



**Imperial College London-Technical University of Munich**

**(Imperial-TUM) Joint Academy of Doctoral Studies**

**Theme for 2024: Health Resilience in a Changing Environment**

CALL DOCUMENT AND GUIDANCE FOR APPLICANTS

**Contact** **Details**

Academic Leads:

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* Technical University of Munich – Prof Dr. Percy Knolle [percy.knolle@tum.de](mailto:percy.knolle@tum.de), Professor of Molecular Immunology, Founding Director of the Institute of Molecular Immunology at the School of Medicine and Health

Programme Management:

* Imperial College London – International Relations Office (Heather Kerst, [h.kerst@imperial.ac.uk](mailto:h.kerst@imperial.ac.uk))
* Technical University of Munich – International Graduate School of Science and Engineering (IGSSE) (Melissa Siciliano, [jads.igsse@tum.de](mailto:jads.igsse@tum.de))

Potential applicants are welcome to contact programme coordinators and Academic Leads with questions in advance of submitting an application.

1. **Purpose**

The partner universities recognise that collaborative activities with European colleagues enable cross-border pooling of research capabilities, sharing of expertise and facilities, the opportunity to appreciate different perspectives, achievements of outputs that are typically more highly cited, as well as access to new environments for impact and exploitation of research outcomes. Joining forces in researching highly relevant topics will thus allow the partners to fully exploit and combine their strengths and to generate highly impactful insights, and create added value.

1. **The Imperial–TUM Joint Academy of Doctoral Studies (JADS)**

The Imperial-TUM Joint Academy of Doctoral Studies (JADS) is a collaborative doctoral programme and research flagship that brings together two of Europe’s most innovative universities to deliver cutting-edge science and jointly train the next generation of UK and German researchers.

The aim is to foster closer collaboration between London and Munich research, innovation and education communities in fields that are highly relevant to both Imperial and TUM. JADS involves a competitive application process with a different theme for each cohort.

Launched in 2020, JADS has organised four cohorts to date: ‘AI, Healthcare and Robotics’ in 2020; ‘Mathematics of Information: Theory and application” in 2021; ‘Circular Economy’ in 2022; and ‘Transition to Zero Pollution’ in 2023.

1. **Call for 2024 Cohort and Theme**

This call invites Principal Investigators (PIs) at TUM and Imperial to jointly put forward a research project to be underpinned by 1 doctoral candidate at TUM and 1 doctoral candidate at Imperial, which includes joint supervision plans and a built-in mobility programme. The cohort starting in October 2024 will focus on the theme of **Health Resilience in a Changing Environment**.

The wider environment to which we are exposed influences health through factors including higher-density living, increased variety and concentrations of pollutants, climate change, conflict and mass migration. The Joint Academy of Doctoral Studies will help pioneer groundbreaking convergence science at the intersection of health, technology, AI and data sciences to understand the impact of these environmental factors on human health and wellbeing and to develop ways to mitigate against these impacts.

Academics are encouraged to propose research projects that either make human health and well-being more resilient in the evolving environment, strive to move the evolution of the environment towards healthier directions or achieve both aims synergistically.

We seek projects in all areas of medicine, natural sciences, engineering, business and technology that help develop:

* An understanding of molecular and cellular human responses to a changing environment;
* Personalised interventions to enhance health resilience;
* Informed policy making in public health and transition to zero pollution based on trends and patterns identified through population, health, environmental, climate and other large datasets.
* The integration of digital health tools and technologies that improve health and wellbeing in an evolving world.

*Examples of Grand Challenges include but are not limited to:*

*Non Communicable Diseases (NCDs) and environmental pollutants*

NCDs and environmental pollutants are linked - outdoor air pollution and increased contamination of the environment with nanoparticles are responsible for increased morbidity and mortality worldwide. There is growing concern for a causal link to late-life dementia. The molecular links between such pollution and human health are largely unclear. Working across key fields such as industrial production, energy, transport and food - leading sources of emissions contributing to air pollution, nanoparticle release and global warming, we aim to understand how environmental pollutants are changing in a warmer world, how exposure to different pollutants affects health for instance by induction of chronic inflammation and how to frame effective public policies to mitigate against such exposures.

*Linking exposure with environmental pollutants to disease – improving health resilience*

By utilising innovative technologies, health and environmental data and AI, we can better understand why some people are more likely to develop disease and aggravated disease courses and why some people are more seriously affected by social and environmental exposures. We aim to understand the mechanisms at molecular, cellular and organ levels that render individuals resistant or susceptible to disease following different exposures. Improving health resilience is of particular importance in the fields of cardiovascular, pulmonary and neurological diseases as well as fatty liver disease.

*Brain health in a changing world*

The full impact of changes in the climate, with migration and from an increasing range and concentration of environmental pollutants for brain health is not clear. The potential impacts of migration, conflict and climate change for mental health are underappreciated and the risks of environmental pollutants on brain diseases are poorly understood. Moreover, despite recent major advances in brain sciences, there is an absence of sufficient cross-sectoral collaboration to understand how brain function is affected by these factors, holding back progress in developing approaches to enhancing mental and neurological health resilience to their effects.

All projects must involve researchers from both Imperial and TUM. Projects must be strongly interdisciplinary.

The programme provides an opportunity for PIs to build or deepen research collaborations that can scale up projects quickly. The programme allows doctoral candidates to develop strong international research experience and networks early in their careers, which can support both research ambitions and career development. PIs who apply for projects in this programme:

* must have a commitment to actively providing input and engaging in the various training and related opportunities provided by the programme, and
* support their doctoral candidates to take full advantage of online and in-person training and cohort-building activities.

PIs and doctoral candidates are encouraged to make the most of the collaborative programme benefits, including accessing complementary labs and data, innovation ecosystems, industry engagement, synergies with ongoing funded projects, and other complementary expertise to benefit the people and projects.

We expect to launch the new JADs cohort in October 2024, running for four years of doctoral studies at TUM and three years at Imperial.

Both institutions will provide cohort-building opportunities to support research and professional development.

**Key Elements and Criteria for the Call**

* Joint applications from researchers[[1]](#footnote-2) at Imperial and TUM, focused on projects in the area of ‘Health and the Environment’, from any faculty or school at both institutions;
* The same PI cannot submit more than two project proposals;
* Imperial candidates are required to spend significant time at TUM over the course of the PhD programme, e.g. 2-3 months a year over the course of the PhD programme, a period of 6 months or longer, or similar stays, that both support the project and allow the PhD candidate to take advantage of the in-person opportunities. TUM candidates are required to spend two six-month periods or a full year at Imperial during their studies.
* Each selected project is to be supervised by 2 PIs (one at Imperial & one at TUM); and both PIs are expected to be active in the supervision and present at their midterm “project report” and contribute to the joint seasonal school program through e.g. lectures and talks.
* TUM doctoral candidates attend a subject-specific curriculum with additional training and seasonal school(s) offered by TUM, which will also be attended by Imperial doctoral candidates.
* Annual joint “JADS Symposium,” organised by IGSSE (at TUM) and Imperial (annually taking turns) which both PIs and all doctoral students from both institutions are required to attend at least twice.
* Joint thesis examination committee (but not joint degree -- Imperial students will receive an Imperial degree, and TUM students receive a TUM degree).

1. **Number of Doctoral Projects and Funding**

The scheme aims to support a total of up to five joint doctoral projects for four years at TUM, and three years at Imperial. The projects will be selected by TUM and Imperial’s joint committee (see point 6 below). Each project will be underpinned by two PIs (one from TUM, one from Imperial) and two doctoral candidates (again, one from TUM and one from Imperial).

Applicants will be supported through their individual institutions, based on doctoral training stipends and relevant mobility and consumables funds.

At TUM, the funding for JADS scholarships (monthly 2.000 € for 4 years), mobility (12.000 € stay abroad and 5.000 € travel), consumables (4.000 €), budget for student assistants (4.000 €) and related support is allocated via the IGSSE.

At Imperial, the funding for the PhD Home-fee studentships (UK Home fee tuition and UKRI stipend rate), and mobility (12.000 € per 3-year project) is allocated centrally. Imperial PIs will be expected to secure funding for any needed research project consumables, and any reasonable additional mobility needs above what is allocated centrally.

1. **Call Timeline**

Call Opens: 20 February 2024

Call Closes: 15 April 2024

Notification Date: late May/early June 2024

Start of PhD projects: October 2024

1. **Evaluation**

Proposals will be independently reviewed and ranked by an Imperial-TUM Joint Committee, according to the following criteria:

* Scientific quality & originality of the project
* Scientific merit of the teams
* Interdisciplinarity
* Impact of the research in and beyond the field
* Convincing plan for implementing collaboration and co-supervision of doctoral candidates
* Commitment from the PIs to actively engage with the programme’s training and development activities e.g. seasonal schools, annual JADS symposium, etc. and supporting doctoral candidates to engage fully in the opportunities provided by the programme
* Demonstrated track record of support and mentorship of doctoral candidates (if PIs have previously supervised doctoral candidates)
* Sustainability, e.g. identification of potential funding sources to grow and extend research projects

1. **How to submit a project proposal**

PIs from Imperial and TUM should jointly prepare and submit the fully completed Application Form, in electronic format (Microsoft Word or Adobe PDF), via this [online application form](https://collab.dvb.bayern/display/TUMjads/Application+Call+2024). Applicants should use the enclosed Application Form (see below) and follow the relevant guidance notes. Application Forms need to be received at the end of the day the call closes in order to be considered.

1. **Reporting Requirements**

It will be expected for successful proposals to produce a yearly report on the activities carried out, visits and workshops attended, based on the work-plans outlined in Section F of the Proposal Form.





**Project proposal submission FORM**

***This form must be completed using 10pt Arial font. Margins must not be adjusted.***

**The joint proposal must consist of the following parts, in one single file (maximum of 10 pages, excluding part J):**

1. **Institutional Details**

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| --- | --- |
| **Name of Principal Investigator (1)[[2]](#footnote-3)** |  |
| **Current position**  *(Note that applicants must fulfil eligibility requirements – see footnote 2)* |  |
| **Scholarly URL/Google Scholar** |  |

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| **Name of Principal Investigator (2)** |  |
| **Current position** |  |
| **Scholarly URL/Google Scholar** |  |

1. **Project Title and Acronym**

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| **Guidance**: Please provide project title and acronym |

1. **Abstract**

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| **Guidance**: Summary of the main goals of the project, in a clear and concise manner, for the benefit of reviewers. This summary should not exceed 1600 characters, including spaces. |

1. Description of the research project

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| **Guidance:** Description of the scientific project, how the project fits with the call’s theme for this application cycle, quality and originality of the project, interdisciplinarity, objectives, scientific methodology, expected results and their meaning and future perspectives. Explain the added value of the doctoral candidates’ projects in the overall project. Explain the relation between the project and the research themes of the laboratory**. Describe why the project requires and benefits from the Imperial-TUM collaboration. If there are existing collaborations between the two PIs/research groups, please briefly describe these in the proposal.** |

1. How does the project impact the current state-of-the-art and how does it aim to go beyond it

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| **Guidance:** Describe how the intended collaboration and planned activities will advance the current state-of-the-art. |

1. Describe how the co-supervision will be planned and implemented

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| **Guidance:** Describe the planned activities in the framework of the project to implement the co-supervision of doctoral candidates and provide a timetable. If PIs have previously supervised doctoral candidates, please characterise the track record of support and mentorship of these candidates (supporting candidate’s or joint PI-candidate publications, etc.). Explain how these activities will help achieve the aims of the project. This part should include explicit lines regarding the planned travel of the PIs and the doctoral candidates to the other country and the expected period of stay in the partner University, and how it will complement and impact the activities planned. |

1. **Commitment to actively engaging with the programme’s training and development activities and supporting doctoral candidates to engage fully in the programme.**

**Guidance:** The programme aims to not only have collaborative projects with co-supervision but to jointly train and develop a cohort of doctoral candidates, to develop a uniquely engaged cohort rather than a collection of individual projects, which can help foster better outcomes for the projects and help develop a cluster of excellence. As such, PIs who apply need to confirm their commitment to actively engaging in online and in-person co-supervision activities and training opportunities including seasonal schools, the annual symposium, etc. Please note why this approach is appealing to you and your project. In addition, if you have any suggestions for training or other ways you might be able to engage with the cohort, beyond the research collaboration and co-supervision of the project, please do include these.

1. Sustainability & “life after the project”

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| **Guidance:** A description of potential opportunities available for ensuring sustainability of project outputs beyond the end of the planned activities e.g. identification of potential funding sources to grow and extend research projects. Furthermore, a brief concept on how the collaboration has the potential to grow beyond the project’s timeline and expectations of wider scope. |

1. Data/Ethics/Deployment Considerations (if relevant)

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| Guidance: Does the project have any ethical implications? If yes, please describe them and how they are dealt with. |

1. Candidate Backgrounds

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| Guidance: Describe the feasible candidate backgrounds and how they are relevant for the project |

1. Scientific quality of the teams (This section does not count towards the page limit)

Guidance: Please attach in annex a list of complete citations of no more than 10 publications related to the project for each team, including publications from previous doctoral candidates that have been supervised by the PI.

1. Short curriculum vitae of Principal Investigators (This section does not count towards the page limit)

1. N.B. Please note that at Imperial, only researchers who are permanent members of staff, and at TUM, only researchers whose contract extends beyond the four-year funding period and who can act as doctoral supervisors, can be named as Principal Investigators. [↑](#footnote-ref-2)
2. Please note that the Primary Supervisor’s institutional affiliation will determine candidate registration and award. [↑](#footnote-ref-3)