

GUIDELINES for BIH translational PhD project grants

BIH aims to train a new generation of translational scientists and has established different interlinked training programs. These include the funding of PhD students from different fields that work at the interface of basic and clinical research.

The BIH Biomedical Academy will award annually up to 10 PhD project grants to support cross disciplinary research and training. The funding covers 3 years' salary for a PhD student and an annual project allowance of 3000 €. BIH translational PhD grants fund newly designed translational projects for students starting a new PhD project rather than bridging funding gaps in current projects.

The minimal requirements for project proposals include the concept of twinning. Here, a team of two supervisors, one from MDC and one from Charité respectively, conceive a joint project incorporating aspects of translational research and systems medicine¹. Typical teams consist of a basic and a clinical researcher but basic/basic and clinical/clinical teams are not excluded, as long as the potential translational benefit of the proposal is convincing to the reviewers.

Project proposals are selected for funding by a peer review process. The recruitment of students to accepted project proposals must be open, transparent and competitive. Students are required to join an affiliated graduate or research school and/or sign a supervision agreement with the supervisor team.

Training

A teaching contribution from the team of supervisors to BIH core training activities may be requested in the first and the second years of the PhD project (minimum of 2 hrs. teaching per year per supervisor).

The inclusion of a BIH relevant teaching contribution by the supervisor team within the PhD project proposal is strongly recommended¹. This can either be a novel teaching concept offered to the BIH Biomedical Academy or it can utilise an existing graduate level training offer at MDC or Charité that is opened up to BIH graduate students at MSc and/or PhD level.

If proposed, the offered teaching contribution from the supervisor teams should contain at least a training lecture but can also include a journal club, a clinical visit, a (methods) workshop, etc. Training will be set up flexibly to address the specific pedagogic needs of each training unit.

Offered BIH training activities may include but are not restricted to:

- Fundamentals in Genomics, Proteomics and Metabolomics
- Statistics/Bioinformatics/Working with Large Data Sets
- Clinical Workshops in Systems Medicine
- Clinical Visits/Trials, Epidemiology
- Quality Assurance Aspects in Research
- etc.

Recruited students will be expected to attend five to six mandatory BIH core training activities in each of their first two years. This also applies to students enrolled in affiliated schools. In addition, the BIH Biomedical Academy will organize a range of optional training activities that are open to all.

Selection procedure

Prior to the review process, the eligibility to supervise and recruit PhD students for both team members and the availability of resources to accommodate the PhD student will be verified by the host institutions. We recommend that you check with your host institute that you are eligible for this funding instrument before you start writing a proposal.

The selection of project proposals will be carried out by peer review. Each proposal is to be assessed by at least 3 reviewers. After discussion and confirmation by the BIH Board of Directors, the top 10 ranked proposals will be funded². The assessment comprises of a numerical scoring and a written comment component.

Anonymized reviewers' comments will be made available to the applicants after the funding decision has been reached.

The evaluation criteria are:

1. Scientific excellence
2. Novelty and significance of the proposed project
3. Relevance of the project to the fields of translational and system medicine within the context of BIH
4. Appropriateness of the host laboratories to conduct the proposed project and the relevance of the collaboration
5. If applicable, the contribution to ongoing BIH translational core training activities

Reviewer selection

Any Charité/MDC faculty member who is eligible to apply for this funding instrument can also volunteer to act as a peer reviewer. You will only be asked to review appropriate proposals in years where you are not yourself submitting a project proposal.

The selection of reviewers for all submitted proposals will be done by the BIH head office². Reviewers with proven expertise in the relevant research field (as determined by their publication record) will be assigned in such a way that both the clinical and basic scientific aspects of the project can be assessed. External reviewers may be included by the BIH head office to support the assessment of proposals in cases where insufficient internal reviewers can be found.

To avoid a potential competition bias, applicants can list up to four faculty members and up to four external colleagues that should be excluded as reviewers.

Affiliated graduate and research schools

Affiliated schools are expected to fulfil the following requirements:

- Reviewed and approved externally, e.g. Excellence Initiative/DFG, Helmholtz, etc.
- Transparent international competitive recruitment procedures
- Annual project/progress committees
- Credit point system or similar
- Scientific and complementary training activities
- Recognition of the participation requirements of translational PhD project students in BIH training activities by the affiliated schools' curriculum
- Secured capacity for training and mentoring of students for another 3 to 4 years

Currently affiliated graduate and research schools:

- Berlin-Brandenburg School for Regenerative Therapies (BSRT)
- Berlin School of Integrative Oncology (BSIO)
- Interdisciplinary Graduate Program on Adoptive T cell Therapy (SFBTR36)
- International Graduate Program Medical Neurosciences (MedNeuro)
- International Helmholtz Research School Molecular Neurobiology (MoNeuro)
- International Helmholtz Research School Translational Cardiovascular & Metabolic Medicine (TransCard)
- MDC - NYU Exchange Program in Medical Systems Biology (MDC –NYU)
- MDC International PhD Program / Helmholtz Graduate School Molecular Cell Biology (HGS-MCB)

Previously affiliated graduate and research schools (not currently recruiting):

- Hormonal Regulation of Energy Metabolism, Body Weight and Growth (DFG GK 1208)
- International Research Training Group for Myology (MyoGRAD)

On fulfillment of BIH requirements, additional graduate and research schools may become affiliated (for further information please contact the BIH Biomedical Academy).

¹ In preparing your project proposal and, if applicable, your offer for a teaching contribution, please also see the annex on the BIH definitions of translation and systems medicine.

² The promotion of equal opportunities on a structural and personnel level is firmly rooted in the identity of BIH. BIH strives to achieve equal representation of men and women from diverse backgrounds in research and science and fosters a family-friendly working environment in order to establish an organizational culture characterized by gender and diversity sensitivity.

In order to foster gender balance in research teams, equal opportunity aspects are integrated into the funding lines. With regard to the BIH translational PhD project grants, BIH strives to achieve a minimum of 25% female researchers among the successful applicants within one award procedure. Therefore, preference will be given to projects with a balanced gender representation in cases of similar quality. BIH also strives to include at least one assessment by a female reviewer per project proposal.

ANNEX 1: Dates and deadlines

Date	Activity/announcement
11 March 2015	Call for translational PhD project proposals online
15 April 2015	Deadline for translational PhD project proposal submissions
17 April – 15 May 2015	Peer review
18 May 2015	Ranking of proposals and confirmation by the BIH Board of Directors
19 May 2015	Notification of successful project teams
20 May 2015 and onwards	Announcement of projects selected for funding on the BIH website and recruitment of students to awarded projects
October 2015 – May 2016	Start of PhD projects

ANNEX 2: Guidelines for project submission

- Projects should have the potential to contribute substantially to the understanding of basic mechanisms of disease processes and deliver viable solutions to unmet clinical needs whilst following a systems medicine approach. Where applicable, the inclusion of expert statistics council/support should be documented.
- Projects must be interdisciplinary and have the potential to exchange knowledge between basic research and clinical application.
- The project must be supervised by one PI from MDC and one PI from Charité.
- Through this funding instrument, each PI can take part at any time in a maximum of two BIH translational PhD projects simultaneously, once as main supervisor and once as second supervisor. At the date of the call deadline, previously supervised BIH PhD translational project grant students count towards this quota unless they have successfully submitted their PhD thesis (or have officially withdrawn from the project).
- PIs are required to inform the BIH Biomedical Academy immediately if a project partner decides to move to a different institution either during the application or the funding phase.
- If successful, the summary description of project proposals provided with the application will be published on the BIH website and may be used for BIH publicity purposes such as the annual report. PIs can inform BIH not to use the original summary description, instead providing an alternative text upon receipt of funding notification.

Timeline for project submission and implementation

- The deadline for submission of project proposals via the [BIH online application portal](#) is 15 April 2015.
- Applicants will be informed of the outcome of the selection procedure on 19 May 2015.
- The results of the project proposal selection procedure will be published on the BIH website from 20 May 2015 onward.
- PhD project proposals that have been awarded funding are expected to recruit and employ a PhD student within 12 months of the date of receipt of funding notification.
- If a supervising team member changes their place of work after the proposal has been submitted but prior to the start of funding, an informal request may be submitted to the BIH Biomedical Academy that outlines how the project realization is ensured. Based on this request, the BIH Board of Directors will decide if the project can be funded.

- If a supervising team member changes their place of work within the project funding period, an informal request may be submitted to the BIH Biomedical Academy that documents results obtained so far and outlines how the continued project realization is ensured. Based on this request, the BIH Board of Directors will decide if project funding can continue.

PhD student recruitment

- Upon receipt of a positive funding decision, supervisor teams can start recruiting a suitable candidate to their project.
- In all instances, candidates must be recruited in an open, transparent and competitive procedure. This includes the recruitment of students who have done their MSc project in one of the host labs.
- For candidates already involved in a PhD project with either of the host labs, and who wish to change projects, this previous involvement cannot exceed 12 months at the time of appointment.
- The recruitment of candidates to awarded projects is recommended to take place in association with a graduate or research school in which the PhD candidate may later enrol.

Project funding

- Candidates recruited to the project receive an employment contract or a research stipend with the 1st supervisor according to the employment policies of the 1st supervisor's host institute.
- The PhD project grant includes a 3000 € project allowance per year for three years.
- The 1st supervisor will be responsible for financing the candidate after three years in the cases where the PhD project is not yet finished.

ANNEX 3: Application details required

Please browse to the online application portal (online from 17 March 2015) via the BIH website at www.bihealth.org. During the online application process, you will be asked to provide the following information/documents:

- **Information**

Title of PhD project

Name, affiliation and contact details of the primary supervisor

Name, affiliation and contact details of the second supervisor

Please list here one supervisor from MDC and one from Charité.

Summary description of project proposal (Max. 1000 characters including spaces). If the project is selected for funding, this summary may be used as project description during recruitment procedures and for BIH publicity and reporting activities (you will be given the opportunity to provide an updated text).

- **PhD project proposal information.**

Please provide a PDF file with a maximum size of 4 MB which includes:

Description of PhD project

The project description may include images. (Max. 10.000 characters including spaces and figure legends, excluding references.)

Relevance to translational research and systems medicine

Please describe the relevance of this project with respect to translational research and systems medicine within the context of BIH. (Max. 2.000 characters including spaces.)

Optional: Teaching contribution

BIH welcomes suggestions/offers for teaching contributions that fit within the BIH remit and which do not unnecessarily duplicate other offers at MDC or Charité. (Max. 2.000 characters including spaces.). Teaching contributions can be offered at PhD level for the BIH Biomedical Academy or consolidate/enhance training within BIH affiliated PhD schools and/or master programs (i.e. Charité MSc. Molecular Medicine, Charité MSc. Medical Neuroscience).

Supervision and collaboration

Please describe the role and responsibilities of both supervisors and any additional staff members with regard to the PhD student and in the **collaborative** realization of the project. Which scientific, technical and/or other input is provided by each? (Max. 1000 characters including spaces.)

Documentation of supporting funds

Please confirm that you can provide the necessary supporting funds and resources for chemicals, antibodies, animals, computer time, lab space etc. for the duration PhD project.

Reviewer exclusion

Please do **not** include reviewer exclusion information in the main PhD project proposal PDF-file. A separate section in the online portal is provided for this.

- **CVs & References**

Please include a 1-page CV including a list of the 5 most relevant publications for each PI involved in the project combined into a single pdf-file.

- **Optional: Reviewers to be excluded**

Please list up to 4 faculty members and up to 4 external reviewers who should not be contacted to review your proposal.

ANNEX 4: BIH definitions of translation and systems medicine³

Translation at BIH

DEFINITION

At BIH, “translation” stands for a quality-oriented process of transferring knowledge generated in systems medicine-based approaches into medical benefits, as well as observations from clinical practice into basic science. Thus, translation represents an interdisciplinary process encompassing the discovery of mechanisms of action as a basis for the development of new products and procedures for diagnosis, therapy and disease prevention up to their testing on patients and volunteers. This process also includes the critical review, further development and revision of established models.

EXPLANATION/COMMENT

To ensure successful translational work, BIH is establishing standards to guarantee the quality and reproducibility of basic and clinical research.

Systems medicine-based knowledge results from studying dynamic interactions of the molecules, cells, tissues and organs as well as psychosocial factors that provide a foundation for life, in an effort to understand the interrelated systems that constitute a healthy human organism.

At BIH, translation goes hand in hand with the training of a new generation of translational scientists and their integration into laboratories and hospitals, as well as the development of structures to promote translational research.

Systems medicine at BIH

DEFINITION

Systems medicine at BIH encompasses methods to analyze the dynamic interactions of the molecules, cells, tissues and organs as well as psychosocial factors that form the foundations of life, in an effort to develop a broad understanding of the interrelated systems that constitute a human organism.

EXPLANATION/COMMENT

Systems medicine uses mathematical modeling to integrate data derived from clinical and experimental research to decipher the influence of different parameters (genetics, epigenetics, metabolism, infection, life-style and environment) on the human organism and to use this knowledge to conduct more precise studies. Systems medicine integrates and structures this complex information for a better understanding of the etiology, development and progression of disease and in the development of diagnostic, therapeutic and preventive procedures.

³ Revised versions of the German definitions approved by the BIH Board of Directors on 10 November 2014. The original German version (see below) is binding.

Original German definitions:

Translation am BIH

DEFINITION

Im BIH steht Translation für den qualitätsorientierten Prozess, der systemmedizinisch generiertes Wissen in medizinischen Nutzen sowie klinische Beobachtungen in die Grundlagenforschung überführt. Translation repräsentiert somit einen Disziplinen-verbindenden Prozess, der die Entdeckung von Wirkprinzipien sowie ihre Entwicklung und Erprobung am Patienten umfasst, mit dem Ziel neue Verfahren der Diagnostik, Therapie und Prävention zu finden. Dies geschieht auch unter dem Gesichtspunkt, etablierte Ansätze in Frage zu stellen, weiterzuentwickeln oder zu revidieren.

ERLÄUTERUNG

Um erfolgreiches translationales Arbeiten zu gewährleisten, etabliert das BIH Standards, die Qualität und Reproduzierbarkeit der klinischen Forschung gewährleisten.

Systemmedizinisch generiertes Wissen resultiert aus dem Studium der dynamischen Wechselwirkungen der dem Leben zu Grunde liegenden Moleküle, Zellen, Gewebe und Organe sowie psychosozialen Faktoren in dem Bemühen, die den gesunden menschlichen Organismus ausmachenden Zusammenhänge (Systeme) zu verstehen.

Im BIH geht Translation einher mit der Ausbildung einer neuen Generation von translationalen Wissenschaftlern und deren Integration in Kliniken sowie dem Aufbau von Strukturen, die translationale Forschung begünstigen.

Systemmedizin am BIH

DEFINITION

Die Systemmedizin des BIH analysiert die dynamischen Wechselwirkungen der dem Leben zu Grunde liegenden Moleküle, Zellen, Gewebe und Organe sowie psychosoziale Faktoren mit dem Ziel, ein umfassendes Verständnis der den gesunden menschlichen Organismus ausmachenden Zusammenhänge (Systeme) zu entwickeln.

ERLÄUTERUNG

Die Systemmedizin nutzt mathematische Modellierungen zur Integration der aus der klinischen und der experimentellen Forschung abgeleiteten Daten, um den Einfluss verschiedener Parameter (Genetik, Epigenetik, Metabolismus, Infektion, Lebensstil und Umwelt) auf den menschlichen Organismus zu entziffern und darauf basierend präzisere Studien durchführen zu können. Sie integriert und strukturiert diese komplexen Informationen, um Entstehung, Entwicklung und Verlauf von Krankheiten besser zu verstehen und diagnostische, therapeutische sowie präventive Verfahren zu entwickeln.

ANNEX 5: Evaluation

All faculty members of MDC and Charité who are eligible to supervise and recruit PhD students are invited to volunteer for assessing project proposals. Reviewers with relevant expertise for the submitted proposals will be selected by the BIH head office. In addition, external reviewers may be contacted to support the assessment procedure by the BIH head office if insufficient internal reviewers can be found.

Reviewers are asked to rate the following questions from 1 (exceptional) to 5 (poor) and to comment on them.

Evaluation Questions:

- **Scientific Excellence: How do you rate the scientific excellence of the proposal?**

Rate from 1 - 5 points (weight 35%)

- **Innovation: How do you rate the novelty of the proposal?**

Rate from 1 - 5 points (weight 25%)

- **BIH Exclusivity: How do you rate the contribution of the proposal to the fields of translational and systems medicine research, specifically within the context of BIH?**

Rate from 1 - 5 points (weight 25%)

- **Collaboration and Supervision: How convincing is the collaboration between both supervisors and their ability to supervise the project?**

Rate from 1 - 5 points (weight 15%)

- **Training: If applicable, do you judge the offered teaching contribution of the supervisor team to be worthwhile and (as far as you can tell) not unnecessarily duplicating other training offers at Charité and/or MDC?**

Y/N/NA

- **I would/would not like to see this proposal funded because...?⁴**

Would/Would not

When commenting on the project proposal, please avoid any direct comparison with other proposals and any comments that may reveal your own identity to the applicants. Your anonymized comments will be made available to the applicants after the selection has been finalized.

⁴ Projects where the answer to this question is 'would not' by more than half the reviewers will not be considered for funding.