Successful grant writing

Getting it right

Researcher Academy

Mastering grant writing is essential for early-career researchers. Obtaining funding can significantly advance your research projects and professional development. This guide offers actionable tips and strategies to effectively navigate the grant application process.

Critical stages of grant applications...

...and what to consider along the way

Sparking ideas

- Why is this important, and who will care?
- Who stands to benefit if this project is successful?
- Is this idea unique?
- Why am I the ideal person to undertake this project?
- Can I realistically accomplish what I am proposing?

Find your perfect funding match

- Investigate who funds similar types of research.
- Understand that different agencies support different kinds of projects.
- Explore available funding calls and consider a broad range of options.
- Maintain an open mind and think creatively.

Deep dive research

- Familiarize yourself with the various funding agencies and their specific requirements.
- Contact Program Managers—they are accustomed to receiving inquiries.
- Perform a comprehensive literature review; it can save considerable writing time.
- Don't expect the panel to be experts in your field; clearly contextualize your idea.

Craft the technical blueprint

- What problem are you tackling?
- Why has this problem not been solved before?
- What makes you believe you will succeed? What is your hypothesis?
- Outline your work plan and key milestones.
- Define how you will measure success.

Confirm administrative compliance

- Thoroughly review the call for proposals multiple times.
- Ensure you follow specific formatting and submission guidelines.
- Pay attention to directives like "required" and "must include."
- Prepare your budgets and other documents in advance.
- If you need letters of support, give your contacts ample time.

Submit and let it go

- Allow sufficient time to upload and check your files for readability and errors.
- Be aware that submission systems can be overloaded close to deadlines - plan accordingly.
- After submitting, put the proposal out of your mind until you receive feedback.
- Ensure communications from the agency don't end up in your spam folder.
- If you receive detailed reviews, use them to revise and resubmit your proposal.

Pro tips for successful grant writing

Time keeping: Be realistic about the time and effort required to write the grant. Grant writing is like a chemical reaction - it will consume all available resources to reach completion.

Check your style: Follow the funder's formatting requirements meticulously. If no specific guidelines are provided, avoid fonts smaller than size 11 and ensure ample margins.
Avoid passive voice and tell a story.

Know your audience: Research your funding agency thoroughly. Emphasize aspects relevant to the funder's mission, such as basic science for NSF, healthcare for NIH, or technology for DARPA.

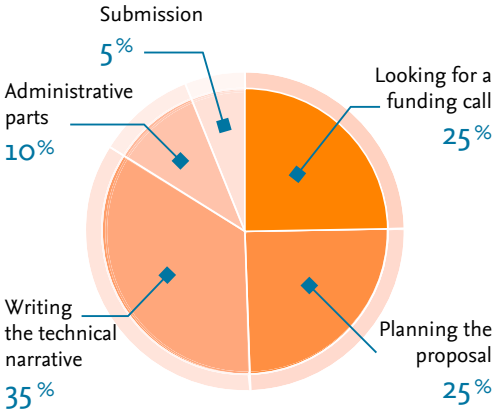
Connect and network: Grant calls provide contact information for a reason. Reach out to the Program Manager, as they often can't respond to all emails. Prepare your questions in advance for a productive conversation.

Recycle but be warned: If you reuse parts of older grants (a common practice), ensure that you update and tailor the content to avoid revealing outdated or irrelevant details.

Size matters: When creating your budget, be frugal yet realistic. The average award size specified in the call is a good indicator of the expected scope of work.

Be original! Propose original ideas that make sense and stand out. Reviewers have seen boilerplate content many times before, so explain anything unusual in a clear and compelling manner.

Time and effort for a typical grant



And remember...

- Assume that any issues are on *your* end, not the reviewer's.
- If a reviewer misinterprets something, it means your explanation wasn't clear enough. Strive for better clarity.
- Put significant effort into revising your work. Remember, reviewers likely put in substantial effort as well.

...and finally – good luck!

How to get published

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What distinguishes a good manuscript from a bad one?

A good manuscript...

...is in scope

Investigate all candidate journals and find out about the:

- Aims and scope
- Types of articles accepted
- Readership
- Current hot topics by going through the abstracts of recent publications

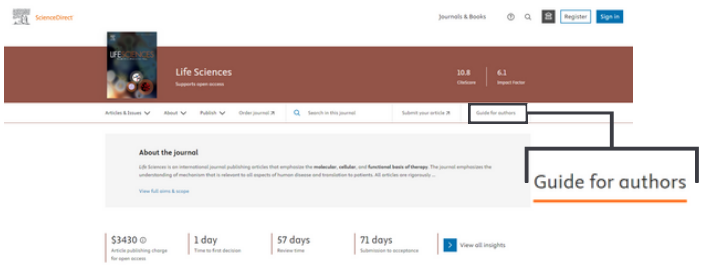
...adheres to publication ethics

- Avoid plagiarism of others' work
- Avoid multiple publication of the same work; never submit your manuscript to more than one journal at a time
- Cite and acknowledge others' work appropriately
- Ensure all co-authors meet authorship criteria

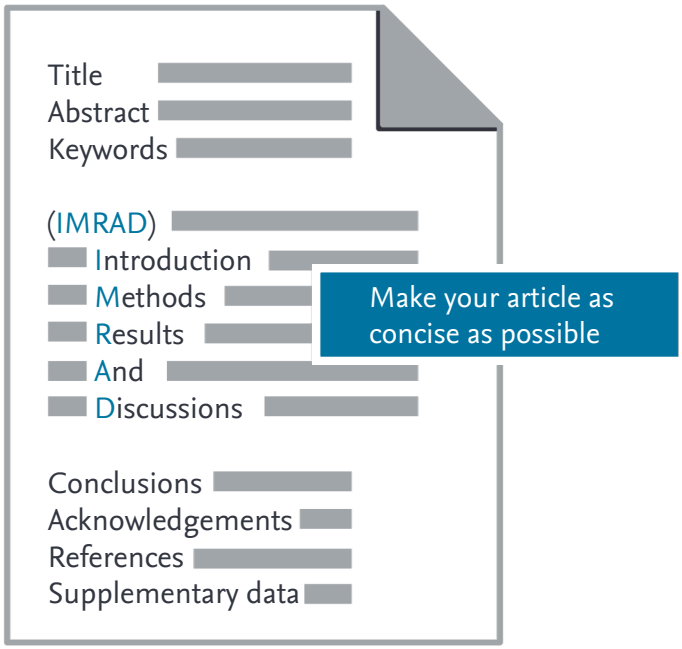
...follows the guide for authors

Stick to the guide for authors to ensure you comply with all journal policies and give yourself the best chance for success

You can find the guide for authors on the journal's homepage on sciencedirect.com.



Article structure



Illustrations

Illustrations are critical, because...

- Figures and tables are the most efficient way to present results
- Results are the driving force of the publication

Make sure that figures are in compliance with guidelines.

- Captions and legends must be detailed enough to make figures and tables self explanatory
- Do not duplicate results described in text or other illustrations

Find out how to format and submit your artwork here.

Use proper manuscript language

Publishers do not correct language; this is the author's responsibility

- Ask a native speaker or use a language editing service to improve your paper before you submit it.
- Poor English makes it difficult for the editor and reviewers to understand your work and might lead to rejection of your paper.
- Be alert to common errors:
  - Sentence construction
  - Incorrect tenses
  - Inaccurate grammar
  - Mixing languages
- English language should be used throughout the manuscript, including figures, charts, graphs and photos.

Are you ready to submit?

Roughly 35% of all submitted manuscripts are rejected before peer review. Make sure you revise before you submit.

- Do your findings advance understanding in a specific research field?
- Is your work of interest to the journal's audience?
- Is your manuscript structured properly?
- Are your conclusions justified by your results?
- Are your references international/accessible enough?
- Did you format your figures and tables properly?
- Did you correct all grammatical and spelling mistakes?
- Have you followed the guide for authors?

Make sure you are equipped!

Research and publishing ethics

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Authorship, plagiarism and responsibilities

What does it mean to be an author?

> An "author" is generally considered to be someone who has made substantive intellectual contributions to a published study.

Remember

- Being an author comes with credit but also responsibility
- Decisions about who will be an author and the order of authors should be made before starting to write up the paper

Types of authorship

- First author: the person who conducts or supervises the data collection, analysis, presentation and interpretation of the results and also puts together the paper for submission
- Co-author: makes intellectual contributions to the data analysis and contributes to data interpretation, reviews each paper draft, must be able to present the results, defend the implications and discuss study limitations

Avoid ghost authorship: excluding authors who participated in the work
Avoid scientific writers and gift authors: including authors who did not contribute to the work

What happens when there is a dispute?

- It must be resolved by authors
- Editors cannot adjudicate or act as judge
- It delays publication as the editor has to get agreement from all authors about any changes
- After publication it can be published as a correction but needs agreement from all authors with justification

Key author responsibilities

Authorship:

- Report only real, unfabricated data
- Originality
- Declare any conflicts of interest
- Submit to one journal at a time

Avoid:

- Fabrication: making up research data
- Falsification: manipulation of existing research data
- Plagiarism: previous work taken and passed off as one's own

What is plagiarism and how is it detected?

> Plagiarism is the appropriation of another person's ideas, processes, or words without giving appropriate credit, including those obtained through confidential review of others' research proposals and manuscripts.
>
> Federal Office of Science and Technology Policy, 1999

- CrossCheck is a huge database of 30+ million articles, from 50,000+ journals, from 400+ publishers.
- The software alerts editors to any similarities between your article and the huge database of published articles.
- Many Elsevier journals now check every submitted article using CrossCheck.

crossref check
Powered by iThenticate deposited

Work that can be plagiarised includes...

Words (language)	Computer programs	Lectures
Ideas	Diagrams	Printed material
Findings	Graphs	Electronic material
Writings	Illustrations	Any other original work
Graphic representations	Information	

Correct citation is key

Declare conflicts of interest

Conflicts of interest can take many forms:

- Direct financial: employment, stock ownership, grants, patents
- Indirect financial: honoraria, consultancies, mutual fund ownership, expert testimony
- Career and intellectual: promotion, direct rival institutional
- Personal belief

The consequences

Consequences vary depending on the misconduct and the journal, institutions, and funding bodies involved.

Authors could:

- Have articles retracted (carrying a note why they were retracted, e.g. for plagiarism)
- Have letters of concern or reprimand written to them
- Institutes and funding bodies could carry out disciplinary action

How to review manuscripts

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Peer review, your role and responsibilities

Peer review

...is critical because it

- Improves the quality of the published paper
- Ensures previous work is acknowledged
- Determines the importance of findings
- Detects plagiarism and other ethical breaches
- Plays a central role in academic career development

...will benefit you because it

- Keeps you up to date with the latest research
- Stimulates your own research
- Helps you build an association with journals and editors
- Is imperative for academic career development

...Before you review

- Does the article match your area of expertise?
- Do you have competing interests?
- Do you have time? Make sure you can meet the deadline
- Familiarize yourself with the peer review process and get certified on Researcher Academy:

CERTIFIED PEER REVIEWER COURSE

Get a thorough grounding in the principles and practice of refereeing.

Editors' view: what makes a good reviewer?

- Promptly responds to the invitation to review
- Submits the report on time
- Provides a thorough and comprehensive report
- Demonstrates objectivity
- Provides a clear recommendation to the editor

Your ultimate checklist for reviewing a paper

First impressions

- ☐ Is the research original, novel and important to the field?
- ☐ Has the appropriate structure and language been used?

Abstract

- ☐ Is it really a summary?
- ☐ Does it include key findings?
- ☐ Is it an appropriate length?

Introduction

- ☐ Is it effective, clear and well organized?
- ☐ Does it really introduce and put into perspective what follows?
- ☐ Suggest changes in organization and point authors to appropriate citations.
- ☐ Be specific – don't write "the authors have done a poor job"

Methodology

- ☐ Can a colleague reproduce the experiments and get the same outcomes?
- ☐ Did the authors include proper references to previously published methodology?
- ☐ Is the description of new methodology accurate?
- ☐ Could or should the authors have included supplementary material?

Results and discussion

- ☐ Suggest improvements in the way data is shown
- ☐ Comment on general logic and on justification of interpretations and conclusions
- ☐ Comment on the number of figures, tables and schemes
- ☐ Write concisely and precisely which changes you recommend
- ☐ List separately suggested changes in style, grammar and other small changes
- ☐ Suggest additional experiments or analyses
- ☐ Make clear the need for changes/updates
- ☐ Ask yourself whether the manuscript should be published at all

Conclusion

- ☐ Comment on importance, validity and generality of conclusions
- ☐ Request toning down of unjustified claims and generalizations
- ☐ Request removal of redundancies and summaries
- ☐ The abstract, not the conclusion, summarizes the study

References, tables and figures

- ☐ Check accuracy, number and citation appropriateness
- ☐ Comment on any footnotes
- ☐ Comment on figures, their quality and readability
- ☐ Assess completeness of legends, headers and axis labels
- ☐ Check presentation consistency
- ☐ Comment on need for color in figures

Comments to the editor

1. Comment on novelty and significance
2. Recommend whether the manuscript is suitable for publication
3. Confidential comments will not be disclosed to the author(s)