

## ***Guidelines for Writing WRC Research Proposals***

### ***Some general hints***

1. **Understand what the WRC wants.** Know the WRC's mandate and read the latest Corporate Plan to understand what the current research priorities are. Get this from the website, [www.wrc.org.za/Pages/KH\\_Strategy.aspx?dt=15&ms=63](http://www.wrc.org.za/Pages/KH_Strategy.aspx?dt=15&ms=63);  
The Call for Proposals will tell you which Thrusts and Programmes have funding allocated to them - if a Thrust has a budget of zero and/or does not appear in the Call, then there are no available funds to apply for and hence all proposals to that particular Thrust will be rejected.
2. **Put yourself in the shoes of a proposal reviewer.** Make it easy for them. If you can, make them enjoy your proposal!
3. **Use both technical and simple language.** If you are proposing highly specialised technical work, consider using accurate technical language complemented with simpler explanatory language. Your points will be better understood by all.

### ***Proposal Details***

<b>KSA</b>	These identifications should each match one available choice in the WRC's lists of KSAs and Thrusts.
<b>Thrust</b>	
<b>Title</b>	The title of the project, specified by you, the proposer.
<b>Programme</b>	This should also match one from the WRC's list of Programmes.
<b>Proposer</b>	You - put your name here.
<b>Start Date</b>	May not be earlier than 1 <sup>st</sup> April next year and not later than 31 <sup>st</sup> March the calendar year after that.
<b>End Date</b>	The financial year ends on March 31 <sup>st</sup> , but the contract does not have to. However, avoiding March 31 <sup>st</sup> avoids the end-of-financial year rush meaning that your final report can be processed by the WRC more quickly.
<b>Proposal Number</b>	Leave empty (this will be generated by the WRC).

### ***Lead Organisation***

<b>Name</b>	The project leader's information goes in this box.
<b>Department / Division</b>	
<b>Contribution</b>	State what the project leader will give to the project.
<b>City/Town</b>	
<b>etc.</b>	

### ***Lead Organisation Contract Signatory***

<b>Title</b>	This is the legal signatory of the organisation, and is very rarely the proposer or project leader. It may be your managing director, your registrar, dean, DVC, or another member of senior management. Find out who signs contracts at your organisation and put their information in here, because having incorrect details in this section can delay project start-up by months.
<b>Initials</b>	
<b>First name</b>	
<b>Last Name</b>	
<b>etc.</b>	

## Collaborating Organisations

<b>Name</b>	Fill in one of these boxes for each collaborating organisation on your project. Ask the collaborators first (of course) and agree with them on the contributions they will make to the project.
<b>Department</b>	
<b>Contribution</b>	
<b>Etc.</b>	

## Researchers

<b>Organisation</b>	Again, fill in one of these boxes per researcher. Under 'Role' you would describe each person as a <b>principal researcher</b> , or a <b>researcher</b> , or a <b>research assistant</b> , depending on their contribution to the work. The 'Qualification' is the highest academic qualification they have <u>already</u> obtained.
<b>Role</b>	
<b>Title</b>	
<b>Initials</b>	
<b>Last Name</b>	Identify the individual(s) you will be working with and specify them here (just a name of a department or organisation is insufficient, you must name the research team members).
<b>etc.</b>	

## Motivation and Contextualisation

Enable the reviewers to understand the nature and purpose of the investigation. Give enough background for them to grasp the current state of knowledge in the field, define the knowledge gap that you wish to fill in, and clarify why they should care about it. The proposal is the only communication you will have with the reviewers, so make sure the whole message is in here.

1. **Get the reviewer's attention.** Try to capture the very essence of the problem or your idea or plan in the very first sentence. Express it in lively attention-grabbing language.
2. **Give an informative background.** Give sufficient background to your intended work so that the reviewer understands (1) what has already been done (by you and others in the peer-reviewed scientific literature), (2) what the gaps are, (3) why anyone should care about these gaps, and (4) why what you are proposing addresses these gaps. Position your study in the wider context of the field.
3. **Link the gap(s) to an overall aim of the project.**
4. **Explain the innovation.** If your idea is a 'great new idea', don't assume the reviewers will figure it out themselves (though some quickly do). Explain clearly and concisely why you think it is innovative.

Read the WRC's latest corporate plan (available at [www.wrc.org.za/Pages/KH\\_Strategy.aspx?dt=15&ms=63](http://www.wrc.org.za/Pages/KH_Strategy.aspx?dt=15&ms=63;);) - the sections on strategic emphases and strategic objectives - and in it identify which branches of the WRC Knowledge Tree, or which Lighthouses your proposal will contribute to.

## Outcomes and impacts

For each WRC-funded project, we ask the following questions:

- What are the likely outcomes of this research?
- Who will benefit from this research?
- How will they benefit from this research?
- How can we involve potential beneficiaries in this research?
- How will we know if it has made a difference?

**Identify potential positive impacts.** You don't have to have an impact on all four areas below. Just be honest. There are four general areas in which you might expect to have an impact:

**Society:** If the project is applied in nature then describe what effect its application could have on civil society.

NB: Also read the *Guidelines for Proposal Preparation and Submission* provided by the WRC

**Economy:** New water or wastewater treatment methods that improve industrial competitiveness would be an example.

**Health:** Any positive impacts on public and/or environmental and/or ecosystem health could be included here.

**Environment:** Improved environmental protection, pollution prevention or remediation of existing pollution could be included here.

**Don't make excessively grand claims.** Be realistic about the potential usefulness of your work. You must mention potential future applications but perhaps note what other work might be necessary to achieve them in practice.

## Aims

1. **Aims are what you want to achieve** by performing the tasks (specified under *Methodology*) and producing your specified deliverables. They are usually *not* the tasks themselves. For example, if one task is "sample collection and pollutant analysis" the aim will *not* be "sample collection and pollutant analysis". It could be, for example, "to obtain representative pollutant concentrations in the water resource".
2. **Break down the overall aim** (identified in *Knowledge Contributions* above) into bite-sized aims, each of which links to a research question, task, phase or deliverable.
3. **Don't have too many aims.** Limit them to those which, when combined, allow you to achieve your overall aim.

No.	Aim
1	
2	
etc.	

## Methodology

1. **Plan very carefully.** Present a logical sequence of tasks (i.e. a work plan) that you are confident will take you towards each of your deliverables and aims within the stated budget and time frame.
2. **Relate tasks to deliverables.** This allows the reviewer to see the connection between what you intend to do and what you promise to deliver.
3. **Relate deliverables to aims.** It sometimes helps (both you and the reviewer) to explicitly state how your deliverables will help achieve the stated aims.
4. **Explain your methods.** Use the prior learning described under *Motivation* to justify your methods. Explain how they will address the identified knowledge shortcomings. Explain how each aspect will answer the specific research questions. Remember you will be specifying a budget for each deliverable so make sure the necessity of each step is clear.
5. **Detail new procedures but just reference standard ones.** In case the reviewer is not familiar with the standard method, give enough information for them to find the detail – don't reproduce the whole standard method in the proposal. Cite it here and provide references in the last section of the proposal.
6. **Don't use unexplained jargon and mathematical equations.** It is important that the reviewer understands *everything* you say. Explain the methods as you would to someone who is versed in the field of your proposal and has technical expertise, but is not necessarily a specialist in it.
7. **Make a literature survey relevant.** If there is one, ensure that it will provide useful information (1) to the envisaged target audience and (2) to support the other project tasks.
8. **Plan questionnaires very carefully.** Sending out questionnaires to busy people to obtain information seldom produces results so if your methods include one, assume a 33% return rate. If a questionnaire is *really* necessary, consider capturing the responses using one-on-one interviews (even by phone or Skype). Remember that a serious limitation of a questionnaire is that you don't get any information

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other than that which you asked for. Give very careful thought to each question. Minimise the number of questions. Know *exactly* how you will use the responses. If necessary, get a statistician to help choose and phrase the questions.

9. **Consider the longer-term implications of any software development.** First, remember that an important law of software development is that it always takes twice as long to complete as originally planned. Consider issues such as who will use the software, how they will access it and who will maintain it and update it (and pay for it) after the project ends.
10. **Be realistic about organising workshops.** Will you really be able to get all or most of the right people in one place at one time? Who are the 'right' people? How are you going to convince them to come to your workshop? Do the target people really need to be together (i.e. do you need them to interact and stimulate each other)? Could you achieve your workshop objectives by having multiple smaller interactions with selected people?
11. **Don't underestimate the difficulties of achieving organisational uptake.** Don't underestimate how difficult and time-consuming it is to get your pet product or process taken up and used effectively in target organisations. If appropriate, consider appointing an appropriate project team member to tackle these organisational issues as a separate task. Consider real 'action research'. Get buy-in at an early stage. Keep them interested and involved. Understand the organisational context. Understand exactly how your product will fit into their standard procedures.
12. **Final report = sum of deliverables.** Sometimes it is possible and appropriate to structure the deliverables so that each becomes a chapter of the final report. This conveniently spreads the report writing over the duration of the project.

## Deliverables

No.	Title	Description	Date	Amount (R )
1	<i>Example:</i> Baseline water quality survey	Report of an investigation of the present Pb, Cu and Cr concentrations in four open estuaries in the Western Cape.	Day / Month / Year This is the deadline to which you will be contractually bound, so be conservative - add a month to your estimates. It's okay to submit and be paid earlier than this date. It is NOT okay to be late.	The monetary value of the report you will submit.
2				
etc.				

1. **Use short titles and longer descriptions.** Keep your deliverable titles short but informative. Use the descriptions (one short sentence) to describe the contents in more detail.
2. **Specify deliverables that are actually *deliverable* to the WRC.** Ideally, deliverables should be reports. If a task comprises a workshop, deliver for example, "Report on stakeholder workshop proceedings" and describe the purpose of the workshop in the description. Deliverables should *not* be project milestones like "Samples collected".
3. **Link deliverables to tasks.** If appropriate, try to link each deliverable to a major task in your work plan (which is described in your methodology).
4. **Balance cash flow with amount of report writing.** Invoices are linked to deliverables and are paid on approval of the deliverable. Choose a frequency of deliverables that (1) ensures you have an adequate cash flow and (2) limits the amount of report writing to that necessary to (a) convey progress to the WRC Research Manager and (b) spread your report writing sensibly over the lifetime of the project.

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Two or three deliverables per year is normally adequate; four is the maximum the WRC will normally allow.

5. **Remember that the WRC does not pay for part deliverables.** You may not submit part invoices if you have only done part of the work. You can only claim the whole amount for a deliverable in one go, once all the work promised for that deliverable has been completed.

## Products

Title/Name	Target group	Application
These could be guidelines, new protocols or software, and so on.	Who will use each product?	What would they use the product(s) for?

## Budget

1. **Pitch the budget realistically.** You are not bidding for the project. The funders are looking for good *value*, not for the cheapest price tag, and they don't want to receive a report at the end which omits some of the work because you ran out of money.
2. **Include the detail.** The cost of research is high and provided you have justified each item, don't be tempted to artificially decrease the total budget once you've added it all up and had a fright.
3. **Don't try to use public money to buy yourself a shiny new SUV.** For example, if you are appointed to a salaried position, you do not need to claim hundreds of billable hours from public funds. (Reviewers see this, and the other extreme in which the budget is unrealistically low, and usually reject both as candidates to receive funding.)

### a) Human Resource Costs

Name	Financial year	Rate (R/day)	Days/year	Amount (R )
The person who has already been identified as a researcher or collaborator above.		Not more than R3850 per day	No. days the person will work on the project	Rate × days

### b) Capital expenses

Here list equipment you plan to buy for the project, and in which year you will buy it.

### c) Running Expenses

The five categories of running expenses are listed here - these are the categories available. Items which do not fall into any one of the five must be specified under Minor expenses instead. Have a line item per category that applies for each year.

Running Expense Type	Financial Year	Amount (R)
Casual labour	2016/17	
Subsistence and Travel	2016/17	
General maintenance	2016/17	
Meetings/Workshops	2016/17	
Contingencies	2016/17	As a general guide, contingencies can be up to 10% of the total budget each year.
Casual labour	2017/18	
Subsistence and Travel	2017/18	
Etc.		

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#### **d) Minor expenses**

Running Expense Type	Financial Year	Amount (R)
Itemise this part of the budget as far as you possibly can. Do not use catch-all entries like “Lab items” but instead be as specific as you can about what you envisage needing for small equipment, repairs, routine consumables like gloves, cleaning materials, standard chemicals. Differentiate once-off items like instrument servicing.		

#### **e) Dissemination / Uptake Activity expenses**

Expense Item	Financial Year	Amount (R)
Uptake activities can include events to build awareness of the research within a specified target group, obtaining participation of other researchers or research users, or public engagements.	2016/17	

#### **Budget Summary**

Fin. year	HR	Capital	Running	Minor	Uptake	Total	Deliverables
2016/17	Amounts for each year from table a)	Amounts for each year from table b)	Amounts for each year from table c)	Amounts for each year from table d)	Amounts for each year from table e)	Sum of amounts a) to e) for this year	Sum of deliverable values for each year. <u>Must equal 'Total' to the immediate left in the same line.</u>
2017/18							
2018/19							
2019/20							

#### **Knowledge Dissemination and Uptake**

Explain how you plan to publish and publicise the work in this section. A typical set of interventions to maximise uptake and impact of a project might include: building awareness of the project among one or more defined audiences, securing the commitment of a defined group of stakeholders to the project aims, influencing specific policies or policymakers, and encouraging participation of other researchers or research users, especially in taking the research products beyond the mandate and scope of WRC activities (e.g. commercialising new products and processes).

Public engagement involves activities that bring the WRC or its researchers and the public together. It is more than inviting an audience and presenting research – effective public engagement is two-way communication, with the researchers listening to and learning from participants. Activities can range from engaging people with science concepts through staging debates to involving key stakeholders in shaping research priorities and directions. Public engagement can build trust and understanding between the research community and a wide range of groups, from policy makers to schoolchildren.

#### **Innovation**

Describe what is new here - products or processes, know-how, any new software envisaged or the creation of new knowledge.

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## ***Intellectual property***

Describe here anything you envisage that may possibly be patented, or require other IP protection. Describe any existing IP responsibilities here (see the WRC Intellectual Property Policy).

## ***Capacity / Competency Development***

### ***Individual Development***

State students' details if they are already known, and what degrees the students are working towards by being involved in the project. If the student is yet to be identified, indicate how many students are anticipated, for what qualifications.

Fisrt name	Surname	ID / Passport no.	Gender	Race	Country of origin	Citizenship	Nationality	Institution	Degree	Financial year
MSc	1								MSc	2016/17
MSc	2								MSc	2016/17
PhD	1								PhD	2016/17
MSc	1								MSc	2017/18
MSc	2								MSc	2017/18
PhD	1								PhD	2017/18
PhD	1								PhD	2018/19

### ***Institutional Development***

Institution Name	Nature of Development
State which institutions will benefit from involvement in the project, and how they will benefit.	

### ***Community Development***

Identify which community will benefit from involvement in the project, including the research community, the industrial community and the academic community as well as civil society and the general public.

### ***Additional Funds***

Organisation name	Financial Year	Amount (R)
Describe any other funds sought or secured. A reviewer that sees that you may have, or you have already secured some of your budget from another source will be pleased that your proposal has passed or will be scrutinised by another organisation's review process, and be delighted to see that you are leveraging funds from more than one source.		

## ***Additional Information***

### ***Literature References***

1. **Use original, peer-reviewed references** as much as you possibly can – journals instead of books, reports or conference proceedings.
2. **Never, ever, use Internet references.** Unless you have an in-press journal article with a DOI, all Internet sources are unmoderated and unreliable.

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3. **Use the *Water SA* format** for references (available at <http://www.wrc.org.za/SiteCollectionDocuments/Water%20SA%20documents/Water%20SA%20Guide%20to%20Authors.pdf>).

### ***Additional Comments***

The last section of your proposal will be the one which aims to clinch the deal. If the proposal ends in an “Any further information” or “Concluding remarks” type of section, use the opportunity to reiterate why the community needs the new knowledge you intend to create and how well the work plan you have just described will enable this.

### ***Curricula vitae***

Insert the abridged curriculum vitae of the project leader and principal researcher, including previous WRC projects and *relevant* previous projects and publications (maximum 1000 words). **NOT a full Curriculum Vitae.**