such as candidates with refugee status, or people with disabilities.

Evaluation Criteria			Weight
REMOTE EVALUATION	Candidate's curriculum	<ul style="list-style-type: none"> <li>Academic experience and grades</li> <li>Research experience</li> <li>Publications (focus on the quality of the content)</li> <li>Fellowships and awards</li> <li>Other merits (teaching, public engagement, technology transfer, etc.)</li> </ul>	50
	Motivation of the candidate	<ul style="list-style-type: none"> <li>Motivation to specifically join the EMERALD PhD programme, and research in the specifically selected research labs (match of lab's requirements with medical background/experience)</li> <li>Long-term professional perspectives</li> </ul>	30
	Reference letters	<ul style="list-style-type: none"> <li>Two reference letters (asked to the referees through the online system)</li> </ul>	20
	<b>Total score</b>		<b>100</b>
ORAL INTERVIEWS	Knowledge and scientific potential	<ul style="list-style-type: none"> <li>Scientific knowledge and skills acquired in previous research experience</li> <li>Outcome of previous research</li> <li>Ability to present clearly and think critically on science (article presentation)</li> <li>Attitude towards research integrity/ethics (based on predefined question)</li> </ul>	60
	Motivation of the candidate	<ul style="list-style-type: none"> <li>Motivation to specifically join the EMERALD PhD programme, and research in the specifically selected research labs (match of lab's requirements with medical background/experience)</li> <li>Long-term professional perspectives</li> </ul>	30
	English level		10
	<b>Total score</b>		<b>100</b>

**Tab. 1:** Evaluation criteria and weighting for the remote evaluation and oral interviews.

## Calendar

The graph shows the timeline of the application and evaluation process. When applying, applicants shall save the dates for the oral interviews and site visits/host interviews, to make sure they will be available during that periods. The earliest start of the contract will be February 2023 and the latest will be 30<sup>th</sup> June 2023, in case of visa issues.



## 4. Appointment

Successful candidates will be required to communicate their acceptance and the start date of their project within 2 weeks of receiving notification of the outcome of the selection process. Fellows are expected to start their fellowships within 16 weeks of notification of acceptance. In exceptional cases (e.g. issues with visa), we might agree on a longer period up to 6 months.

Upon acceptance of the EMERALD fellowship, fellows sign a Work Contract (including Annexes) and a Fellowship Agreement with the host institute, which contains the appointment conditions following the institute and the Grant Agreement 101034290 regulations, in particular:

- Fellows will be employed for 42 months by the host institute under a work contract with full social security and a competitive salary following the institute's salary scales.
- Fellows will work full time on the project and cannot benefit at the same time from another Marie Curie Action or fellowship.

Fellows will receive an **attractive salary**. The differences in the amount for the allowances at the different centres are the result of the differences in national living costs and standards. Please be aware, that the below-indicated numbers are the **not the yearly gross salary, but the super gross salary, which is the salary that still needs to subtract the employer costs** (social security, and additional taxes that vary in each country) **and the employee taxes** (which vary depending on the country, and another personal conditions) **to get the net salary**.

Hosting institute	Annual living allowance (€)	Monthly mobility allowance (€)	Monthly family allowance* (€)
CRG	31.156	167	-
IDIBAPS	31.156	167	-
IGC	30.108	200	-
BRIC	44.448	-	-
IC	43.200	-	-
NKI	59.796	-	-
VIB	49.200	200	200
MDC	61.764	-	-

\*Paid in case candidate is married and/or has children.

EMERALD will provide the fellows with **optimal working conditions** in a vibrant, stimulating, and international environment to carry out their research projects and develop their careers. The working language is English in all hosting research centres. The fellows will have office and bench space in their host laboratories and **all costs related to the research project agreed upon with the supervisor, attendance to conferences, secondments, training, and EMERALD summer schools will be covered.**

## 5. Fellows' responsibilities

Selected fellows will comply with the EMERALD and the host institute's regulations and requirements, with the support of their co-supervisors.

### Ethics and good scientific practice

Fellows will respect the fundamental ethical principles, good scientific practice and national and international regulations concerning integrity and ethics in research.

### Personal Career Development Plan

Fellows will develop a Personal Career Development Plan (PCDP) at the start of their contract and regularly update it afterwards, including scientific goals, potential risks, contingency plans and ethical considerations. It will also include a description of the plan for international, interdisciplinary and inter-sectoral collaboration and secondments, the planned scientific and transferable skills training, and a plan for dissemination, exploitation and public engagement.

### Open Science and Research Data Management

Fellows will follow the European Commission policy of Open Access and Research data management, and the principle "as open as possible, as closed as necessary".

### Intellectual Property Rights

Fellows will adhere to the Technology Transfer and Intellectual Property Rights policies of the host institute.

### Dissemination



Fellows will acknowledge the support of the European Union’s Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 101034290 in any related publications or other media in accordance with Article 29.4 of the Grant Agreement.

## 6. Are you ready to apply?

### Helpdesk

For any questions and doubts, contact us at [emerald@crg.eu](mailto:emerald@crg.eu).

### Checklist

Check your Eligibility	<ul style="list-style-type: none"> <li>✓ I have a medical degree.</li> <li>✓ I do <u>not</u> have a PhD degree.</li> <li>✓ I have less than 4 years of research experience.</li> <li>✓ During the past 3 years*, I have not resided or worked for more than 12 months in the country of the host institution(s) I am applying.</li> </ul>
Chose Laboratories	<ul style="list-style-type: none"> <li>✓ Check out the labs that offer positions (<a href="#">link</a>).</li> <li>✓ Choose the 2 favourite labs you want to apply for.</li> </ul>
Prepare Information	<ul style="list-style-type: none"> <li>✓ Read this guide for applicants thoroughly.</li> <li>✓ Register and start your application in the EMERALD online portal (<a href="#">link</a>).</li> <li>✓ Request recommendation letters from two referees (through the online portal).</li> <li>✓ Provide copies of degree certificate and transcript in English.</li> <li>✓ Provide Curriculum Vitae information.</li> <li>✓ Explain scientific interest and motivation to join EMERALD, and specifically the selected lab(s).</li> </ul>
Submit Application	<ul style="list-style-type: none"> <li>✓ Submit your application in the EMERALD online portal.</li> <li>✓ Deadline: <b>28<sup>th</sup> of August 2022, 17h CET</b></li> </ul>
<p>*The 3 years for mobility and the 4 for research experience refer to the period before the date of the call deadline.</p>	



# Emerald

International PhD Programme  
for Medical Doctors

Join **EMERALD** to bridge  
fundamental discoveries and  
frontier technologies with  
medicine and healthcare.