The Department of Science & Technology (DST)
Bioinformatics & Functional Genomics Programme
(BFG)

Call for applications for funding from 2015

Guide to Applicants

Read this guide carefully before completing your application on
https://nrfsubmission.nrf.ac.za

Your application will only be considered if you comply with the requirements as set out this Guide
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1. Introduction

South Africa recognizes the importance of and special contributions of studies in Bioinformatics towards transforming the bioeconomic landscape and in this context the Department of Science and Technology (DST) and the National Research Foundation (NRF) initiated a Funding Programme for Bioinformatics and Functional Genomics in 2009. The main purpose of the programme is to generate bioinformatics solutions and knowledge relevant to the South African biotechnology industry. This programme has supported a number a projects in the sector of which the current support is ending in December 2012. In order to ensure continuity of support to the sector, the DST and NRF is launching a call for funding in 2013.

The upsurge of global interest in Bioinformatics as a rapidly developing branch of biology with a unique interdisciplinary flavour in disciplines such as statistics, informatics, mathematics, chemistry, biochemistry, physics and linguistics gives some hope that a lot can be achieved by continued investment in the field. In the South African context, the need to invest in Bioinformatics was reinforced by the Cabinet’s approval of the South African National Biotechnology Strategy (SANBS) in 2001. The Strategy outlines a plethora of opportunities for multiple socio-economic returns through the country’s strategic investment in biotechnology capabilities required to build a globally competitive bioeconomy that can provided solutions to local and regional challenges such as malaria, HIV/AIDS, food security, environmental protection and employment.

In its attempt to reinforce the importance of Bioinformatics, the Department of Science and Technology reaffirmed its commitment to invest in the discipline through its Ten-Year Innovation Plan, especially the Farmer-to-Pharma grand challenge, which was prioritized as an innovation chain to strengthen the bioeconomy of South Africa. It is in this context that the DST-NRF collaboration is vital since it strives to promote and support knowledge creation and human capital as the key enablers of innovation.

2. Aim of Programme

The aim of this funding programme is to support bioinformatics applications in biotechnology projects in line with national priorities as set out in the South African National Biotechnology Strategy and the DST 10 year plan.

3. Strategic Objectives

There are four over-arching objectives to the programme:

- To create a pool of postgraduate students equipped to support the South African biotechnology sector.
- To generate bioinformatics solutions and knowledge relevant to the South African biotechnology industry.
- To support bio-informatics based projects funded through the various biotechnology initiatives (e.g. COEs, Research Chairs, etc.).
- To promote collaboration between academic institutions as well as between academia and industry.
4. Broad Areas of Support

The Programme will support basic and applied research with particular emphasis on Health, Agricultural and Industrial bio-economy. Such work should preferably be aligned with national priorities and objectives.

5. Eligibility

In order to qualify for funding, applicants must:

i. Be full-time academics at South African Higher Education Institutions, Science and Research Councils or other recognised institutions for the duration of the project.

ii. Carry out research projects aligned with the Bio-economy Strategy research themes.

6. Priority Research Projects

The following types of research projects will be given priority:

i. Consortium projects that have a strong industry linkage – responsive to research skills needs in biotechnology industry. Where an industry partner is not available, the research team must comprise a minimum of two institutions, including emerging researchers for capacity development.

ii. Projects that utilise the existing infrastructure and biotechnology innovation centres and other biotechnology initiatives (e.g. Research Chairs, COEs, etc.).

iii. Existing projects that could be expanded – where additional research needs have arisen for bioinformatics applications.

iv. Projects that have strong elements of targeted bioinformatics data mining.

7. Nature of Support

The bioinformatics and functional genomics support programme provides support on an open and competitive basis. Projects will be supported for up to three years on condition that:

a) Sufficient progress is demonstrated annually through the submission of an annual progress report (APR) and through the oral presentation of progress reports at the annual technical visit;

b) Written approval for continuation will be given annually to the grant-holder by the NRF, with preference for renewal given to applicants who have achieved at least 80 % of set deliverables;

c) Sufficient and satisfactory evidence of scientific outputs/outcomes and critical mass in bioinformatics and functional genomics.

The following items are funded within the programme on condition that they are legitimate research costs and support the proposal presented to the NRF for consideration:

i. Running costs that include research materials and supplies except for wet lab costs

ii. Equipment like servers, hardware and computers, etc. Laptops must be linked to students or staff.

iii. Software developers if essential for the project.

iv. Technical support staff with motivation.
v. Specialised software, 3-G modems, etc with motivation.
vi. Training workshops and visits to other labs for students and conference attendance. NRF policy will apply in this regard.

vii. These costs should be justified and commensurate with the planned outputs, as they will be assessed on this basis. The NRF will require a financial statement of expenditure of these funds that will be included in an annual progress report. This information will be used to assess ongoing eligibility as well as the level of funding for subsequent years of the project.

viii. Bursaries may be applied for, to a maximum bursary value of R35 000 for Honours; R60 000 for Masters; R100 000 for PhD, and R200 000 for Post Docs.

Table 1: Grant-holder Linked Bursaries and Fellowships:

<table>
<thead>
<tr>
<th>Level of study</th>
<th>Value of support per annum</th>
<th>Maximum period of support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Honours Full Time</td>
<td>R35 000</td>
<td>1 year</td>
</tr>
<tr>
<td>Masters Full Time</td>
<td>R60 000</td>
<td>2 years</td>
</tr>
<tr>
<td>PhD Full Time</td>
<td>R100 000</td>
<td>3 years</td>
</tr>
<tr>
<td>Postdoctoral</td>
<td>R200 000</td>
<td>2 years</td>
</tr>
</tbody>
</table>

Strict compliance to the NRF rules governing bursary allocations will be enforced.

a) Bursaries will become active once the identified students are nominated using the NRF nomination process;
b) Honours bursaries are awarded only to South African citizens only (not holders of permanent resident certificates) registered at South African universities, with a ratio of 1:1 for white and black students.
c) Masters and doctoral bursaries are awarded to South African citizens and holders of permanent resident certificates, registered at South African universities.
d) However, grant-holders may, with the approval of the NRF Manager, allocate bursaries to meritorious PhD students in the ratio of 80:15:5 (SA: African (other than SA): International (from countries not on the African continent).
e) At masters level the ratio is 90:10 (SA: African (other than SA).

8. Conditions of Support

The following conditions are applicable:
i. Projects must include postgraduate training.
ii. Projects must have potential for local beneficiation and bio-economy outcomes such as post-graduate training and support, publications, collaborations (including industry partnerships) and strengthening the value chain;
iii. Wet lab cost must be covered by other sources of funding for example THRIP, Thuthuka, TWAS, SANBio, FP7, H2020, etc.
iv. Projects must be economically and socially viable.
v. Projects must drive use of technology and innovation relevant to bio-economy in South Africa.
vi. Project must drive the use of datasets in South Africa.
vii. Project must have the relevant expertise in the research team.
viii. Successful applicants must sign Conditions of Grant (COG) between the NRF and the grantholder/institution.
ix. Additional support and training needs should be channelled through the Bioinformatics Service Platform.
9. Grant Payments

All grants are subject to compliance with the NRF conditions of the grant, as specified within the letter of award.

i. Award letters will be sent to all successful applicants together with a set of conditions of grant in year one;

ii. On receipt of the signed acceptance of the conditions of grant and the nomination of students by name (and receipt of an acceptable Annual Progress Report in years two and three) the grant will be released for payment;

iii. Payments will be triggered by receipt of grant expenditure using the standard NRF systems.

10. Application Process

All application materials must be submitted electronically via the NRF’s Submission system at https://nrfsubmission.nrf.ac.za

The NRF closing date for endorsed applications is 29 August 2014. All applications must be endorsed by the research office of the principal applicant before submission to the NRF. It is the responsibility of each applicant to familiarise himself / herself with the internal closing dates, set by institution in order to meet the NRF closing date.

Incomplete OR late submissions will not be accepted.

NB: All applicants are encouraged to register/update their CV’s on https://nrfsubmission.nrf.ac.za

Peer Review Process

The NRF will coordinate and lead the peer review process. Reviewers will be nominated from both local and international experts, including members of the Bioinformatics Research Agenda Advisory Committee.

i. Funding Decisions

The final sign-off for funding decisions will be the responsibility of the NRF. The Executive Directors Applied Research, Innovation & Collaboration (ARIC) and the Grant Management & System Administration (GMSA), the Director managing the BFG programme and the Grant Director responsible for fund disbursement and expenditure monitoring must sign-off.

11. Indicative process & Timelines

<table>
<thead>
<tr>
<th>Table 2: Indicate dates and timelines</th>
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</thead>
<tbody>
<tr>
<td><strong>Activity</strong></td>
</tr>
<tr>
<td>Call open and closing dates</td>
</tr>
<tr>
<td>Peer Review Process</td>
</tr>
<tr>
<td>Panel Meeting</td>
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<tr>
<td>Outcomes for Applications</td>
</tr>
</tbody>
</table>
12. Funding decision process

i. ASSESSMENT OF PROPOSALS

As a standard operating procedure, proposals will be assessed in a two-tiered process:

- A postal peer-review process where proposals will be sent to external reviewers with the intention to receive three review reports per proposal. The postal peer reviewers will be specialists within the ambit of the respective proposals and they will be requested to provide a narrative assessment of the application against the criteria stated in the details section of the scorecard.

- A panel process where the panel will consider the specialist reviewers’ assessments and shall provide the score for each criterion. Each proposal will be scored against the scorecard as set out below. The panel will also be asked to make funding recommendations to the NRF.

The postal peer reviewers (narrative assessment) and panel members (score) will assess the proposals and make recommendations to the NRF using the following criteria:

Table 3: Scoring criteria:

<table>
<thead>
<tr>
<th>Panel Assessment Scorecard</th>
<th>Bio-informatics &amp; Functional Genomics Funding Instrument</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.</td>
<td>Criteria</td>
</tr>
<tr>
<td>-----</td>
<td>----------</td>
</tr>
<tr>
<td>1</td>
<td>Proposal</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Track record of applicant</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Equity and redress</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Collaboration</td>
</tr>
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<td></td>
<td></td>
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</tbody>
</table>

- Is the rationale for the
### Panel Assessment Scorecard

#### Bio-informatics & Functional Genomics Funding Instrument

<table>
<thead>
<tr>
<th>No.</th>
<th>Criteria</th>
<th>Sub-Criteria</th>
<th>Details</th>
<th>Score / 4</th>
<th>Weight (Total = 100%)</th>
<th>Weighted score (Total = 4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td></td>
<td></td>
<td>collaboration clear, justified and appropriate?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Are the roles of the collaborators clearly indicated in the proposal?</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Within a team (Is it appropriate?)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Are the roles of these team members clearly indicated in the proposal?</td>
<td>5%</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>Expected research outputs</td>
<td>Scientific products, e.g., publications, patents, etc. relevant in each case.</td>
<td>5%</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Impact on knowledge production/field</td>
<td>The potential for the research to advance discovery and understanding in the field of Bio-informatics &amp; Functional genomics research?</td>
<td>10%</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Plans for digital data storage, usage and/or dissemination</td>
<td>If relevant, are the proposed plans appropriate?</td>
<td>2%</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Human Capital Development</td>
<td>Skills development</td>
<td>• The extent to which the project will contribute to empowerment or skills transfer that addresses the human capital development needs of bio-informatics &amp; functional genomics research within South Africa;</td>
<td>15%</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• The intensity of post graduate student training intended in the project and provision of funding to the students involved, for their studies.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Other</td>
<td>Ethical research</td>
<td>If relevant, have ethical considerations been addressed?</td>
<td>0%</td>
<td>Hurdle</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Totals</td>
<td>100%</td>
<td>0.00</td>
<td></td>
</tr>
</tbody>
</table>

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2 Ethical considerations and clearances for grant proposals are the responsibility of the research institute and/or institution of the applicant. Where such ethical considerations and clearances are required, grant applicants will be expected to submit to the NRF signed statements and/or copies of clearance certificates before any grant funds are released.
ii. SCORING OF PROPOSALS IN EVALUATION PROCESS

This proposal assessment tool has been designed primarily on the basis of the BFG programme objectives, priorities and criteria. Please note the following:

- The level of funding, or a decision not to fund, is based on the proposal assessment tool. Not all “fundable” projects will necessarily be funded as budget may be a limiting factor.
- Proposals are assessed by a panel of researchers and practitioners who grade applications according to the parameters in the proposal assessment tool and award scores up to a maximum for each criterion.
- The panel adjudication of projects strongly guides the BFG management team.

Proposal scoring key
Each criterion (where applicable) is graded on a sliding scale of 0-4 where 0= Poor and 4 = Excellent.

<table>
<thead>
<tr>
<th>Score</th>
<th>Meaning of score</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Excellent</td>
<td>Evaluation of proposal against the stated criterion demonstrates evidence of outstanding performance against the stated criteria, as determined by the panel and relative to knowledge field.</td>
</tr>
<tr>
<td>3</td>
<td>Above average</td>
<td>Evaluation of proposal against the stated criterion demonstrates above average performance across the stated criterion, as determined by the panel and relative to knowledge field.</td>
</tr>
<tr>
<td>2</td>
<td>Average</td>
<td>Evaluation of proposal against the stated criterion demonstrates average performance across aligned to the stated criteria, as determined by the panel and relative to knowledge field.</td>
</tr>
<tr>
<td>1</td>
<td>Below average</td>
<td>Evaluation of proposal against the stated criterion demonstrates below average performance aligned to the criteria, as determined by panel and relative to knowledge field.</td>
</tr>
<tr>
<td>0</td>
<td>Poor</td>
<td>There are major shortcomings or flaws within and across the stated criterion, with particular emphasis on the scientific/scholarly merit.</td>
</tr>
</tbody>
</table>

13. Contact details

Please address all enquiries to:

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