CRUK GUIDE TO ASSESSING GRANT APPLICATIONS

CANCER RESEARCH UK

Cancer Research UK guide to assessing grant applications

1. Our Research Strategy

We want to bring about a world where everybody can lead longer, better lives, free from the fear of cancer. To achieve our goal, we have adopted an ambitious Research Strategy. All Panel and Committee members should be familiar with this document and make funding assessments consistently with it.

2. How our Panels and Committees assess research

To ensure we fund the best quality science and researchers, we operate an excellent peer review process that supports our strategic priorities while remaining responsive to new opportunities. We strive to operate a fair, robust and transparent process and we rely on your expertise and impartiality to advise us and make the best possible funding decisions.

As a Panel or Committee member, we will ask you to recommend only the highest quality research for funding. We know that what that looks like will vary depending on the work being proposed or the area of science. But the key principles we always encourage our members to consider are the **quality of the research**, the likely **translational potential**; and **how the outputs will be shared** to generate more great science and change the research landscape.

Each scheme may have its considerations which we will ask you to consider when judging proposals – for example, fellowship applications will be evaluated differently from applications for infrastructure funding. But broadly speaking, our research assessment criteria are:

- **Scientific excellence** – all applications must have a strong scientific rationale, achievable objectives, as well as appropriate experimental design and statistical analyses, to support the proposed research proposal.

- **Cancer relevance and impact on the field** – value of the proposed work in advancing the fundamental understanding of cancer or improving how cancer is prevented, diagnosed or treated.

- **Excellent team and research environment** – ability of applicants to carry out the proposed research taking into account team skills, expertise and access to the resources and facilities required for the successful fulfilment of the award. The added value of any proposed collaboration and the individual contributions, as well as the steps taken to ensure an effective collaboration, should be considered.

- **Resources requested** – the costs requested in an application should be for the direct costs of the research and be reasonably justified in line with the experimental plans, leveraging existing resources where appropriate.

- **Research outputs and expertise**– the lead applicant and/or team members should have excellent outputs track record and potential to deliver the programme of work proposed.

- **Sharing of outputs consistent with best practice** – the proposal includes a clear process(es) for making the outputs (including knowledge and expertise) accessible to the scientific community and the public, whilst safeguarding intellectual property, the privacy of patients and confidential data.

The criteria outlined above should be considered holistically and should be used to assess both previous work and expertise (to evaluate applicants' skills, experience and outputs) and future work (to evaluate the potential of the programme of work to advance the field).

Table 1 provides a non-exhaustive list of examples of how these research assessment criteria can be met by applicants and provides an idea of what you might see in an application. We emphasise that not all the examples shown might be relevant to the work proposed and we recognise that outputs from previous work and implications of the applicant's future work will vary in different fields. Please note that we have developed a competency-based framework specifically for early career researchers, which outlines the competencies we expect them to demonstrate at particular stages in their career (see also section 4 and Table 2).

SCORING SYSTEM

An Expert Review Panel assesses each application according to the assessment criteria, and agree a qualitative rating based on the definitions below. In a Committee meeting the Designated Speakers on an application will each suggest a numerical strategic score. You will be asked to record your own score – you are free to use the full range of scores available, but should not deviate significantly unless you have voiced an alternative view. Scores are allowed in increments of 0.1. For example, 4.4 is the highest possible forefront score. The scores will then be averaged by the median for each application.

Below is a guide to the scoring system you'll use to assess the work.

Scoring Process:

1. Lead designated speakers will provide their indicative scores at the end of the discussion. All members are then invited to score anonymously.
2. All members are free to score applications as they see fit (i.e. they may deviate as they wish from indicative scores) but should not deviate significantly unless they have voiced an alternative view.
3. An application must receive a **median** score of at least 3 to be considered fundable. This means committee members should not award a score of 3 or more unless they absolutely believe that the application is worth funding.
4. If members want to use the preliminary score this must be reached by consensus.

Rating	Definition	Score
Outstanding	Outstanding work of the highest international calibre that is highly likely to be pioneering and trend-setting. This score will only be applied to exceptional programmes of work whose outputs have the potential for transformative impact on the cancer research field, not because an application was particularly topical or in an under-researched area. Probably no more than 5% of the grants in the CRUK portfolio would achieve this score overall	5
Forefront/Outstanding		4.5
Forefront	Work that is at the forefront internationally and whose outputs are highly likely to have an important and substantial impact on the broader field and potentially beyond	4
Competitive/Forefront		3.5
Competitive	Work that is internationally competitive and whose outputs have the potential to make a significant contribution to the broader field	3

Satisfactory	Work that is of satisfactory quality and whose outputs may make an incremental contribution, but should not be funded by CRUK	2
Not Competitive	Work that may range in quality, but should not be funded by CRUK	1
Unsatisfactory	Poor quality work that should not be funded by CRUK	0
Members can also score an application as preliminary.		
Preliminary	Work where there is significant merit in the idea. However, there are key issues which need to be addressed with additional work for the application to have the potential to be competitive for funding on resubmission.	

3. Assessing applicants' skills and expertise

- When considering the outputs, track record of researchers and their suitability in delivering the proposed research, our Panels and Committees should consider the value and impact of all research outputs, including preprints, training, contribution to consortia and collaborative projects, patents, sharing of key datasets, software, novel assays and reagents, in addition to research publications.[1] These will be demonstrated in:

    a. the 3-5 key research achievements we ask Lead/Joint Lead Applicants to submit (if relevant)[2]
    b. a list of outputs we ask applicants to include alongside their list of publications.

- When considering research publications, our Panels and Committees will recognise that the content of a scientific paper and its influence in the field hold more significance than publication metrics or where it was published. Publications will be listed in the 'list of publications' within the application form. Please note that applicants might provide selected publications relevant to their proposal and not their full list of publications[3].

- When assessing applicants' expertise and the ability of the assembled team to accomplish the proposed research, Panels and Committees will consider all previous relevant activities that demonstrate how the applicants are the best people/team to deliver the project. These might include non-academic activities (e.g. public engagement and outreach, educational activities, entrepreneurial activities).

- Panel and Committee members should take into consideration any career breaks, part-time working and changes in disciplines and make appropriate adjustments when assessing applicants record of outputs, research achievements and career progression. See also section 7 below on considering the impact of COVID-19 in research assessment.

1 Note that CRUK is a signatory to the San Francisco Declaration on Research Assessment (DORA).
2 Note that Lead Applicants, Joint Lead Applicants or Co-Investigators requesting their salary will be asked to complete a Skills and Experience Form.
3 You will notice that application CVs received in our legacy grants management system, eGMS, include the individual's total number of publications, and the number of first and last author publications. This should not be interpreted as a signal that CRUK considers the mere volume of an applicant's publications, and/or author position, as a relevant metric in assessing applications. The information is included simply due to our limited ability to modify that grants management system. We are implementing a new system in 2020. In the meantime, please disregard these figures and consider instead the scientific quality and impact of the outputs listed.

4. Assessing early career applications

As part of our commitment to promoting a positive research culture we have introduced the **CRUK fellowships competency framework**, which outlines the skills and experience applicants should demonstrate at each career stage.

The framework aims to provide:

- ✓ Greater flexibility to applicants so they can apply at the right time for them and their career
- ✓ Increased transparency and clarity in terms of our expectations at each career stage
- ✓ Holistic approach towards assessment of a candidate
- ✓ Consistency with approaches taken by other (major) funders, allowing candidates to compare funding options more easily

How should you use the Competency framework?

- Panel and Committee members are asked to assess the skills and experience each applicant has stated they already have and plan to develop during the tenure of the award in the 'Skills and experience form' and their career level as outlined in their CV.

- Applicants self-categorise themselves based on this framework at the point of submitting their applications. Panel and Committee members are asked to use the framework to assess an applicant's suitability for that funding scheme, to what extent the applicant meets the skills and experience required and whether these are appropriate for (and can be expected at) their career stage.

- Panel and Committee members should use the assessment criteria relevant to a particular funding scheme to make final funding decisions.

- Panel and Committee members are asked to give feedback about applicant's research track record and career trajectory, proposed work, research environment and competencies demonstrated/not (yet) demonstrated.

5. Data Sharing

As outlined in our data sharing and preservation policy, all data and outputs generated as a result of our funding should be considered for sharing and made as widely and freely accessible as possible.

Applicants will provide data sharing plans to ensure that research outputs including data, metadata, samples collected and/or generated have broad utility in research and have as little restriction on their use as possible. Applicants will outline the processes, criteria, and governance in place to ensure that any data generated are made available to the wider research community.

We will ask Panels and Committees to review all data sharing plans as part of the review process. It is important you consider how applicants plan to share data, methods and concepts with the broader scientific community and reflect the importance of reproducibility – for example by making protocols publicly available and/or by reproducing the results of their research systematically. When making data available, applicants should aim to ensure their data are FAIR: findable, accessible, interoperable and reusable[4]. Please note that applicants will be able to cost data management and sharing activities in their grant application and these should reasonable and proportionate in the cost of the overall grant.

4 Wilkinson, Scientific Data https://doi.org/10.1038/sdata.2016.18

In particular, you will be asked to check that applicants have:

- completed a data sharing plan;
- clearly described what types and format of data will be generated, reported and shared;
- provided relevant metadata and information;
- used permanent identifiers for their datasets;
- clearly specified how the data will be shared and if there are any restrictions;
- defined timings for data sharing and have specified plans for long term storage.

6. Equality, diversity, inclusion and avoiding bias

At CRUK, we are committed to Equality, Diversity and Inclusion (EDI) in research. Therefore, the fairness, objectivity and transparency of our funding decisions are important to us. We are removing barriers to ensure a diverse range of people apply and that we fund the best ideas and people regardless of background or circumstance.

We ask that you help us to ensure our decision making is fair and applicants are assessed fairly. As individuals, we all have biases which, while subtle and unconscious in nature, may reduce the objectivity of the decisions we make.

As our Panel and Committee Members, we require you to:

- use the **objective assessment/scoring criteria** and evidence to score;
- think carefully and deliberately about your decisions – there is some evidence that **slowing down decision-making** can mitigate unconscious bias;
- consider the **reasons for your decisions**;
- think about your **own potential bias(es);**
- **be aware of, and account for,** cultural stereotypes or perceptions;
- **monitor** each other for any signs of unconscious bias or assumptions (e.g. stereotyping);
- **engage in discussion of all applications**, even if they lie outside your area of expertise. Contribute on points you think are important, but nobody else has yet made.
- be prepared to challenge **the consensus or other confidently-expressed opinions** to offer **alternative views** to avoid authority bias or group think;
- declare at the meeting if the assessment of the applicant is influenced by any **personal knowledge** of the applicant(s) (above what's in the application or is publicly available).

Links to further relevant videos by The Royal Society:

- Unconscious Bias
- Making Better Decisions in Groups

7. Considering the impact of COVID-19 in research assessment

CRUK would like to reassure the research community that we are acutely aware of the immediate and long-term impacts of COVID-19 on research activities. CRUK is a signatory of the cross-funder statement on COVID-19 in future grant applications, which outlines how funders will look to fairly remember and recognise the impacts of COVID-19 on grant applicants' work in the future.

We have introduced a statement as part of grant applications where applicants are asked to outline how the pandemic has impacted both the individual's and their teams' research activity.

When reviewing applications, panel and committee members are asked to take into consideration any disruptions to research activities resulting from the COVID-19 pandemic and make appropriate adjustments when assessing researchers' record of outputs, research achievements, and career progression.

The scale of disruption caused by the pandemic will vary depending on the individual projects, type of research, and the circumstances of those doing the work.

Bear in mind that the disruption period may have disproportionately affected certain groups of people, for example, researchers:

- with caring responsibilities;
- who were seconded into frontline service in the NHS in response to COVID-19;
- who have been furloughed;
- who are vulnerable due to health conditions and may therefore have additional barriers to returning to work.

Examples of how research assessment criteria can be met					
Scientific excellence	**Cancer relevance and impact on the field**	**Excellent team and research environment**	**Resources requested**	**Research outputs and expertise**	**Sharing of outputs consistently with best practice**
Evidence of reproducibility and robustness Method reporting, method/reagent validation, protocol registration, supplementary data availability, using FAIR data principles, good research design, confirmatory and generalisability studies.	**Important scientific implications** Significant contributions to development of theory and models, contribution to 'school of thought', contribution to existing evidence base.	**Research environment and resources** Team members with relevant expertise and skills to deliver the project. Appropriate infrastructure in place to support the proposed work, such as facilities, technology, equipment, access to patient samples.	**Justification of any resources requested to support the programme of work.** The cost requested should be for the direct cost of the research and reasonably justified in line with the experimental plans, leveraging existing resources where appropriate. E.g. staff time, travel and subsistence consultancy fees, data archiving costs.	**Demonstrating the production of diverse research outputs** Primary research articles, preprints, policy reports, guidelines, datasets and databases, software, reagents, tools, patents.	**Allow reuse of outputs by stakeholders** Outputs should be made available for reuse. Potential for reuse could be demonstrated by patents, licenses, spin-offs; data, samples, method and reagent sharing; citation of datasets by others; uptake by a public health organisation; open source software and tools.
Clear and important scientific questions and methodology The work focuses on addressing important question(s), experimental design and solid methodology clearly addresses how to answer these questions.	**Potential impact on public health or patient benefit** Applications for drug development, implications for treatment, population interventions, clinical applications.	**Engagement with different stakeholders/collaborations** Network/consortium initiatives, partnerships with industry/government, collaboration research agreements with industry, knowledge transfer partnerships, collaboration between businesses and research institutions, multidisciplinary projects, engaging in open innovation with partners beyond academia.	**Consideration of future sustainability where relevant** Plans to support the outputs of the programme of work beyond the funding period e.g. management and dissemination or exploitation routes or platforms; sources of follow-on funding etc.	**Experience in supporting development of core staff/team members** Involvement in relevant skills- and knowledge-based training, supervision and mentoring, teaching experience, supporting capacity building.	**Use of outputs repositories** Clinical data in controlled-access repositories, outputs in discoverable repositories, material/reagent/protocol deposition, use of software/codes repositories.
Potential for innovation Novel approaches, technologies, techniques, methods, applications, significant advances in an area of research, potential to extend the field.	**Potential influence on healthcare practice** Development of guidelines and/or improvement of standards of practice, influencing policies.	**Patient involvement in research where appropriate** Meaningful collaborations or partnerships with patients to plan and design research, define the research question or deliver engagement activities.	**Justification of any costs for data/outputs sharing** Plans to make data/resources/outputs more widely available, where possible, during and beyond the funding period.	**Participation in entrepreneurial and managerial activities** Involvement in sandpits, participation in innovation programme, translational science awards.	**Open access publications and dissemination of research** Publications in open access platforms, other outputs e.g. software also openly accessible, preprint publications, press releases, public engagement, teaching and educational activities.

Table 1. This table provides a non-exhaustive list of examples of how applicants can demonstrate they meet the research assessment criteria, to highlight both their expertise and previous work, and the potential of the proposed work to advance the field. We emphasise that not all the examples shown might be relevant to the work proposed and we recognise that outputs and implications of the applicant's proposed work will vary in different fields. Please note that outputs track record and achievements should be considered in line with career stage including any breaks or change of fields.

Table 2. Fellowships Competency Framework. We have developed a competency-based framework specific for early career researchers, which outlines the competencies we expect them to demonstrate at particular stages in their career (see also section 4).
https://www.cancerresearchuk.org/funding-for-researchers/research-career-development-opportunities/competency-framework-for-fellowships