Writing your ARC 100-word summary

All Australian Research Council (ARC) grants require you to provide a 100-word (or more precisely, 750 characters including spaces) summary of your grant. In addition to being a key element in the ARC assessment process, the summary is what the Minister for Education will see when they sign off on awards and what the public sees when the grant is announced on the ARC Funding Announcements web page.

1. What's the summary used for?

The summary is important because it lends itself to whom will be chosen to assess your grant. The Research Management System (RMS) generates a word cloud of your application based on the:

- Application summary
- Application title
- Benefit and Impact Statement/National Interest
- FoR codes
- SEO codes

The RMS also generates Assessor suggestions based on Assessor codes, expertise and history based on system profiles. This information then allows the ARC Executive Directors and College of Experts/Selection Advisory Committee (SAC) members to marry up applications with assessors. So, if your summary doesn't contain key words consistent with the FoR codes you nominate, your grant might end up on the desk of assessors in research fields you weren't expecting or hoping for. (Similarly, if you are an assessor who keeps getting applications outside your comfort zone, you may want to update your RMS profile!)

One last thing to note: make sure that the Minister can understand the benefit of your work from the summary as they have the final say in which applications will be funded…

2. What does a good summary look like?

A good tip before you start writing is to go to the ARC data portal and plug in your Primary Field of Research code and the scheme you are applying for and start reading other people's summaries. You will quickly get a good idea of how people in your discipline communicate their science. Of course, just because your peers got their grant awarded, doesn't mean their summaries were well written for the minister or a lay audience.

A good way to test whether a summary is telling a coherent story is to see if it clearly answers, in lay terms, the following questions:

1. What's the aim of the project?
2. Why is the project needed?
3. What will be the governments return on investment if the project is funded?

Let's look at three examples and see how well they address these criteria for the minister/lay audience. These grants were all funded, at a time before the ARC was prescriptive about the summary and when medical research was less strictly guarded against.

EXAMPLE 1 This project aims to develop rapid, scalable light-driven continuous flow processing techniques that allow the production of value-added synthetic polymers that cannot be achieved by existing technologies. The project will take advantage of the spatio-temporal control of the light mediated polymerisation with flow process to achieve control over the primary structure, the sequential arrangement of monomer units in a polymer chain and the molecular weight distribution. The project will result in the preparation of functional polymers containing a specific arrangement of monomers in the polymer chain and a precise distribution of polymer chains. The development of such process will result in the development of advanced materials.	**Aim:** It seems that a flow processing technique for adding some sort of value to polymers will be achieved. **Why:** Apparently value-added synthetic polymers cannot be achieved by existing technologies - but there are no real clues as to why this might be important to address. **Return on investment:** It appears the government is providing funding for a development process which will lead to the development of advanced materials?
EXAMPLE 2 Oxidation of peptides and proteins by a wide range of reactive radicals and other oxidants, in the presence of oxygen, generates protein peroxides. These species are now recognised to be key intermediates in both the deterioration of foods (e.g. development of rancidity and off-flavours, changes in colour and texture) and a number of human diseases, including cancer, heart disease and ageing. How these peroxides cause biological perturbations is poorly understood. The proposed studies will provide valuable information as to how these peroxides affect cellular metabolism and provide key leads as to strategies which may prevent such damage.	**Aim:** to understand how peroxides alter biological function. **Why:** because protein peroxides are implicated in diseases and aging. **Return on investment:** Valuable information that could lead to prevention strategies?
EXAMPLE 3 This project aims to develop smart water network systems and techniques for continuous monitoring and early detection of structural failure in water distribution systems. Water assets are critical infrastructure, and they consist of a network of buried pipes that are old and deteriorating, with an annual maintenance overhead exceeding $1billion per year in Australia. This project is expected to deliver next-generation smart water technology that enables continuous assessment of the actual performance of water pipe networks, guide “just in time” pipe replacement and optimise operations. This technology will assist asset managers to make informed decisions, strategically prioritise investment and extend asset life.	**Aim:** to build a monitoring system to detect structural problems in water infrastructure. **Why:** The cost of annual maintenance on ageing critical infrastructure is prohibitive. **Return on investment:** a ‘smart’ solution that provides information which will allow companies and government the ability to better invest in and extend water infrastructure

3. Writing your summary

The ARC is prescriptive about how the summary is written so make sure you read the Instructions to Applicants document carefully before you start writing. In 2020, ARC schemes required you to structure your summary as follows:

- An **Introductory statement** - The aim of the project is to address/investigate/review …; by using/advancing/conceptualising …
- Some **Context**: For example: This research expects to generate new knowledge in the area of … using an innovative approach/using interdisciplinary approaches/using new techniques …
- An **Outcome statement**: For example: Expected outcomes of this project include… /enhanced capacity to build institutional/disciplinary collaborations/theory development/refined methods/improved techniques…
- A **Benefit statement**: For example: This should provide significant commercial/societal/public benefits, such as …

The ARC is also quite insistent that you write this summary in plain English, avoiding jargon, quotation marks and acronyms. They also discourage the use of first-person language – like 'we will' and 'I aim to.'

Your first draft of the summary should follow this format, to make sure you tick all the ARC boxes. Subsequent drafts can then be finessed and crafted so that your sentences engage your audience, provide a clear narrative and contain key words relevant to your proposal.

4. Final checks

The next step is to ask someone outside of your field to read it and see if they can describe what the aim of the project is, why the research needs to be done and why it is of benefit. If you pass this test you can finally move to the last hurdle of putting it into a word cloud like MonkeyLearn's WordCloud Generator, or Wordle and see if the key words reflects the FoR and SEO codes you have chosen. It's very easy to leave out the key words in a summary.

Just when you thought it was all over, put the summary away, write the rest of the grant and then come back to it. Does is still reflect your project? Great - time to submit!