The ABC's of preparing a successful grant application

Riga Stradins University
Conference ´Vaccines and Vaccination During and Post Covid Pandemics´

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Grants Office, Karolinska Institutet
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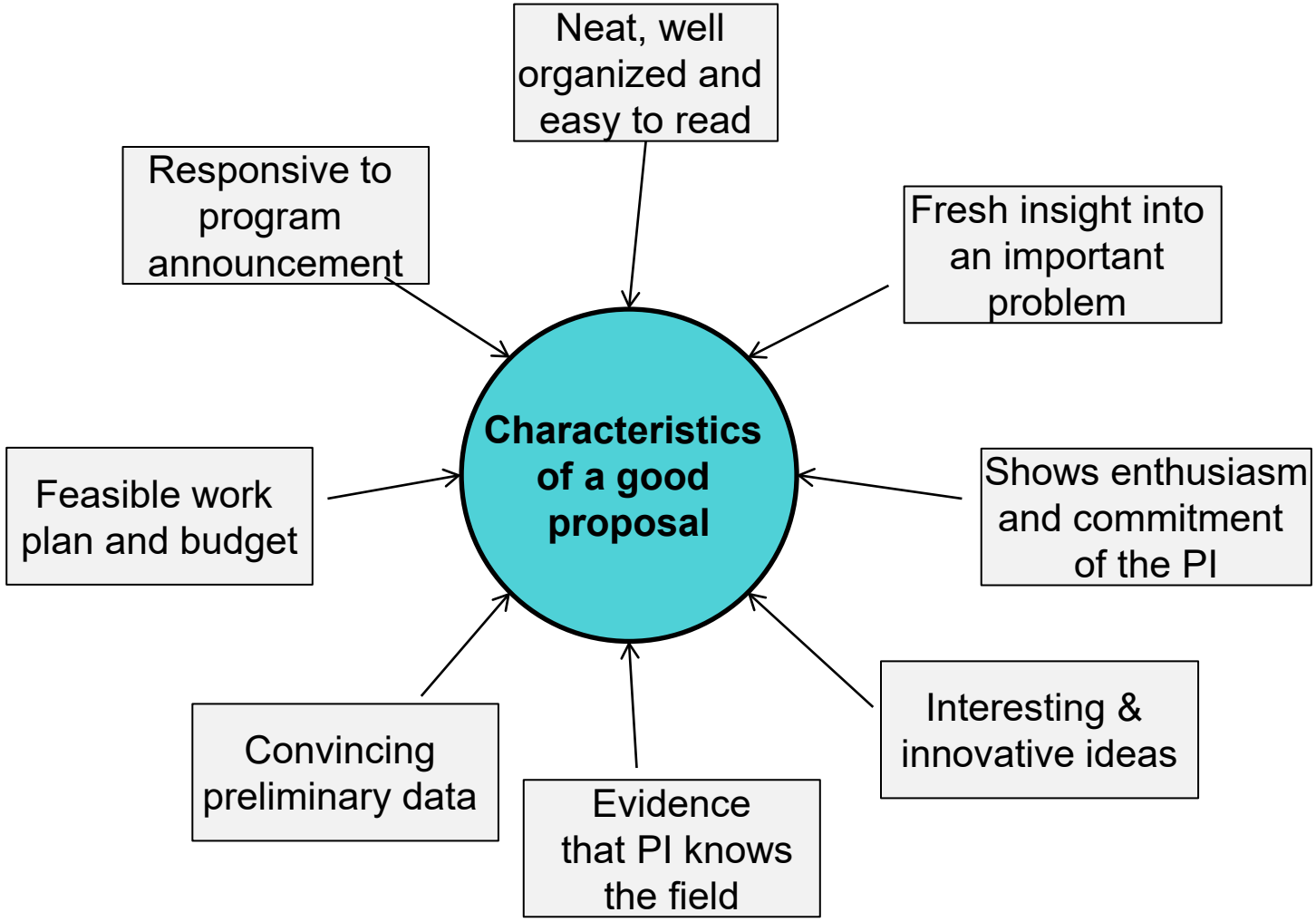
Agenda

- Looking for funding opportunities
- Planning your application
- Structuring and writing your proposal
- A few postdoc fellowships funding agencies

What makes a successful application?

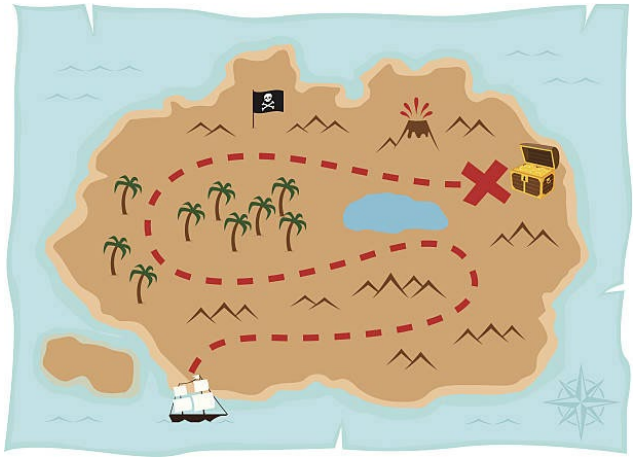


From NIH reviewer survey

Finding funding opportunities

- Important to find the **right** funding opportunity for your project
  - → Search for funding agencies that fund **your** research area/interest

- *How can I find funding opportunities?* – May ways!
  - → Ask more senior colleagues in your field
  - → Think 'outside the box' – search for funding opportunities yourself
  - → Find out what tools are available to help you at your University



Before you start writing

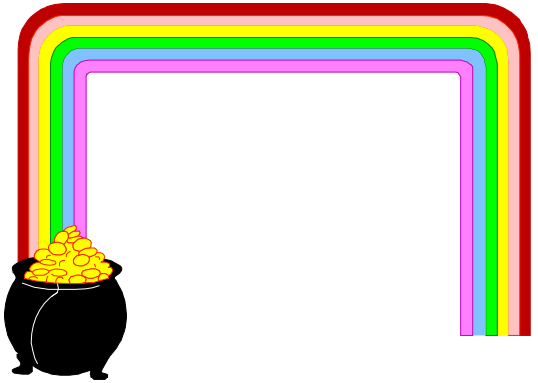
Read the call text (in detail!)

- What does the funding agency WANT to fund?
  - → Does **your research** fit the call?
  - → What and who have they previously funded?
- Are you eligible?
- Does the agency fund overheads or stipends?
- Review Process:
  - → One stage vs Two stage; Internal process; Industry review
  - → The review panel: Specialists, generalists, clinical/non-clinical, board members, industry representatives, foundation family members, patient groups…
- Find the application guidelines… **and follow them!**

The application:

Planning and preparation

A Starting Point



- What are you passionate about?
- What is the problem (and why is it important)?
- How is existing knowledge or practice inadequate?

- Why is your idea better?
- How is it new, unique, different?
- What will it contribute and who will benefit from it?

What makes a proposal competitive?

- Significance
- Originality
- Likelihood of success, contribution to field
- Knowledge and experience
- Experience in methodology
- Clear, logical and focused project plan
- Realistic amount of work in the time frame
- Sufficient detail provided
- Cost-effective

Planning - Leave plenty of time to prepare

Start early – a good proposal needs time and evolution

Most winning proposals have been polished repeatedly

Most people would be better off submitting fewer grants and putting more effort into the ones that they do!

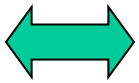
The application:

Structuring and writing

Contrasting perspectives

Academic writing:

Researcher-centered:
Scholarly passion
Past oriented:
Work you have done
Expository:
Explaining to reader
Impersonal:
Objective, dispassionate
Verbosity rewarded:
Few length constraints:
Specialized terminology:
"Insider jargon"



Grant writing:

Sponsor-centered:
Service attitude
Future oriented:
Work you wish to do
Persuasive:
"Sell" the reader
Personal:
Convey excitement
Brevity rewarded:
Strict length constraints
Accessible language:
Broad audience

Thesis, theme, theory:
World of ideas

Project, activities, outcomes:
World of action

Which would you rather read?

Example 2

Development of a grant writing course to improve the quality of applications from Karolinska Institutet

Dr. Knowshowto Writeagrant
Grants Office, Karolinska Institutet

Purpose and Objective

Many grant applications containing excellent science are rejected because they fail to meet the requirements of the specific funding call and effectively communicate the value of the proposed research. This proposal describes the development of a grant writing course describing how various sections of grant applications can be most effectively utilized. This project will improve the quality of grants submitted with Karolinska Institutet (KI) as the host institution.

The proposed course will:

Enable applicants to identify funding agencies specifically tailored to various research areas.
Describe effective communication strategies to improve grant applications.
Reveal ways in which various application sections can be most effectively utilized to communicate the key aspects of the proposal.

Survey of the Field

Scientists rarely receive formal training in how to write successful grant applications. The process of grant writing usually begins in the late PhD or early post-doc stage of a researcher's career and continues until the scientist finally retires and takes up either golf (1) or gardening (2) in retirement. However, despite the extended period of time devoted to grant writing, the rate of success changes only incrementally over the researcher's career duration (3).

Proposal development can be divided into 5 broad stages, as seen in Figure 1. The first two stages relate to the development of the project and conception of the scientific idea, as well as the collection of background data. This aspect of grant writing is outside the scope of this proposal. In this application we will develop a course focused on stages 3-5; finding research funding opportunities, collecting necessary components and writing the application. The current state-of-the-art for stage 3, finding funding opportunity announcements (FoAs), is to use a research funding database, such as Research Professional, and to sign up for the unmissable Grants Office Newsletter and amazing Facebook group, as well as to use the internal KI web to find the Current Calls that are published weekly, or fortnightly.

Collecting necessary components to address specific FoAs is a critical aspect of grant writing. It is important to determine if the applicant has the appropriate background information, preliminary data, collaborators, infrastructure, cofunding, and other factors required to conduct the project before attempting to write a grant application. All components should be in place before writing a grant since the project's feasibility relies heavily on all parts of the project. In addition, once a grant is awarded many funding agencies expect the work to be conducted based on the project and resources described in the submitted application. The applicant should also be aware that some of the larger agencies, such as the NIH or the EU can accept amendments to the project. This is unlikely to be the case for grants from foundations or smaller funding agencies.

Principal Investigators (PIs) frequently underestimate the time required to write a grant application. It has been shown that the actual time spent is approximately three times that originally predicted during stages 3

Example 3

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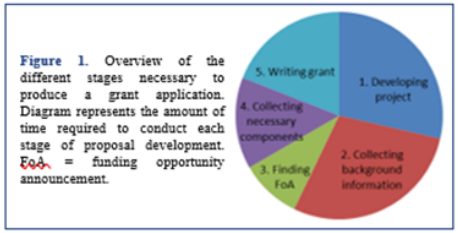

Figure 1. Overview of the different stages necessary to produce a grant application. Diagram represents the amount of time required to conduct each stage of proposal development. FoA = funding opportunity announcement.

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General tips

- **Project Design**
  - → Be sure your project has a coherent direction
  - → Keep related ideas and information together
  - → Don't be overly ambitious – project should be feasible
- **Layout**
  - → Use headings and subheadings, numbered/bulleted lists
  - → Keep to one font
  - → Use boldface or italics to emphasize key words and phrases
  - → Make space for figures
- **Writing**
  - → Use clear, short sentences and paragraphs
  - → Edit, edit, edit – remove unnecessary words and information

Abstract: Last written, first read!

FIRST IMPRESSIONS ARE CRITICAL!

“The abstract must sell the grant”

“If I don’t get interested by the first page, the proposal is lost”

Why? Significance - get attention with the first sentence

What? Objective

How? Methodology

Impact?

The application

- The first sentences need to catch the reader's attention, convey the essence of the proposed research, and make them want to read more
  - → Describe the **overall** goal you aim to achieve within the lifetime of the project, and if a big project, describe the **specific aims**
  - → Be clear and consistent – number the aims and refer to them in later sections (e.g. experimental plan/methodology)

- **Background**: should provide only what is necessary to put the project in context
  - → Reviewers want to know what you WILL do, not what you have done before
  - → What is the unanswered question and your cutting edge

B.1.1 Scientific and technological objectives of the project and state of the art

Problem

WHAT you will do

Your suggestion towards the solution

HOW you will do

Trypansomiasis, a common affliction in Africa, can be lethal when undiagnosed and untreated. We aim to unravel basic processes underlying the entry of African trypanosomes into the human central nervous system. This will lead to markers for effective disease staging and new therapies to eliminate trypanosomes after they have invaded the brain, which causes debilitation and invalidation.

The ***specific objectives*** of the project are to:

1. identify molecules involved in trypanosome neuroinvasion that could be developed into marker-based diagnostic tools for therapeutic decision and cure assessment;
2. investigate the therapeutic potential of molecules that interfere with trypanosome neuroinvasion and/or eliminate trypanosomes from the brain parenchyma;
3. determine clinical, immunological and neurophysiological parameters that correlate to trypanosome neuroinvasion and therapeutic windows for drugs to clear trypanosomes invading the brain;
4. transfer technology and expertise to strengthen the research capacity of African investigators on the biology, clinical staging and new treatments of sleeping sickness, as well as of other neuro-inflammatory diseases.

Methodology & Significance

- Show you can achieve the aims = **feasibility**
  - → Give backup plans when necessary
- Use clear language, no jargon - the reviewer may not be a specialist in your field
- Provide sufficient detail to show your expertise
- Preliminary data(?)

- Ensure this is tailored towards the objective of the research agency
  - → Does the project address an important problem or critical barrier to progress in your field?
  - → How will scientific knowledge and technical capability be improved?
  - → How could the results of this work be implemented in the future? (think about the time scale of your grant)

- Be realistic

Impact

- Do the Call have any expected impacts? Address them!
  - → Scientific, social or economic impact? Or all three?
  - → Short-term and long-term (the influence and effects that the project is expected to generate after its lifetime)

- What is the expected contribution of your study to the field/research question?
  - → what kind of change will your project lead to?

- What is the added value of this project?
  - → Commercial? Non-commercial?

- Qualitative and quantative - Quality of life, Health economics

Summary

- Find the most appropriate funders for the project
- Read the guidelines carefully – and follow them!
- Commit time and effort to the application
  → Most people would be better off submitting fewer grants but putting more effort into the ones that they do!
- Have someone not involved in the application process check the application for clarity of content

Examples of funding agencies to look at in the future

International Postdoc Fellowships – a few examples

- EMBO https://www.embo.org/funding/fellowships-grants-and-career-support/postdoctoral-fellowships/
  → Applications accepted throughout the year

- Human Frontiers Postdoctoral Fellowship https://www.hfsp.org/funding/hfsp-funding/postdoctoral-fellowships
  → Letter of intent in May, closes in September

- Marie Skłodowska Curie Actions Postdoc Fellowships https://marie-sklodowska-curie-actions.ec.europa.eu/actions/postdoctoral-fellowships
  → Opens in April, Closes in September

Thank you!

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