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Over several years he wrote two successful columns in the *Financial Times*. The Nature of Things, was about science – from astrophysics to zoology. Psych Yourself Up was a guide to the different kinds of psychotherapy available in the UK.

His first research grant was a Beit Memorial fellowship for Medical Research, which he obtained in 1978. His research was continuously funded by fellowships, project and programme grants for the next 30 years.

He served on research grant committees for several UK research councils and the Wellcome Trust. The approach to grant writing that is developed in this book is based on his analysis of how grants' committees make funding decisions.

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INTRODUCTION

The Research Funding Toolkit aims to improve the quality of your grant applications and help you obtain funds to support your research.

In order to win funding you need to know three things: the function of research grant applications; how and why grants are awarded; and what helps applications stand out in competition.

The system proposed in this book helps you understand these three things and apply this understanding to your own applications. Each recommended technique exploits the common features of major funding agency decision-making processes and is relevant to all research grant competitions that use expert peer review and grants' committees.

The special characteristics of this decision-making process mean that grant applications need a different approach from other types of academic writing. The following features make the grant-writing task so specific:

- Research grants are speculative investments made in response to project proposals.
 Your applications must persuade decision makers that your project is a sound investment.
- In any research funding competition, project proposals vary widely in topic, approach and subject area. Your applications must encourage grants' committees to see that your projects are the most worthwhile.
- Funding agencies cannot invest in every high-quality project proposal received. You must give decision makers no reason to reject your applications and never exhaust a good idea in one bid.
- Grants' committees work under pressure and deal with a large volume of proposals at each meeting. Your applications must stand out in this environment.

Applicants usually enter research grant competitions by preparing a written submission to a set template. These submissions are assessed by expert referees and, at the end of the evaluation process, a committee of distinguished members ranks the applications in order. Those at the top of the ranking win the available grants.

Those that do not win grants fail for a variety of reasons, including bad luck. It is often hard to tell whether the grants' committee ranked your rejected application highly or not. Even when the agency sends you referees' reports as feedback,

these can be contradictory or confusing. This means that applicants find it hard to learn from their mistakes and do not persevere with strong project ideas.

The emphasis throughout this book is on a pragmatic approach that identifies potential weaknesses and improves your chances. As the advice is rooted in the universal structure of the research funding competition, it remains independent of academic discipline or funding agency.

However, each *Toolkit* user will have different needs, depending on career stage, field of research and prior experience of grant-writing. You can identify your personal starting point by reading the following statements and deciding which ones apply to you. Each chapter contains cross-references to other parts of the book that might interest you.

My research funding success rate is less than 25 per cent.

You may need better pre-submission feedback, help with structuring your project or advice on how to improve your grant-writing skills. *Chapter 3* shows you how to get effective support and advice as you develop projects while *Chapter 11* explains how to elicit constructive feedback on your draft proposals. *Chapters 7* to *10* deal with how to structure and write your applications.

It takes me a long time to generate fundable ideas and/or write my research grant applications.

You may need to find a more efficient way of developing your ideas and translating them into fundable project proposals. *Chapter 4* explains how to plan and time your applications efficiently. Meanwhile, *Chapters 7* and 8 focus on the generic properties of funding agency application templates and how to complete them efficiently and effectively.

I want to start winning larger research grants.

If you have had success with smaller grants, you need to know how to write convincing larger-scale project proposals. *Chapter 1* will help you find out whether your ambitions are realistic and the level of grant you should target. *Chapter 8* helps you understand and complete complex application templates. *Chapter 12* addresses the logistics of creating a convincing and comprehensive project budget while *Chapter 13* provides guidance on preparing large, collaborative project proposals.

I want to make my first research grant application.

You need to understand the principles of research funding competitions and what level to start at. Use *Chapter 1* to find out what sort of scheme is appropriate

for your track record and *Chapter 2* to decide which funding schemes to target. *Chapter 5* explains how funding competitions work and *Chapter 7* provides an overview of funding agency application templates.

I have made a number of applications but have never won a research grant.

You need to find out where you might be going wrong. *Chapter 1* will tell you if you are pitching your applications at the wrong level. Meanwhile, *Chapters 5* and *9* explain how research funding competitions work and what information decision makers need from your application. *Chapter 10* will help you develop an appropriate writing style.

The whole process is so bureaucratic and confusing that I cannot face making applications.

You need to understand the rationale behind these bureaucratic demands and know how to get help in meeting them. *Chapter 3* explains who can help with different aspects of the application process. *Chapters 7* and 8 help you understand the generic properties of application templates. You should also use *Chapters 5* and 6 to understand the funding process from the perspective of the funding agency and your employer.

My research does not seem to fit the format required by funding agency application templates.

You need to understand how to structure your projects in a way that makes funding agencies understand their value and confident of their likely success. In order to create highly-ranked applications from your research ideas, you need to understand how funding agencies work (*Chapter 5*), how to structure a research project convincingly (*Chapter 7*) and the requirements of funding agency templates (*Chapter 8*).

It is my job to help people make research grant applications.

You will find most of this book useful, depending on the types of researcher you support. *Appendix 1* shows how to put the advice in this book into practice at an institutional level. *Chapters 3* and 7 deal with the importance of obtaining support and feedback while preparing research grant applications.

Each chapter contains a selection of examples, tests or Tools. The Tools are practical exercises that you can use to gain insight into your field, identify funding opportunities, plan your application strategy or develop grant-writing techniques in the context of a particular application.

TOOL 1: CV BUILDER

How to present your research achievements

TOOL 2: DEFEND YOUR CORNER

How to predict the perceived weaknesses and misunderstandings that might arise when your proposal is assessed

TOOL 3: THE FUNDING FINDER

How to generate a list of relevant funding opportunities

TOOL 4: THE ISOLATION RISK ASSESSMENT

How to find out if you risk becoming isolated within a wider research community

TOOL 5: WHERE TO TURN FOR HELP

Who can help with each aspect of application development

TOOL 6: EXPANDING YOUR FUNDING SUPPORT NETWORK

How to create links with other researchers and colleagues who can help you

TOOL 7: READING REVIEWS

How to read between the lines of feedback on rejected applications

TOOL 8: APPLICATION TIMELINE

How plan and time your applications in stages

TOOL 9: BUILDING BLOCKS OF AN APPLICATION

Which grant-writing tasks to tackle first

TOOL 10: WHAT THEY WANT TO HEAR

How to find information on the funding agency's evaluation criteria

TOOL 11: WHOSE PROJECT IS THIS?

The role of your institution in managing and taking responsibility for funded research projects

TOOL 12: WHAT DO WE NEED TO KNOW?

How to generate research sub-questions

TOOL 13: PRODUCE YOUR EVIDENCE

How to generate and collate the evidence that supports your four key propositions

TOOL 14: ARGUMENTS AND EVIDENCE: THE 10 STEP PROCESS

A step-by-step guide to constructing an effective application document

TOOL 15: IS IT WORTH IT?

How to check whether the funding agency's eligible research costs suit your project

TOOL 16: INTELLIGENT QUESTIONS ABOUT FINANCE

Good questions to ask while planning your budget

TOOL 17: THE COLLABORATION CHECKLIST

How to tell whether a large collaboration will bring you benefits

TOOL 18: THE COLLABORATIVE PROJECT AGENDA

The key issues you must negotiate with collaboration partners in advance

TOOL 19: PRODUCE YOUR EVIDENCE II (COLLABORATION)

How to produce the additional evidence needed for a large collaborative project

ONE

HOW TO BE A FUNDABLE RESEARCHER

Summary

This chapter helps you decide the best approach to winning grants, based on your research interests and career stage. It also helps you assess how your research might rank in the eyes of referees and grants' committee members who will decide whether your projects deserve funding.

There are two Tools in this chapter. The *CV Builder* Tool helps you identify aspects of your career that strengthen your position as a credible research grant applicant. The *Defend Your Corner* Tool can be used to help achieve perspective on your research field and understand how other academics might rate your work.

Introduction

Chasing research grants can be dispiriting and time consuming. Rejection letters are an almost inevitable part of a research career. With this in mind, you must ensure three things before you start writing research grant applications:

- 1 You are a credible applicant for the grant you request. This means showing that you have the capabilities needed for every component of your proposed project.
- 2 You ask a research question that the funding agency will want to have answered.
- 3 You propose an organised programme of research activities that will answer the question.

The stark truth is that success rates for most grant schemes are often much less than 20 per cent and that writing a research grant application is extremely laborious. There is no point in submitting applications where there is no chance of winning the grant, however well crafted the proposal.

Your first grant-writing task is to find out how attractive you, your research area and your proposed projects are to funding agencies and their decision makers. This process has four elements:

- Are you eligible to apply?
- Is your research field easy to fund?
- Are you a credible applicant for your target funding scheme?
- Will your research topics and methods excite funding agency decision makers?

This chapter takes you through each of these to help you spot challenges that affect your chances of success.

Eligibility requirements

Rules governing whether individuals are permitted to apply for specific schemes vary significantly between funding agencies. Technical problems mean that you can waste time preparing applications that never make it past the agency's secretariat.

If you are a permanent employee of a recognised higher education or research institution and have residency and a home address in the country in which you are employed, you will find one or more funding schemes for which you are eligible. However, schemes vary widely in their eligibility criteria and you must be aware of the following:

Employer	While a higher education or recognised research institution is acceptable to the vast majority of funding agencies, some schemes require the project leader to be from the third sector, health service or industry. If you are an independent researcher you may find your options severely limited and you may need to find an eligible organisation willing to host your project or hire you.
Employment status	Funding agencies generally require applicants to hold a formal contract or affiliation with the host institution that extends beyond the end date of the proposed project.
Residency	Many schemes make residency (or proposed residency) in a particular country or countries a basic requirement for eligibility.
Geography	Some funding agencies and schemes limit applicants to a particular geographical region.
Career stage	This is typically expressed in years from PhD. Be aware that 'early career' can mean anything from one to twelve years from PhD.
Collaboration	Schemes may be confined to research teams of a specified minimum size or may require the involvement of non-academic partners.

The first example in this book illustrates the varying eligibility criteria of different funding agencies.

THE ELIGIBLE RESEARCHER

Here is an example of how eligibility criteria may vary using three funding agencies that support similar fields in the same country. The Arts and Humanities Research Council (AHRC), the British Academy (the UK's national academy for the humanities and social sciences) and the Leverhulme Trust (a charitable trust supporting research and education) are three of the main sources of research grants for humanities' disciplines in the UK.

This table summarises some of the main differences in general eligibility criteria:

Funding Agency	Applicant Residency Requirements	Applicant Employment Status
AHRC	UK residency	Employment (or equivalent) by recognised UK HE institution or research organisation. This must be in place from point of application until three months after proposed end date of grant. Contract researchers whose posts are fully funded by a research grant are ineligible. ¹
Leverhulme Trust	Not specified	Employment by a university, HE, FE institution or registered charity in the UK (and, in some cases, developing countries). The minimum employment contract must be for the duration of the proposed project. Contract researchers and retired academics who retain close links with their institution are both eligible to apply. ²
British Academy	UK residency (for most schemes)	None specified for schemes that do not include overheads (full economic costing). ³

NB. This information is indicative and prospective applicants should always check the current criteria for the relevant scheme before preparing an application. For more detail on how to find this sort of information about your target funding agencies, please refer to Appendix 2.

Check funding agency guidelines carefully before assuming you can apply to a particular scheme. If you do not seem to meet the criteria, check your status directly with the funding agency and your employer before writing your application. You should also check whether you meet your employer's own eligibility criteria.

¹www.ahrc.ac.uk/FundingOpportunities/Documents/Research%20Funding%20Guide.pdf (last accessed 20 October 2011)

²www.leverhulme.ac.uk/funding/RPG/eligibility.cfm (last accessed 20 October 2011)

³www.britac.ac.uk/funding/general-info.cfm (last accessed 20 October 2011)

Your research field

Your key task as an eligible research grant applicant is to convince funding agency decision makers that your question is worth paying to have answered. In brief, all funding agencies want to invest in research projects that ask important questions.

However, what makes a question important varies according to funding agency. Each has its own set of criteria. The agency's website always features these prominently and it is foolish to start writing applications without referring to this information.

The task of choosing which applications best fit these criteria is carried out by a grants' committee, using reports written by expert referees. It is essential to understand some key points about these two groups before you start writing:

- The grants' committee is formed of members whose expertise covers a broad area of the agency's remit, although this may be uneven. There may be no representative of your field or discipline and not all of the members are necessarily academics.
- 'Expert' is a relative term when applied to peer review. A common assumption is that 'expert' peer review means that referees have a complete and detailed understanding of the methods proposed and a boundless enthusiasm for the research question. In practice, they will know something about the field in question but they may not specialise in it.

Consequently, your proposed project may find no natural advocate as it goes through the funding agency assessment process. This is why your applications must create excitement and enthusiasm among non-partisan readers.

To this end, applicants have an advantage if they have a fair idea about possible referees or the likely composition of a grants' committee. Some funding agencies even publish lists of committee members. Others have standing panels with a stable membership. In most cases you can get some information on the type of people likely to review your application or represent it at a committee meeting.

The next example shows how different funding agencies assign disciplines to individual grants' committees.

EXAMPLE 2

INSIDE THE GRANTS' COMMITTEE

This case study illustrates the variety of grants' committee structures and memberships. Using the life sciences as an example, the table below lists some funding agencies that UK-based researchers may target.

Funding Agency	Grants' Committee Structure and Membership		
Wellcome Trust	Nine bio-medical discipline-specific <i>Expert Review Groups</i> with about 10 members each. ⁴		
Leverhulme Trust	The Leverhulme Trust Board consists of up to 10 members, all of whom are, or have been, closely involved in the senior management of Unilever. The board makes the final decision on all applications from any discipline. ⁵		
European Research Council	There are nine <i>Life Science Panels</i> out of 25 panels (across all disciplines). Each is composed of 10–15 distinguished researchers acting as independent experts in the subject area of the panel. ⁶		
BBSRC	Four non-clinical life science <i>Research Committees</i> with a core membership supplemented by a <i>Pool of Experts</i> . About 20 members at each committee meeting. ⁷		

The Wellcome Trust is a global charitable foundation supporting biomedical research and the medical humanities. The Leverhulme Trust is a charitable trust supporting research and education across most disciplines. The European Research Council (ERC) is a European funding body that supports investigator-driven frontier research across all disciplines. The Biotechnology and Biological Sciences Research Council (BBSRC) is the UK research council for the biosciences.

This table is a good example of the varying breadth and levels of expertise offered within individual grants' committees that cover the same area. In this case, your application may come before a lay panel that covers all disciplines (the Leverhulme Trust) or a subject specific panel (e.g. 'animal disease, health and welfare' at the BBSRC). In either case, the likelihood of any committee member's interests exactly matching your area of expertise is low. Moreover, direct collaborators will be expected to declare a conflict of interest and play no part in assessing your application.

For more detail on how to find this information about your target funding agencies, please refer to Appendix 2.

In brief, 'fundable' research fields are those that generate projects that excite decision makers from outside your immediate area. The implication for your research grant applications is that you must think and write about your research in a way that appeals to non-specialists.

⁴www.wellcome.ac.uk/Funding/Biomedical-science/Application-information/Committees/index.htm (last accessed 20 October 2011)

⁵www.leverhulme.ac.uk/about/board.cfm (last accessed 20 October 2011)

⁶http://erc.europa.eu/index.cfm?fuseaction=page.display&topicID=66 (last accessed 20 October 2011)

 $^{^7}$ www.bbsrc.ac.uk/organisation/structures/committees/committees-index.aspx (last accessed 20 October 2011)

Your track record

Every time you make a research funding application, you effectively put a price on your proposed research project and invite the funding agency to pay it. Furthermore, the agency has to pay this price 'up front', before the proposed research project gets underway.

As well as deciding whether the project is value for money, decision makers must be confident that you have the capabilities to carry it out. Unlike academic journals, funding agencies take a calculated and specific financial risk each time they award a research grant. They must also be sure that you will deliver the project you propose.

The most important source of information on your capabilities is your personal track record. Evidence of your previous research performance helps the grants' committee and the referees predict whether you are capable of delivering the proposed programme of research and its outputs. In simple terms, if you have done it before, they will trust you to do it again. If you haven't done it before, then you will have to convince them that you have the ability to do it for the first time.

Track record and funding scheme

The more money you request, the higher the bar will be set as regards your track record. This is partly because a research grant is a speculative investment. Quite simply, the bigger the investment, the more evidence is needed that you can deliver an adequate return. In addition, bigger projects have more components and you need to show that you are competent to carry out each of them.

Consequently, a small travel grant of a few hundred pounds may be within the reach of a researcher with modest publications. In contrast, a five-year programme grant is only accessible to applicants with impressive publications and who have successfully completed substantial funded projects.

Publications are the principal means by which applicants are expected to demonstrate their track record. They are the expected outputs of successful research activity. If your research has not resulted in publications, this may cast doubt on your ability to complete research projects successfully. In this case, a question mark will remain over whether you can deliver a return on the speculative investment you request.

In general, you or your research team should have published on all of the different kinds of research activity and using all of the research techniques used in your proposed research programme.