

# NRF Competitive Research Program - Pointers for Proposal Submission

## Objectives of CRP

The main objective of CRP is to identify new strategic areas that Singapore can invest to develop new industries for the future. Funding for research can range from upstream Basic Science research to more downstream applied R&D.

## Areas of preference outside the three main strategic programs

Preference will be given to areas that fall outside the three main strategic areas of Biomedical Sciences (BMS), Environmental and Water Technology (EWT) and Interactive Digital Media (IDM). Proposals that straddle between these areas and other new areas are welcome to submit here.

## Scale of program

The larger budget allowed for CRP is to fund for a number of related projects that address a given problem. At present, CRP provides a large funding quantum from **\$ 5-10 million**. Some of the submitted proposals are not ready for CRP-level funding and should be submitted to other smaller quantum forums.

Sections Required	White Paper	Full Proposal
<b>Objectives of Research Programs</b>	<ul style="list-style-type: none"><li>• This section should briefly articulate the objectives of the proposed research program (both scientific as well as in terms of potential economic and other impact on Singapore);</li></ul>	<ul style="list-style-type: none"><li>• This section should articulate clearly the use-inspired objectives and expected outcomes of the program and how it would contribute towards achieving the objectives of the CRP scheme.</li></ul>
<b>Description of Projects</b>	<ul style="list-style-type: none"><li>• Brief overview of the individual projects within the program (including how they relate to each other and the objectives of the program)</li><li>• Novelty of proposed research viz-a-viz the current state-of-the-art in that field (including an assessment of the international competitiveness of the</li></ul>	<ul style="list-style-type: none"><li>• This section should describe the complementarity / synergies of projects within the program towards achieving the overall program objectives.</li><li>• Details should be provided on the individual projects' objectives, the scientific challenges they are meant to address and proposed methodology/approach to solving these challenges.</li></ul>

	<p>program against other efforts by competitors around the world);</p>	<ul style="list-style-type: none"> <li>• PIs should highlight in this section the importance of the problems being addressed, how their work would create new knowledge or advance existing understanding, the novelty of their proposed approach and the potential for this to produce breakthrough work.</li> <li>• The lead PI and team members for each project should also be given in this section, highlighting any specific competitive advantages of individual PIs in terms of unique capabilities and/or experience relevant to the project's scientific focus.</li> <li>• This section should also be used to highlight the international competitiveness of the work being carried out in terms of scientific merit.</li> </ul>
<p>Economic Potential and Other Contributions of Program</p>	<ul style="list-style-type: none"> <li>• This section should briefly describe the contributions of the program in terms of potential economic and other benefits to Singapore.</li> </ul>	<ul style="list-style-type: none"> <li>• This section should be used to describe the contributions of the program in terms of potential economic and other benefits to Singapore.</li> <li>• Details of any industry collaborations and/or co-funding should be included in this section, with details on the extent and role of industry participation in the program and plans for commercialization if any.</li> <li>• PIs should highlight how the program would generate economic payoffs for Singapore, e.g. through the potential to create new</li> </ul>

		<p>industry or advance existing industry, create spinoffs /IP/licensing, produce innovations that would disrupt existing industries if successful etc.</p> <ul style="list-style-type: none"> <li>• PIs should also highlight other contributions of the program e.g. towards building up research infrastructure, manpower and capabilities in Singapore etc.</li> </ul>
<p>Research Team</p>	<ul style="list-style-type: none"> <li>• This section should highlight the proposed research team’s expertise and relevant prior work/experience, including the roles and contributions of industry PIs or partners where relevant (2 page CVs in the format specified at are required for the lead PI, Co-PIs and all collaborators, these should be attached as an annex to the White Paper and <u>will not</u> count against the 5 page limit);</li> </ul>	<ul style="list-style-type: none"> <li>• This section should highlight the relevant track record and capabilities of individual PIs in the team, their international standing and any unique competitive advantages that they bring to the team in achieving the program’s objectives.</li> <li>• CVs (maximum of <u>two-pages</u> for each PI, Co-PI and collaborator in the format specified should be attached as an annex, which will not count against the 20 page limit.</li> <li>• PIs should use this section to highlight any plans to leverage on collaborations (local/international) and articulate the value of such collaborations to the program.</li> </ul>
<p>Program Management and Budget</p>	<ul style="list-style-type: none"> <li>• This section should provide an overview of the proposed program management structure and plans to increase the likelihood of success, in terms of the program achieving its objectives.</li> </ul>	<ul style="list-style-type: none"> <li>• PIs should also highlight the international competitiveness of the overall program being proposed here.</li> <li>• A summary of the overall program budget should be provided in this section,</li> </ul>

	<ul style="list-style-type: none"> <li>• Budget for the entire program (broken down into broad categories of manpower, equipment, consumables, travel, consultancy services and others)</li> <li>• Justifications for NRF funding support for the proposed program</li> </ul>	<p>broken down into broad categories of manpower, equipment and other operating expenditure (OOE). Justification for the proposed budget in each category should be clearly articulated here. PIs are asked to provide accurate and reasonable budgets in their submissions. Please note that <u>over-budgeting is strongly discouraged</u> and that NRF may ask PIs to revise the requested budget before award if this is found to be the case.</p>
<p>Deliverables of Program</p>	<ul style="list-style-type: none"> <li>• Expected research outputs and outcomes, and proposed KPIs for the program (which should be linked to measuring progress towards the objectives of the program)</li> <li>• Timeline of the program (including intermediate milestones over the duration of the program);</li> </ul>	<ul style="list-style-type: none"> <li>• A summary of the Key Performance Indicators (KPIs) for the program should be provided in this section. KPIs proposed should be linked to the objectives of the program and provide appropriate means of tracking/measuring the success of the program.</li> <li>• PIs should also use this section to highlight important outcomes that can be expected from the successful execution of the program.</li> </ul>

### 1. Collaborator participation

All collaborators must be shown to be actively involved in the program.

#### For Industry Collaboration

##### Role of industry partners

Provide clarification on the roles that the industry partners will play. Would they be directly involved in the research and would they be expected to draw on the funds as part of the program. In-kind contributions can be included in the “Budget” section if necessary.

### **Industry co-funding**

Industry co-funding is allowable for CRP. Since the maximum budget that can be awarded from NRF is S\$10million, the PI is free to involve industry partners for additional funding. If industry partners are expected to draw on the funds, a breakdown of the budget requested for and the contribution by the private sector entity should be shown, as companies are expected to provide co-funding of at least 30% on total amount of research cost incurred if they draw from the CRP fund. The specific amount of co-funding required will depend on how upstream and downstream the research is.

## **2. Budget**

### **Budgeting for Overheads and Other Indirect Costs**

As stated in the NRF Guidelines for Fundable / Non-Fundable Items (available on the CRP webpage):-

**20%** of total qualifying direct costs (less exceptional items) will be used for **overheads** and **10%** will be used to support **IP protection** (excluding litigation costs) and **commercialization activities** (including proof of concept grants, prototyping costs, etc.) in **equal shares of 5% each**.

The maximum grant award per program of S\$10 million is inclusive of direct project costs, budget for overheads and support for IP protection/commercialization activities.

### **Management of budget for overheads and IP/commercialization support**

Budget for overheads is managed by the host institution of the PI. NRF will disburse the sum to a central account and the office in charge will be responsible for disbursing the funds to the relevant parties according to the percentage stated. 20% for overheads will be disbursed to the Office of research and 10% for IP/commercialization will be disbursed to the Technology Transfer Office (TTO) of the host institution. This indirect cost is mandatory. The TTO can decide how to spend the money and it is not necessary for them to apportion the 10% cost for every PI. The money can be used for other research projects that are not funded by NRF, although priority must be given to the NRF funded projects

### **Budget submission process for PIs**

PIs should submit only the direct costs for the research program using the RITA online application form i.e. the amount indicated should be the grant amount requested from NRF for direct costs only. NRF will then assign the amounts to be awarded for overheads and IP/commercialization support. For proposals which exceed S\$10 million, only the amount requested from NRF need to be filled up in the RITA form. . Any additional funding support that the PI has obtained or is in the process of obtaining for the program e.g. commercial funding,

should be indicated in the attachment describing the full budget details in Section 4.

### **Full justification for equipment or items over S\$100,000**

Justifications for budget items over \$100,000 should clearly state both why the expense is needed for the research and why a new purchase needs to be made e.g. is this equipment not currently available for the group's use or not available in Singapore (for large-scale equipment/shared facilities. This should be included in the 20-page Full proposal.

## **3. IP/Commercialization Activities**

### **IP Policy**

#### ***(I) Background IP***

- All collaborators will grant each other free access to any BIP necessary for the purpose of carrying out the research collaboration to develop potential FIP. Exceptions to this may be made in cases where the BIP may be encumbered e.g. where prior licensing or other arrangements prevent free access to other parties other than the IP owner, even for research purposes only. However, in such instances the research team should assess whether the encumbered BIP is critical for developing and exploiting any potential FIP and make an informed decision on how to proceed.
- If necessary for the subsequent commercialisation of FIP, the terms and conditions for the use of any BIP should be negotiated separately with the relevant BIP owner.

#### ***(II) Foreground IP***

- Where **no collaboration is involved**, the host institution will own the FIP generated through NRF-funded research activities. In the event that the host institution is a company or company-affiliated research laboratory/institution, it must grant Singapore-based IHLs, the Singapore Government and public sector agencies a royalty-free right and licence to use the FIP for research and educational purposes only.
- Where **joint collaboration between two or more parties is involved, and the collaborators are not co-inventors of the FIP**, the host institution's policies on IP ownership will apply, with use and commercialisation rights to be decided between the parties.
- Where **joint collaboration between two or more parties is involved, and the collaborators are co-inventors of the FIP**, the FIP should be co-owned by the employing institutions of all participating research collaborators who are co-

inventors of the FIP concerned, with use and commercialisation rights to be decided between the parties.

**(iii) General IP policy**

- Any assignment of FIP to third parties should not be against Singapore's interests as a whole and should not hinder the freedom of research collaborators to further exploit the FIP (whether through further research, collaborations or commercialisation).

- IP management and commercialisation should be based in Singapore. The host institution, or its designated commercialisation entity, must make best efforts to commercialise the FIP and give first right of refusal to Singapore-based companies for commercialisation, without disadvantaging small high-tech companies.

**4. CV**

Each member should provide a **2 page CV** according to the format specified in the guidelines.

**5. Declaration of other funding support**

PIs who failed to declare other funding support or pending submissions to other forum will be penalized when caught.

**Remarks**

**Will proposals without commercialization be ranked lower?**

The Full Proposal will be judged based on the guidelines given in the "Guidelines for submission of CRP Full Proposal". There are many other deciding factors that the International Panel will consider during the evaluation process so we are unable to determine whether projects with no commercialization element will be ranked lower. However, it must be noted that the program will be judged on the economic potential it can bring to Singapore.

**Additional Notes for applicants**

- **Incremental improvements of existing know-how and technologies are unlikely to be supported.**
- **Interdisciplinary researches involving various faculties are highly encouraged.**
- **Proposals submitted to other funding agencies will not be supported. However, CRP could be used to support research projects with preliminary results from other grants and currently looking for next level larger scale funding.**