

Guidelines for proposals for IGSSE Project Teams – Call No. 13

Call opens February 26, 2018
Call closes April 2, 2018



1. General introduction

The TUM International Graduate School of Science and Engineering (IGSSE) acts as the hub for innovative research across TUM departments and their international research partners. IGSSE combines academic excellence with high-profile doctoral education in small and flexible, interdisciplinary project teams. A comprehensive doctoral training program fosters international orientation as well as career and personal development.

Applicants can apply for two types of IGSSE project teams that differ structurally and conceptually:

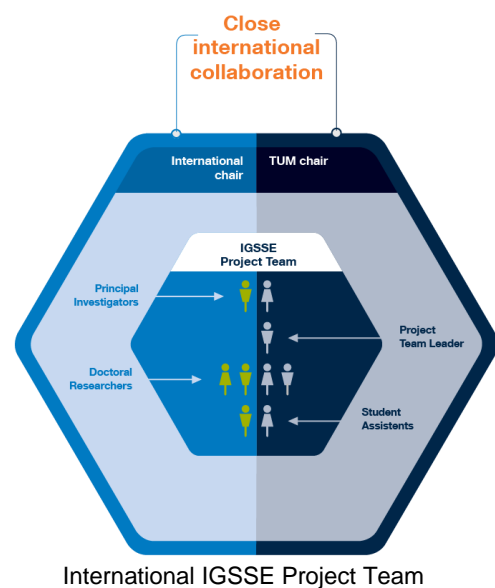
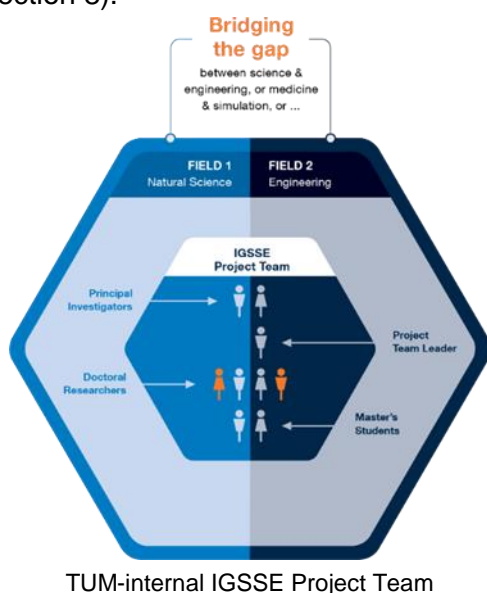
- **TUM-internal IGSSE Project Teams** comprise senior scientists, doctoral researchers and students *from at least two different TUM chairs, involving diverse departments*, e.g. physics & aerodynamics or biology & chemistry (see section 7).
- **International IGSSE Project Teams** comprise senior scientists, doctoral researchers and students *from one TUM chair and one of three international collaboration partners* (see section 8).

IGSSE Project Teams are based on a co-funding model. *For each IGSSE-funded doctoral researcher at TUM, the respective chair has to complement the project team with an additional doctoral researcher ('associated doctoral researcher'), funded through other channels.* A consumables budget is provided by IGSSE for all doctoral researchers at TUM.

All TUM doctoral researchers in the project team will become members of the thematic graduate center IGSSE and the TUM Graduate School. The IGSSE qualification program and the TUM Regulations for the Award of Doctoral Degrees apply, including the qualification requirements specified there.

The current call for proposals ends at April 2, 2018. The following rules and guidelines apply.

In response to the large number of applications in recent calls, *PIs and PTLs can only participate in one proposal at a time.* In particular, individual chairs can only host IGSSE-funded doctoral researchers in one project. As a result, hosting chairs of PIs as well as PTLs with on-going projects from the previous two years (IGSSE Calls 11 and 12) cannot apply at this time.



2. Team setup and budget allocation

2.1. Principal investigators (PIs)

PIs submit proposals for project teams together with the designated PTL. For eligibility of TUM PIs, see §4 of the IGSSE Statute (<http://www.igsse.gs.tum.de/index.php?id=20>). *All primary supervisors of doctoral theses integrated in the IGSSE Project Team (i.e. at least two individuals who are entitled to award doctoral degrees at TUM: professors, emeritus professors, retired professors, TUM Distinguished Affiliated Professors, TUM Junior Fellows, or fellows of the TUM Institute for Advanced Study) must be listed as PIs in the proposal.* IGSSE requests that the doctoral researcher's main supervisors are PIs on the proposal.

IGSSE aims to achieve a ratio of at least 20% of women also among PIs.

2.2. Project Team Leaders (PTL)

IGSSE Project Teams are led by a TUM post-doc, the Project Team Leader (PTL), who is responsible for setting-up the collaboration within the project, as well as the monitoring of its progress, financial controlling, interim and final reports. Project Teams start with a kick-off meeting organized by the PTL introducing the team members. At the latest 24 months after that, each project team has to submit an *interim report* and a *final report* at the end of the project life-time.

The PTL will be the key contact for communication within the team and with the IGSSE management. They will mediate in cases of conflict and support the PIs in their supervisory role. The PTL is also in charge of administration, the team budget and the organization of team meetings.

To foster the project team communication, *PTLs are urged to join the doctoral researchers in the workshop 'Project Team Toolbox'* as described in the IGSSE Qualification Program Guide (Annex 2).

PTLs are entitled to €10,000 for mobility and consumables and €2,200 for specific personal development/ qualification measures. They must already be nominated in the proposal.

2.3. Doctoral researchers

One doctoral researcher is financed at each participating TUM chair through IGSSE (receiving a monthly stipend of €2,000) over three years provided that the progress of the doctoral project is positively evaluated after the first two years.

For each IGSSE funded researcher, one additional researcher (associated member) is to be funded by the participating chair(s) ('co-financing model'). IGSSE funding will only start after the associated doctoral researchers have become members in IGSSE. Apart from doctoral researchers in medicine, this will typically not delay the hiring of the IGSSE-funded doctoral researchers significantly.

IGSSE Project Teams are to ensure diversity (internationality, gender) in the composition of the team.

IGSSE Project Teams involving medical sciences

TUM doctoral researchers of Klinikum rechts der Isar (MRI) or Deutsches Herzzentrum München (DHM) aiming for a 'Dr. rer. nat.' have to enrol in the doctoral program 'experimental medicine' at the Medical Graduate Center (MGC) *prior* to their IGSSE membership. As the enrolment process is fully under MGC governance and may take three or more months, it is crucial to register at the MGC as soon as possible to minimize any possible delay for IGSSE funds. Furthermore, PIs with a membership at a TUM department other than the Medical School ('Zweitmitgliedschaft') are encouraged to enrol their doctoral researchers via this department.

2.3.1. Consumables

For each TUM doctoral researcher in the IGSSE Project Team (i.e. each doctoral researcher at TUM who has become member of IGSSE as part of the project), the project receives €5,000 dedicated to buying consumables or durable goods like e.g. computer equipment, chemicals, or laboratory facilities. It can also be used for recruitment, hosting project-relevant conferences, or invitation of guests. *PIs (including their project-related travel) cannot be supported.*

This money is pooled for each participating chair (i.e. typically one chair hosting two doctoral researchers receives €10,000). By mutual agreement this budget may be transferred freely from one chair to another.

2.3.2. Mobility funds

Part of the IGSSE Qualification Program is a compulsory research stay abroad of (at least) three months, for *both IGSSE-funded and associated doctoral researchers. They receive up to €4,000* respectively to help with travel and living costs abroad. Funds remaining after the research stay may be used for other travel (e.g. for conferences).

In addition, *all doctoral researchers at TUM can receive further €4,000 for personal travel* including prolonged stays abroad, conferences, research visits, etc.

The mobility budget may be supplemented by the consumables money (but not vice versa). It cannot be transferred from one doctoral researcher to another.

2.3.3. Prolongation of scholarships

In case the doctoral researcher has officially handed in his/her thesis 36 months after starting the doctorate, an extension of the scholarship of up to three months may be granted. If the thesis is not finished after three years, the main supervisor secures funds that support the doctoral researchers to finish their individual project.

2.3.4. Qualification Program

All doctoral researchers have to complete the IGSSE Qualification Program as outlined in Annex 2, complementing the TUM Regulations for the Award of Doctoral Degrees. This includes e.g. registration with DocGS, participation in the TUM Graduate School Kick-Off Meeting etc.

Mandatory elements of the IGSSE program are

1. Annual IGSSE Forum (minimum 2 participations)
2. Research stay at an international institution abroad (3 months)
3. Team Toolbox training (1/2 day)
4. i³ Workshops (minimum 1 participation)
5. Science communication (minimum 1 presentation)

Elements 1 and 3 should be accomplished as joint activities of the Project Team. Doctoral researchers of international collaboration partners can participate on a voluntary basis.

2.3.5. Recruitment

The PIs will ensure a transparent selection process for all doctoral researchers in the IGSSE Project Team. The positions should be advertised by the PIs *internationally* in discipline-specific announcements and through other media. The IGSSE management office will be happy to post the positions on the IGSSE website.

2.4. Student assistants

The project teams may request up to €3,600 per doctoral researcher to employ student assistants (master's students, 'WiHis'). This money is earmarked and cannot be used for other purposes.

As with the consumables, this money is pooled for each chair and by mutual agreement may be transferred from one to the other chair.

3. Proposals

Central to the proposal are descriptions of the thesis projects of all participating doctoral researchers (including associated doctoral researchers). These descriptions should be supplemented by a summary of the research field and own preparatory work. Furthermore, the application has to contain a concept that ensures close cooperation between the members of the IGSSE Project Team and the joint training of doctoral researchers. It should also detail anticipated collaboration with international partner institutions including plans for organizing the obligatory international 3-month research

stays abroad for all TUM doctoral researchers. A clear concept of the interdisciplinary collaboration of the team and envisaged doctoral training modules are key elements in the proposal reviewing process.

Proposals are expected to include a rough work schedule and must be signed by the PIs and the nominated PTL. Submitted *proposals must not exceed 10 pages* in length. *The 10-page limit includes all appendices (in particular references)* with exception of reports on previous IGSSE Project Teams and CVs of PIs and PTLs.

In the proposal, a future perspective on how to develop the project beyond the IGSSE horizon should be elaborated (e.g. externally funded research group, joint publications, spin-offs).

3.1. Evaluation procedure

All project proposals are subject to an evaluation procedure performed by the IGSSE Board and external referees.

To optimize the search for referees, we request all PIs to provide (via separate email at the time of submitting the proposal) contact data (name, email, affiliation) for four individuals that are familiar with the fields of research, but are not subject to conflicts of interest. In particular, they must not share publications or other scientific work with the proposing PIs. PIs are responsible to make sure that potential referees will provide a review if contacted by IGSSE. For further details, see Annex 1 – Proposal Template.

In a first step, the IGSSE Board will review all proposals and examine whether an application matches the IGSSE goals both conceptually and structurally. These aspects include primarily *interdisciplinarity* (plans for exchange across disciplines, regular team meetings, potential job shadowing initiatives within the team, etc.) and

internationality (projects should exhibit strong international components, e.g. research visits, hiring of international doctoral researchers, presence at conferences, invitation of guest researchers, publications including external partners, etc.). Projects not living up to the expected standards will be rejected and excluded from the subsequent reviewing process.

Following this, proposals will be evaluated by two external referees. To this end, the board will usually select one referee from the proposer's suggestions and identify another themselves. The external reviewers will evaluate primarily scientific excellence, but consider the interdisciplinary requirements as well.

After that, the IGSSE Board reconvenes and takes the final decision. In case of comparable reviews, the board will pay attention to further aspects, e.g. distribution of projects amongst all TUM departments, interdisciplinary orientation, international networks, internationality and diversity of the team. Projects with young researchers acting as PIs might be favored in direct comparison.

Moreover, diversity is an aspect of increasing importance, which should be reflected in the proposal, e.g. by hiring female doctoral researchers and/or doctoral researchers from abroad.

In summary, the evaluation procedure adheres to the following process:

- Proposals are screened by the IGSSE Board and applications not matching the IGSSE criteria are rejected.
- Remaining proposals are evaluated by at least two external referees from different science branches.
- The IGSSE Board reviews the referee reports and decides on the basis of available funding and all evaluation criteria.

- After the Board decision, the IGSSE Management Office prepares excerpts from the referee reports and the IGSSE Board's discussion and forwards them to the proposers together with the official letter of acceptance or rejection. Further information or the full report will not be provided.

4. Public relations

IGSSE Project Teams shall establish links on their web pages to the IGSSE website. They shall give credit to IGSSE in all scientific activities (e.g., papers, conference contributions, etc.).

As part of the IGSSE Qualification Program (see Appendix 2), doctoral researchers have to present their IGSSE project in at least one 'Science to the public'-event (e.g. open house day, 'Lange Nacht der Wissenschaft', or a popular science article in a magazine).

5. Miscellaneous

All funds are administrated through IGSSE and granted upon request and availability of funds. IGSSE reserves the right to alter funding schemes at any time.

6. Appendix

- Annex 1 – Proposal Template
- Annex 2 – Qualification Program Guide

7. TUM-Internal Project Teams

IGSSE TUM-Internal project teams integrate approaches and methods from at least two diverse disciplines (involving two different TUM departments) towards a common scientific goal. A clear concept of the interdisciplinary collaboration of the team and envisaged doctoral training modules are key elements in the proposal reviewing process.

IGSSE awards scholarship grants and training funds to interdisciplinary Project Teams typically consisting of

- four doctoral researchers (two IGSSE-funded doctoral researchers and two associated doctoral researchers who also become members of IGSSE). All doctoral theses must be elaborated on in the proposal;
- an IGSSE Project Team Leader at TUM (PTL; typically a postdoc);
- two or more IGSSE Principal Investigators at TUM (PIs; typically professors) from at least two different TUM departments.

IGSSE TUM-internal Project Team. Total Funding over project lifetime (4 doctoral researchers): 222,6k€

	Scholarship	Travel	Research stay	Consumables	Student Assistant	Training
Doctoral Researchers (DR)	€72,000 <small>Only IGSSE-funded DR</small>	€4,000 <small>per DR</small>	€4,000 <small>per DR</small>			Upon application
Project funds				€5,000 <small>per DR</small>	€3,600 <small>per DR</small>	
Project Team Leader		€10,000				€2,200

8. International IGSSE Project Teams

To strengthen TUM's network across the globe and to promote mobility of doctoral researchers, IGSSE enforces international scientific collaborations and staff exchange. In this call for proposals, IGSSE wants to enhance collaboration with longstanding, excellent partners of TUM.

Therefore, we introduce 3 regional focuses for international project teams:

- **University of Queensland, Australia**
- **Institute for Computational Engineering and Sciences (ICES), The University of Texas at Austin, USA**
- **State of São Paulo, Brazil (tbc.)**

Applications for IGSSE International Project Teams are only possible if the co-applicant is from one of these three focus regions/ universities. See below for the specific requirements for each focus, such as thematic restrictions, timelines, or format requirements.

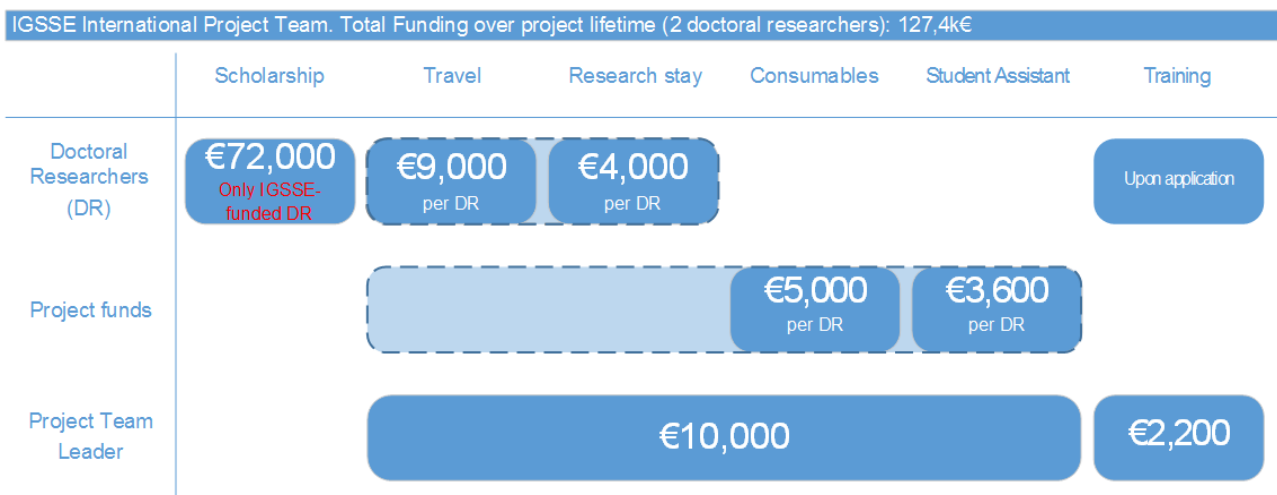
IGSSE awards scholarship grants and training funds to International Project Teams typically consisting of

- at least one PI at TUM and one additional PI affiliated with a partner university abroad;
- one PTL at TUM;
- one IGSSE-funded doctoral researcher and one or two associated doctoral researchers at TUM, all becoming members of IGSSE.
- one or more doctoral researchers working on the project's subject affiliated to the international partner.

In an International IGSSE Project Team, one half of the project is provided by an external partner institution. This partner has to employ at least one doctoral researcher to work on the topic of the project. Ideally, they should match TUM's funding and setup, i.e. bring at least two doctoral researchers into the project. All doctoral theses must be elaborated on in the proposal.

Doctoral researchers at TUM can receive further €5,000 for personal travel due to the increased travel activity to meet and exchange with the international partner institution.

At TUM, IGSSE funds one doctoral researcher with the involved TUM chair that is supplying at least one associated doctoral researcher. The PIs (including the PI at the partner university) typically share the supervision or mentoring of the doctoral researchers.



Specific requirements for a proposal with researchers from
The Institute for Computational Engineering and Sciences (ICES), The University of Texas at Austin

- Building on the strong links between TUM and the Institute for Computational Engineering and Sciences (ICES) at UT Austin, there will be a thematic focus on the field of **computational engineering and sciences**.
- Particular care should be taken in elaborating on how to develop the project beyond the IGSSE/ICES horizon, especially regarding follow-up grant applications (e.g. DFG, NSF, Industry)
- Plan for 1-2 annual meetings of all team members
- Contact person at ICES: Professor J. Tinsley Oden, ICES Director, oden@ices.utexas.edu

Specific requirements for a proposal with researchers from
The University of Queensland

- Building on the strong links between TUM and the University of Queensland, there will be a thematic focus on **life sciences, including nano- and biotechnology, and engineering**. Nevertheless, researchers with complementary scientific interests and expertise are strongly encouraged to apply.
- On the UQ side, project teams may vary in their size and composition but must include a minimum of 1 PTL and 1 early career academic
- UQ-specific documents need to be considered as well - see UQ specific guidelines
- Contact person at UQ: Ms Kate Swanson, UQ Graduate School, k.swanson@uq.edu.au

Applicants should provide a mobility and communications plan for the entire International IGSSE Project Team (including descriptions of the partner's doctoral researchers' thesis topics). At least one annual meeting of all members involved in the project is required. Partner institutions must provide a letter confirming an understanding of these regulations together with the proposal.

Proposals for international IGSSE Project Teams are simultaneously screened by the IGSSE Board and a board of the respective partner institution. Due to this joint evaluation process, International IGSSE Project Teams will also have to comply with the specific requirements set out by the respective partner organization (see grey boxes above). After external review, the IGSSE Board and a board of the respective partner institution review the referee

reports and decide on the basis of available funding and all evaluation criteria.