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STAR
Step Ahead through Research
Eine Initiative des Forschungslandes OÖ

FWF

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On behalf of the State of Upper Austria, FWF issues the following

Application Guidelines for the Young Research Groups Programme of the State of Upper Austria

in cooperation with FWF



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1. General information

The Young Research Groups are funded by the State of Upper Austria as part of the STAR (Step Ahead Through Research) research funding initiative. FWF is responsible for the administration of the programme.

1.1. Aims of the programme

The objectives of the programme are as follows:

- To strengthen Upper Austria as a research location,
- To increase the attractiveness of Upper Austrian universities and research institutions to young high-potential researchers from all over the world,
- To acquire talented young researchers by opening up long-term career prospects.

1.2. Definitions

A few important terms are explained below:

Young Research Group	Research group funded as part of the Young Research Groups funding programme
Group leader	Head of the Young Research Group (= principal investigator)
Applying research institution	Upper Austrian research institution which submits the application and where the group leader will be working as part of the funded project
Mentor	Person employed at the applying research institution who assists with the integration of the Young Research Group into the research institution and the career development of the group leader
Participating research institution	Upper Austrian research institution involved in the proposal
Regional research partner	Person working at a participating research institution who uses the funds at the participating research institution as part of the Young Research Group project

1.3. Submission deadline

The first call of the Young Research Groups project begins on 12 November 2018 and ends with the submission deadline on 30 April 2019. Applications for the programme can be submitted to FWF during the application period but no later than the day of the submission deadline. The date of the postmark shall serve as proof of timely submission.

1.4. Who is eligible to apply?

Johannes Kepler University Linz is eligible to apply. The programme is directed towards

researchers who want to set up a research group at Johannes Kepler University Linz and establish themselves there on a long-term basis. Please also note the application requirements (see 1.7).

The application is submitted by the research institution together with a person from the research institution nominated to lead the respective Young Research Group, meaning that the research institution has already chosen a potential group leader for the proposed Young Research Group by the time the application is submitted. If the project is approved, the funding is linked to both the research institution as well as the person of the respective group leader.

Interested researchers should get in contact with Johannes Kepler University Linz (contact: [Gabriela Küng](mailto:gabriela.kueng@jku.at), gabriela.kueng@jku.at, phone: +43 732 2468 3371). FWF is also available to answer any questions about the programme (contact: [Barbara Stöss-Aichmayer](mailto:barbara.stoess-aichmayer@fwf.ac.at), barbara.stoess-aichmayer@fwf.ac.at, phone: +43 1 505 67 40 8509).

1.5. What types of projects can be funded?

Funding may be requested for projects in the field of non-profit scientific and scholarly research that are clearly defined, convincingly described in terms of aims and methods, and limited in time. This refers to research whose primary value is defined by its significance for the further development of science and research (knowledge-oriented research).

Double funding is not permitted; this means that a proposed project may not be funded, in part or in whole, by another agency or as part of another programme of the State of Upper Austria or FWF.

1.5.1. Topics of the call

The project proposed for a Young Research Group must be clearly defined and deal with the topics of the call, which are Artificial Intelligence and Medical Engineering. Projects can be submitted from all fields (incl. inter- and multi-disciplinary projects) that deal with one of these two topics. A short description of the two topics can be found in the appendix (see Appendix I and Appendix II).

1.5.2. Duration of the project

The project must be planned for a period of **eight years, divided into two four-year funding periods**. In addition, there must be a long-term career prospect (one that goes beyond the duration of the project) for the group leader of the Young Research Group and his/her research field at the applying research institution (see also 1.7.2). An **interim evaluation** shall be carried out before the end of the first four-year funding period. The second funding period can only be granted if the requirements specified in Section 4 (Interim evaluation) are met.

1.6. How many projects can be applied for?

The eligible research institution can submit no more than five applications for each of the two topics of the call mentioned in Section 1.5.1. Parallel submission of applications for Young Research Groups that are identical in substantial parts but with different nominated group leaders is not permitted. Each project can only be submitted once with a nominated group leader. The nominated group leaders may only be involved in one proposal/one project as part of the call.

It is planned to fund one Young Research Group from each of the two topics.

1.7. What requirements must be met to apply?

1.7.1. Active search on the part of the research institution for qualified group leaders and screening

During the approx. six-month period of the call (see 1.3), the research institution and the organisational units interested in establishing a Young Research Group (such as institutes) actively search for potential group leaders of future Young Research Groups. This search must be announced internationally. The selection of the persons nominated as group leaders must follow a clear and reasonable procedure and be described briefly in the application (see 2.3.1).

1.7.2. Career prospect and integration of the Young Research Group

The applying research institution must provide the nominated group leader with a convincing, long-term career prospect which includes the specific prospect of a permanent position as researcher. In addition, an employee at the applying research institution qualified to be a mentor must assist in the integration of the Young Research Group into the research institution and the career development of the nominated group leader. One aim of the programme is to achieve the long-term integration of the Young Research Group into the research institution at least by the end of the funding programme.

1.7.3. Research-related qualifications of the group leader

The group leaders proposed for funding by the research institution must meet the following requirements:

- Potential group leaders must have a doctoral degree and at least two years of research experience after finishing his/her doctorate. The doctoral degree may not have been gained more than eight years before the date of the submission deadline (30 April 2019). This period may be extended for documented periods of raising children; military and civil service; relevant education and training in the field such as clinical training in medicine; and long, serious illnesses that have led to gaps in the group leader's career.

- The nominated group leaders must have research experience after finishing their doctoral degree at a different research institution than the applying research institution. In general, several years of work experience at a foreign research institution is required.
- The group leader's qualification to lead the research group must be shown by an exceptionally good international track record (high-calibre, peer-reviewed publications in top-ranking, international journals, monographs, internally generated patents, etc.). The following criteria are decisive for assessing the publication track record of the nominated group leader and initiating the review process:
 - Number and quality of the group leader's publications must be commensurate with his/her career stage and meet the high standards of the programme. The profiles of FWF START principal investigators (<https://pf.fwf.ac.at/en/research-in-practice/project-finder>) or ERC *Starting Grantees* (<http://erc.europa.eu/projects-and-results/erc-funded-projects>) can serve as a guide.
 - Peer review: All the publications listed (or more than half in the case of the humanities) must have been subject to a quality assurance procedure in line with high international standards, which usually means that journals should be listed in the *Web of Science*, *Scopus*, or the *Directory of Open Access Journals* (DOAJ). For journals not listed in those databases, or monographs, edited volumes or contributions therein, or other publication types, a link to the publisher's website describing the respective peer-review procedure must be included in the publication list. Should no such description be available, it is the responsibility of the applying research institution to provide evidence that the publisher has conducted an appropriate quality assurance procedure on the publication.
 - International nature: In the natural sciences, life sciences, and social sciences, most of the publications listed must be in English. In the humanities and cultural studies, as well as arts-based research, most of the publications must have a wider than national reach.
- The group leader's research independence must be evident from his/her curriculum vitae (hereinafter referred to as CV) and publication list (e.g., principal investigator of third-party funded projects, lead and last authorships, sole authorships, corresponding authorships).

1.7.4. Exclusion criteria for group leaders

A group leader cannot be nominated under the following conditions:

- Persons who at the time of submitting the application already have a position at the applying research institution that includes the prospect of permanent employment upon fulfilment of a qualification agreement (e.g. tenure track position) or a permanent contract of employment in a research position cannot be nominated unless the employment contract is linked to third-party funding.

- Researchers also cannot be nominated who at the time of submitting the application already are or have been the principal investigator at the applying research institution as part of one of the following funding programmes: FWF START, ERC Grants. (Persons who received one of these grants in the past and carried out the respective project at a different research institution than the applying research institution can be nominated. However, the project concerned must have ended or will end before the Young Research Group project begins.)

1.8. What types of funding can be requested?

The maximum funding amount that can be requested for a Young Research Group is **€1 million for the first four-year funding period and €0.6 million for the second four-year funding period**, although the granting of the second funding period depends upon the outcome of an interim evaluation (see 4). In total, a **maximum of €1.6 million (incl. overhead costs)** can be requested for the entire planned duration of the project (= 8 years).

No funds may be requested for **infrastructure costs**. These include all facilities necessary to maintain normal operation of the research institution (e.g., buildings, installations, communications equipment, etc.). The applying research institution must provide the needed infrastructure for the research project and the Young Research Group.

In any case, the **personnel costs for the group leader** should be requested.

In addition, funds can be requested for **costs related exclusively to the project**. These are **personnel and non-personnel costs** which are needed to carry out the project of the Young Research Group and that go beyond the resources provided by the research institution in the form of infrastructure. A **maximum of €2,000 per year** can be used for **coaching and personal development** of the group leader.

Indirect costs shall be covered by a lump sum for **overhead costs** in the amount of 25% of the direct costs.

Please also see the provisions for eligible costs in Section 2.4.

2. Application content and form

2.1. Parts of the application (including length limits)

For an application to be complete, it must contain the following parts and adhere to the maximum length limits:

1) Academic abstract:

DIN A4 in English comprising **no more than 3,000 characters** (incl. spaces; no formulas or special characters) on **no more than 1 page**. The academic abstract will be used to inform potential reviewers about the planned project of the Young Research Group. The abstract must address the following items:

- Wider research context / theoretical framework
- Hypotheses / research questions / objectives
- Approach/methods
- Innovation/originality
- Researchers and research institutions involved
- Added value for the career of the group leader and for the applying research institution

2) Free-form application:

DIN A4, in English consisting of the following parts, in the given order (for further details, see also 2.3):

- **Cover sheet** (incl. project title, name of the nominated group leader, name of the applying research institution)
- Description of the **selection procedure for the group leader and the planned long-term integration of the Young Research Group**, signed by the nominated group leader, a person authorised to sign for the research institution, and the mentor. The description should be **no longer than 3 pages**
- **Academic CV** of the nominated group leader, **no longer than 3 pages**
- Complete **publication list** of the nominated group leader and a separate list of the top 5-10 publications
- **Description of the project** of the planned Young Research Group comprising **no more than 50,000 characters** (incl. spaces) on **no more than 20 consecutively numbered pages** (incl. the table of contents, illustrations, tables, the list of abbreviations, the list of works cited, etc.)
- **Letters of recommendation** (optional, **no more than two**)
- **Collaboration letters from national and/or international cooperation partners** that are stated to be essential for the project (optional, **no more than three**)

3) Completed forms:

- Required in all cases: application form, “Cost breakdown” form, “Co-authors” form
- Also required, where applicable: “Regional research partners” form, “International cooperation arrangements”

For further details on the forms, see 2.5.

4) Enclosures:

- **Vendor quotes** (if required, see 2.4)
- **Negative list** (optional) **comprising no more than 3** persons who should not be involved in reviewing the application due to possible conflicts of interest (incl. a brief explanation of the grounds for exclusion, see 3.3.1)
- **Cover letter** (optional)

2.2. Form requirements

2.2.1. Language of application

Since the application will be reviewed by international experts, applications must be submitted, without exception, in English. The academic abstract and all parts of the free-form application (including CV, letters of recommendation, etc.) shall be written exclusively in English. The details provided in the “Cost breakdown” and “Co-authors” forms must also be in English. The only enclosures that may be in German are those found in Section 2.1 under item 4.

2.2.2. Formatting

The academic abstract and all parts of the free-form application (except for the recommendation and collaboration letters) must be written exclusively in **11 pt. font**, with **1.5 line spacing**. Applicants **must comply strictly** with all **upper limits** (e.g., on the number of recommendation letters and the number of pages).

2.2.3. Submitting the application

The completed application (see the parts mentioned in Section 2.1) must be submitted in writing. A **single paper version** (DIN A4, loose pages) with the original signatures and stamps and an accompanying **storage medium** must be sent to FWF before the end of the submission deadline (see 1.3).

The inclusion of an electronic version of the application on a storage medium is intended to make the review process faster and easier. In the electronic version, no signatures are necessary. The files must be named as described below, and their size should be kept as small as possible. The total of all files submitted on the storage medium must not exceed 5 MB.

The following files (cf. also the application parts mentioned in Section 2.1) must be submitted on the storage medium (no protected files):

- **Academic_Abstract.docx** (one-page academic abstract, file format: Word)

- **Proposal.pdf** (all parts of the free-form application in one file, file format: PDF; order of parts: cover sheet, selection procedure and planned long-term integration, academic CV, publication list, project description; optional: no more than 2 letters of recommendation and/or 3 collaboration letters)
- **Forms.pdf** (all completed forms in one file, file format: PDF, no scanned files should be used; order of parts: application form, “Cost breakdown,” “Co-authors;” if required: “Regional research partners” and/or “International cooperation arrangements”)
- **Annex_Offers.pdf** (if required, all vendor quotes in one file, file format: PDF)
- **Annex_Reviewers.pdf** (optional, negative list [reviewers that should be excluded], file format: PDF)
- **Cover_Letter.pdf** (optional, accompanying letter, file format: PDF)

2.3. Detailed information on the contents of the free-form application

The following provides detailed information on the required contents of some parts of the free-form application (for a list of all parts of the application, see 2.1).

2.3.1. Selection procedure and planned long-term integration (no more than 3 pages)

This introductory part of the free-form application must address the following questions:

- How was the person nominated by the research institution to be group leader selected (brief description of the search and selection process)?
- What significance / added value does the planned project / the planned Young Research Group have for the career development of the nominated group leader?
- What long-term career prospects has the nominated group leader of the research institution been offered? Please note that the research institution must pledge to provide the group leader with a concrete prospect of a permanent position as researcher (cf. the application requirements – see 1.7.2 – and the information in Section 4 on the requirements for granting the second funding period of the project).
- What added value does the nominated group leader and his/her planned research bring to the long-term enhancement of the research institution’s profile and international competitiveness (particularly in terms of how they complement existing areas of expertise and fields of research at the research institution and contribute to new ones)?
- What plans do the research institution, the mentor, and the nominated group leader have for integrating the Young Research Group and its research area into the research institution?

The information provided in this part of the application must be confirmed by the **signature of a) the nominated group leader, b) the head of the research institution, and c) the mentor**. The mentor is an employee of the research institution who pledges to assist in the

integration of the Young Research Group into the research institution and the career development of the nominated group leader.

2.3.2. CV (no more than 3 pages)

The academic CV of the nominated group leader must contain the following contents:

- Name, contact details, and website
- Main areas of research
- List of academic milestones and relevant positions held to date (with a brief explanation of any career gaps, if applicable)
- Where applicable, the most important academic recognitions (**no more than 5** in each of the following categories: the 5 most important invitations to present at academic conferences; the 5 most important academic prizes/awards; the 5 most important peer review activities, editorships, and/or memberships in academic organisations)
- Where applicable, **no more than 5** of the most important funded research projects: projects should only be cited which were peer reviewed and in which the nominated group leader was the main person responsible for planning and carrying out the project. Please provide the following information for each project: project title, funding body, project duration, and funding amount.
- Where applicable, other research achievements, such as patents, software, codes, research data, etc.
- Where applicable, the name and institution of the most important international cooperation partners of the last 5 years

2.3.3. Publication list

The following information must be provided about the nominated group leader's publication record:

- a **complete list** of all published or accepted academic publications (journals, monographs, edited volumes, contributions to edited volumes, proceedings, etc.), distinguishing a) "peer-reviewed" publications from b) "non-peer-reviewed" publications
- a **separate list of the 5 to 10 most important** academic publications of the group leader's entire scientific/scholarly work to date

The information about the publications must contain the following contents: all authors, complete titles, journal, year, and page numbers. If there are more than 20 authors, only the first 20 authors must be listed (*et al.*). For each publication, either a [DOI address](#) or another [persistent identifier](#) should be indicated, if available.

2.3.4. Project description (no more than 20 pages with no more than 50,000 characters)

The description of the project must include the following contents:

1) Scientific/scholarly aspects:

- Clearly defined objectives, hypothesis(hypotheses), and research question(s) of the project
- Description of the project's anticipated degree of innovation
- Relevance to international research in the field (international state of research)
- Methods
- Cooperation arrangements (national and international): intended cooperation arrangements as part of the planned project should be explained in the project description. In the case of cooperation arrangements on an individual basis, this explanation should specify the people with whom the cooperation arrangement shall take place and the subject of the intended cooperation arrangement(s) (contribution to the project).
- Work plan and timeline
- Planned dissemination activities
- All potential ethical, safety-related or regulatory aspects¹ of the planned research project and the planned handling of it must be described in a separate paragraph. This aspect should be addressed briefly in the text even if the research institution applying believes the project does not raise any ethical issues.

2) Human resources:

- Research-related qualifications of the researchers involved

3) Financial aspects:

- Information on the research institution:
 - Available personnel (not financed by the project funds of the Young Research Group)
 - Available infrastructure
- Information on the funding requested:
 - Concise justifications for the personnel requested (type of requested position(s), job descriptions, extent of employment, and duration of involvement in the project)
 - Concise justifications for non-personnel costs (equipment, materials, travel, and other costs). If funding for equipment is requested, an explanation must be included as to

¹ For instance, the European Commission's [Ethics for Researchers](#) or [The European Code of Conduct for Research Integrity](#) can serve as a guide here.

why this does not constitute part of the basic equipment of the given research environment (see also 2.4.1).

4) Impact:

- Significance of the anticipated progress in the field and, if applicable, implications for other areas of science and research as well as the non-academic sphere

The **list of works cited in the application** (References) must contain the following information: all authors, complete titles, journal, year, and page numbers. For more than 20 authors, only the first 20 authors must be listed (*et. al.*).

2.4. Provisions on eligible project-specific costs

The project-specific costs of the Young Research Group's project shall be calculated appropriately and may not exceed the **programme-specific upper limits** of €1 million for the first four-year funding period and €0.6 million for the second four-year funding period. Inadequate cost calculations constitute a reason for return without review (see also 3.2).

The regulations of the respective research institution (e.g., on personnel and independent contracts for works or services) should be taken into account in preparing the funding request.

2.4.1. Cost categories

The only project-specific costs eligible for funding are those in the following cost categories:

1) Personnel costs

Funding should be requested for the costs of the group leader. In addition to the research work on the proposed project, the group leader may also teach. The teaching workload as part of the position funded by the project may not exceed eight semester hours per week per academic year (winter and summer semester) if the group leader is employed 100%. If the extent of employment is less, the maximum number of semester hours per week permitted shall be reduced pro rata in relation to the extent of employment.

Funding can also be requested for other personnel that are needed — in addition to the available staff — for carrying out the research project of the Young Research Group and are used exclusively in the extent agreed upon for this research project.

The group leader shall be employed on the basis of an employment contract (at least 50% employment) with the applying research institution. The personnel costs of the group leader shall be calculated by the research institution based on the relevant regulations of the research institution (taking into consideration any anticipated salary increases during the duration of the project including any regular increases in salary level). The amount of the projected costs should be explained in the application.

The legal categories of employment available to other persons involved in the Young Research Group are contracts of employment for full-time or part-time employees and marginal employment. A part-time (50%) employment contract for “student assistants,” which equates to 20 hours per week, may be requested for researchers who have not yet completed a master’s or diploma degree programme in the relevant subject area. The maximum extent of employment of doctoral students is 75% (which equates to 30 hours per week).

The [current FWF salary scale](#) contains the salaries that can currently be requested for persons involved in a Young Research Group. The cost calculation should include an annual increase of 4.5% to account for lump-sum compensation of salary increases.

The explanation of requested personnel must include a short job description of the anticipated position and information on the extent of employment.

2) Equipment costs

Equipment may only be requested if it is specifically required for the project.

“Equipment” is considered to include all scientific instruments, system components, self-constructed devices (generally assembled from smaller pieces of equipment and materials), and other tangible fixed assets as well as intangible assets such as licenses, industrial property rights, and licenses derived from such rights. In principle, funding is possible for additional equipment needed for the project that goes beyond the basic infrastructure. It should be noted, however, that the acquisition, partial funding, etc. of expensive equipment or components of such equipment cannot be funded for participations in large research centres outside of Austria and that requesting such funds might lead to the project application being returned without review.

A relevant vendor quote from a company must be enclosed with the application for each piece of equipment whose acquisition cost (including VAT) exceeds €5,000.

3) Material costs

“Materials” encompasses consumables and small pieces of equipment required for the project. The upper limit for low-value assets of the applying research institution should be used to determine whether a piece of equipment falls under material costs or equipment costs.

The calculation of requested funds for project-specific material costs should be justified with reference to the timelines, work plans, and experiment plans. Experience from previous projects should be considered in making the calculation.

4) Travel costs

Funding may be requested for project-specific travel and accommodation, field work, expeditions, etc. The project description must include a detailed travel plan broken down by

project participant. This plan must indicate which persons, for what purpose, when (in which year of the project), for how long, and where they will be travelling, and how much this will cost.

Travel expenses for researchers from other Austrian and foreign research institutions can only be granted in exceptional cases and require detailed justification.

The calculation of travel and accommodation costs should generally be based on the federal regulations governing travel costs (RGV). The current RGV rates for travel abroad can be found in the following [document](#).

For longer stays, a transparent and appropriate budget should be prepared; in general, this budget will be lower than the costs calculated based on RGV rates.

Applicants must not request funding for the presentation of project results at congresses; the costs associated with attending such conferences should be covered by the “general project costs.”

5) Other eligible costs

Funding may be requested for the following “other costs”:

- Costs for coaching and personal development of the group leader (no more than €2,000 per year)
- Independent work contracts for project-specific work and services: a vendor quote must be included with the application for independent work contracts that exceed €10,000 (not including VAT) over the entire term of the project.
- Costs for the preparation, archiving, open access, and re-use of research data in repositories
- Other costs that cannot be included under personnel, equipment, material, or travel costs, for example:
 - Coverage of costs for the use of research facilities which have already been (co-) financed by public funds: in principle, such costs cannot be covered by multiple funding (the calculated rates may not contain any cost items already financed by public funds). Where the costs exceed €10,000 not including VAT over the entire duration of the project, applicants must enclose a vendor quote that includes an explicit declaration that the calculated rates do not contain any cost items already financed by public funds.
 - Costs for any laboratory animals necessary for the project
 - Costs for project-specific work carried out outside the applying research institution (e.g., for analysis work performed elsewhere, interviews, sample collection, preparation of thin slices, etc.); vendor quotes should be included with the application.
 - Costs for the disposal of project-specific hazardous waste

- Fees for test subjects

6) General project costs

The cost calculation should include general project costs in the fixed amount of 5% of the total funding requested. For reasons of simplicity, general project costs refer to all those costs that are generally permitted but cannot be requested individually. These include, for example, costs for conference travel, the publishing of project results in scientific and scholarly publications during the term of the project, the dissemination of research results in broad-scale media, as well as smaller, unforeseen costs necessary for the project. It should be noted that scientific and scholarly publications must comply with the [Open Access Policy](#) of FWF. Please note that no additional requests may be submitted for publication costs.

General project costs should not be understood as the research institution's overhead costs.

7) Overhead costs

Indirect costs shall be covered by a lump-sum for overhead costs in the amount of 25% of the direct costs. No explanation of overhead costs is needed in the project description. It should be noted that overhead costs are included in the maximum funding request of €1.6 million.

2.4.2. Costs of “regional research partners” at participating research institutions

“Regional research partners” are persons who work at a participating research institution and will use funds in the form of personnel, equipment, and/or other costs at this research institution as part of the planned project of the Young Research Group. Funding for costs arising from collaboration with “regional research partners” may be requested **exclusively for research partners at participating research institutions in Upper Austria.**

2.4.3. Costs as part of national and international cooperation arrangements

Cooperation arrangements are all types of research collaboration focused specifically on the project of the Young Research Group. These cooperation arrangements should create added value for the project and must be beneficial to all the parties involved in the project.

In contrast to “regional research partners,” costs arising within the context of a research collaboration with an external national or international research institution are also to be borne by that research institution.

Funds may be requested for project-specific work carried out outside the applying research institution; however, funds may only be transferred to a cooperation partner (also abroad) if they are clearly limited contracts or services (like those specified in 2.4.1 under item 5) and directly necessary for carrying out the Young Research Group project.

2.5. Forms

All required forms must be completed in their entirety:

- For the application to be legally binding, FWF requires a completed **application form** incl. the “affirmation of the applying research institution” with **original signatures** (of the nominated group leader and a person from the research institution authorised to sign) and an **original stamp**. Since double funding is not permitted (see 1.5), any grants related to the topics of this call which have been applied for or received from the State of Upper Austria, FWF, or other funding agencies (e.g., EU, ministries, etc.) must be indicated on the application form.
- The “**Cost breakdown**” form is available as an Excel spreadsheet. The general project costs will be calculated automatically in the appropriate field in the required amount of 5% of the funds requested in the other cost categories. 25% in overhead costs will be added automatically to the total funds requested for direct costs (including the general project costs). The grand total thus obtained (including overhead costs) is the amount that counts for the programme-specific funding limits (see also 1.8).
- The “**Co-authors**” form should name all persons who have made substantial research-related contributions to the conception and writing of the application (co-authors) and include their name, contact details, and a brief description of the nature of their contribution. Where there are no co-authors, this should also be indicated on the form.
- If funding is requested for a regional research partner, FWF requires a completed “**Regional research partner**” form, including the “affirmation of the participating research institution” with **original signatures** (of the regional research partner and a person from the participating research institution authorised to sign) and an **original stamp**.
- If international cooperation arrangements are specified individually in the project description, each of these cooperation arrangements should be listed with the relevant information on the “**International cooperation arrangements**” form. (Conversely, all of the international cooperation arrangements listed on this form should be explained in the project description.)

2.6. Enclosures

The application should be accompanied by the following **vendor quotes**, where applicable:

- Vendor quotes for requested equipment for pieces of equipment whose acquisition cost (including VAT) is € 5,000 or higher (one quote from one company for each piece of equipment)
- Vendor quotes for any relevant times requested under “Other costs” (e.g., use of research facilities)

FWF uses the vendor quotes to verify the cost calculation. They will not be passed on to the reviewers.

Applicants also have the option to enclose a **negative list** of no more than 3 persons who should not be asked to review the application due to possible conflicts of interest (see also 3.3.1) and/or include a **cover letter**. The enclosures mentioned above (including the vendor quotes) can be submitted in German.

It should be noted that any enclosures in addition to the ones mentioned above (such as publications not yet published, etc.) shall not be considered in further stages of the process.

3. Processing and decision on the application

3.1. Formal check and requests for changes

The FWF Office undertakes a formal check of all applications submitted by the end of the application period (see 1.3). The date of the postmark on the submission shall serve as proof of timely submission. It should be noted that no changes can be made after the end of the submission deadline.

Any remediable errors can only be corrected after FWF has prepared and sent a list of formal errors (i.e., request for changes). The applicant has 10 days from when the list is sent to correct the errors.

3.2. Return without review

Funding applications that do not meet the application requirements (see 1.7) shall be returned without review. The same applies for funding applications that cannot be reviewed in their current form because they contain major errors unless these errors are corrected within the 10-day deadline after an appropriate request for changes has been sent.

3.3. International review

All applications that meet the formal and research-related criteria shall be sent for international review. At least 3 reviews are necessary for approval.

The reviewers (generally from outside Austria) are determined by members of an **expert jury** whose expertise covers the topics of the call (see 1.5.1).

3.3.1. Exclusion of reviewers (negative list)

Applicants may enclose a separate document with a list of reviewers who should not be asked to review the application due to possible conflicts of interest (**negative list**). This negative list may include no more than 3 potential reviewers whom the research institution believes may have conflicts of interest. The negative list should be accompanied by a brief

explanation of the grounds for this belief. If the grounds for exclusion are professionally and technically sound, the expert jury will generally fulfil such requests and will exclude those reviewers from the review process.

As a rule, reviewers are considered to be biased if

- they stand to gain professionally, financially, or personally from the approval or rejection of the application (incl. direct competition);
- they have published, collaborated, served on professional boards or other bodies involving frequent or regular meetings, or worked at the same research institution with the nominated group leader in the last five years;
- they have fundamental differences of scientific opinion with the nominated group leader;
- any other close professional or personal ties exist between the reviewers and the nominated group leader which may give rise to the appearance of a conflict of interest in the eyes of uninvolved third parties.

Applicants are explicitly asked not to submit a “positive list” of possible reviewers to the expert jury. Should they do so, these suggestions will be disregarded.

3.4. Funding decisions

It is planned to grant funding to one Young Research Group for each of the topics of the call. The responsible bodies of the State of Upper Austria will decide based on the funding recommendation of the expert jury. The recommendation of the expert jury is based, in turn, on the result of the international review. In addition, the expert jury can invite potential eligible group leaders for interviews if it is necessary for the jury to reach a decision on making a recommendation.

The applying research institution is expected to be notified in writing of the decisions by mid-November 2019.

4. Interim evaluation

An interim evaluation will be undertaken approximately six months before the end of the first four-year funding period. Two conditions must be met in order for the second four-year funding period to be granted:

- An international review will be conducted on the progress of the project and the development of the Young Research Group. The outcome of this review must be outstanding in order for the second funding period to be granted.

- Before the second funding period begins, the group leader of the Young Research Group must either already have a permanent contract of employment in a research position or the research institution must provide the prospect of such permanent employment upon the fulfilment of clearly defined criteria (qualification agreement).

As part of the interim evaluation, the project can be adapted to changes in circumstances, if necessary.

5. Compliance with legal requirements and standards of research integrity

FWF would like to point out that applying research institutions must comply with all legal requirements and safety provisions (e.g., Federal Disabilities Act) that apply for the Young Research Group and its project and obtain all the necessary permits (e.g., from the Ethics Commission, the Commission for Animal Experimentation, the Federal Monuments Authority Austria, or the relevant foreign authorities).

Applying research institutions must also comply with the [guidelines](#) for good scientific practice of the Austrian Agency for Research Integrity (ÖAWI) when submitting the application and carrying out the project.

If there is reason to believe that an applying research institution has failed to comply with these standards, FWF will arrange for the ombudsperson of the respective research institution or the [Austrian Agency for Research Integrity \(ÖAWI\)](#). FWF reserves the right to suspend, in part or in whole, any procedures related to applications or ongoing projects until the investigation has been concluded.

APPENDIX I: Artificial Intelligence (topic description)

Artificial Intelligence (AI) has revolutionised many areas of science and research in recent years and has begun to establish itself in commercial applications on an unprecedented scale. AI gained its current popularity thanks to the pioneering success of a field of machine learning generally known today as deep learning. This refers to large, complex artificial neural networks which are trained using modern learning techniques and enormous quantities of data. When people speak today about the success of artificial intelligence what they actually mean is the contribution of the many potential uses of deep learning. Comparable to the discovery of semiconductor circuit technology, which opened the door to many new fields of research, deep learning is the key to new AI technologies and areas of application. The impact of deep learning on the research community can be seen, for instance, in the fact that attendance at NIPS, the most important international machine learning conference, has doubled in recent years and has been capped at 8,000 attendees. Nowadays, the dominant theme of the top 5 computer science conferences (according to the H5 Index: CVPR, NIPS, ECCV, ICML, ICCV) is deep learning methods.

Deep learning, as the core AI technology, is already one of the largest and most successful fields of research in Computer Science and is continuing to grow very rapidly. The areas of research revolutionised or reinvented by deep learning include the following:

- Computer vision (imaging with CNN)
- Natural language processing (language and text processing with LSTM)
- Deep reinforcement learning
- Generative adversarial networks
- Drug design (drug design with deep networks)
- De-novo design (e.g., in materials sciences with GANs)
- Stochastic approximation theory for large systems
- Explainable AI
- Robotics and autonomous vehicles

Deep learning is used today in many industries such as transport, health and medical engineering, maintenance, heavy industry, telecommunications, marketing, customer service, business, finance, aviation, computer science, education, law, news and publishing, music and painting, as well as games. AI has already established itself as the key technology in the development of driverless cars. In manufacturing and mechanical engineering, AI is not only responsible for obvious uses like intelligent robots but also other important tasks such as predictive maintenance, demand forecasting, and process optimisation. The top priority in the production and high-tech industry is the automisation of processes using AI and deep learning. The main reasons for the use of deep learning are to increase productivity, minimise manual errors, lower costs, and redirect human intervention specifically towards complex, non-repetitive tasks where people are still superior to machines.

Despite these great successes, the full potential of deep learning as the driving force of AI has yet to be exploited and is still waiting to be discovered and used. Deep learning has inspired the current vision of general artificial intelligence (general AI), which refers to a machine comparable to a biological brain that can solve any cognitive task by means of sensory input, previous experiences, learned skills, and “global knowledge.” Research approaches to general AI are derived, for instance, from comparing current deep learning models with observations from biology and neuroscience. Such a general AI could be used in practically every application domain because it can serve as an intelligent and very sophisticated raw model for learning or deducing how to come up with specific solutions to any problem.

APPENDIX II: Medical Engineering (topic description)

Medical Engineering concerns the application of engineering principles to the field of medicine.

The field creates new knowledge primarily through a combination of knowledge from the natural and engineering sciences with medical expertise and the experience of doctors, qualified nurses, and patients in order to improve the diagnosis and treatment of illnesses, the care and rehabilitation of patients, as well as general health care and quality of life.

Besides the development, manufacture, application, and evaluation of medical devices, Medical Engineering also comprises the underlying areas of knowledge, i.e., the fundamentals of biomaterials and their production and processing; theoretical modelling of medical processes; as well as the design of new non-pharmacological diagnostic, therapeutic or theragnostic procedures.

In general, the aim is to use engineering approaches to enable or improve the diagnosis, prevention, monitoring, treatment, or alleviation of diseases, injuries, or handicaps, as well as the investigation, replacement, or modification of the anatomy or of a physiological process.

Research focuses in this field include:

- Medical equipment engineering
- Medical imaging
- Organ replacement (tissue engineering and prosthetics)
- Medical materials as well as their production and processing
- Medical informatics
- Hospital and medical supply technology
- Rehabilitation engineering including prosthetics and orthotics
- Equipment and procedures for the manufacture of medical devices and pharmaceuticals

APPENDIX III: Notes and questions for reviewers

The Young Research Groups programme, administered by FWF on behalf of the State of Upper Austria, actively supports equal opportunities and equal treatment. The review of an application must not put applicants at a disadvantage for non-research-related reasons such as age, gender, etc. For example, the review of applications should not focus on the applicant's actual age, but on the relation between the applicant's previous research achievements and the length of his/her research career. For FWF, equal opportunities also means taking into account any unavoidable delays in applicants' research careers that have led to publication gaps, less time spent abroad, etc. (e.g., due to well-founded, extended qualification periods; time spent raising children; long-term illness; caring for relatives; etc.). In formulating your review, please keep in mind that your comments in Section 1 of the review will be forwarded to the applying research institution in an anonymous way.

We therefore ask you to comment on the following aspects of the application. What are the specific strengths of the project? Does it have weaknesses, and if so, what are they?

Section 1 (to be forwarded to the applying research institution in its entirety)

1) Qualifications of the nominated group leader:

- Previous research achievements (incl. those outside the person's main field of research) and other achievements relevant to the position or the project
- Quality of publications
- International mobility and network
- Research independence
- Potential to develop into a leading researcher in his/her field

2) Quality of the project:

- Scientific/scholarly quality and potential of the proposed project to achieve internationally significant results
- Degree of innovation: breaking new ground in research (for instance, by new methods, new questions, or the inclusion of several disciplines); does the research challenge current understanding or provide pathways to new frontiers?
- Network: quality and benefits of cooperation arrangements (national and international)
- Ethical aspects

3) Added value for the research institution and for the nominated group leader:

- Suitability of the research institution to incorporate the planned Young Research Group and its field of research
- Quality of the career prospects offered by the research institution
- Added value of the person and the planned research for the long-term enhancement of the research institution's profile and its international competitiveness (particularly in

terms of how they complement existing areas of expertise and fields of research at the research institution and contribute to new ones)

4) Overall evaluation of the application:

- Key strengths and weaknesses
- Recommendation for or against funding the Young Research Group: the emphasis should be on the evaluation of the nominated group leader; as a rule of thumb, weighting of 50-60%; but in the case of a recommendation for funding, the application must meet all the criteria from 1) to 3).

Section 2 (confidential remarks to FWF)

Other comments intended solely for FWF