



BRICS Multilateral Joint Science and Technology Research Collaboration 2021 Call for Joint Project Proposals

Pre-proposal closing date: 14 October 2021

Full proposal (by invitation only) closing date: February 2022 (tbc)

17 September 2021

BACKGROUND

On 18 March 2015, the BRICS Ministers of Science and Technology signed a Memorandum of Understanding (MoU) to establish a research and development collaborative programme between the BRICS countries. Following the signing of this MoU, the BRICS Group of Research Funding Parties held a meeting in July 2015 to discuss the BRICS Research and Innovation Initiatives and the establishment of the BRICS Working Group. Currently the Group consists of twelve (12) parties namely; National Council for Scientific and Technological Development (CNPq, Brazil), Foundation for Assistance to Small Innovative Enterprises (FASIE, Russia), Ministry of Science and Higher Education (MSHE, Russia), Department of Biotechnology (DBT, India), Department of Science and Technology (DST, India), Ministry of Science and Technology (MOST, China), National Natural Science Foundation of China (NSFC, China), Department of Science and Innovation (DSI, South Africa), South African Medical Research Council (SAMRC, South Africa), National Research Foundation (NRF, South Africa), Technology Innovation Agency (TIA, South Africa) and the Water Research Commission (WRC, South Africa)

On 28 October 2015 the III BRICS Science, Technology and Innovation (STI) Ministerial Meeting signed the Moscow Declaration defining the guidelines for Research & Development cooperation among BRICS countries. In line with the objectives of the Moscow Declaration and the BRICS STI framework the SAMRC is pleased to announce the 5th BRICS Multilateral call for 2021, and herewith invite all interested parties to submit their applications, by dates no later than that indicated.

The South African Department of Science and Innovation (DSI) is providing funding for project activities in South Africa. The South African Medical Research Council (SAMRC) is the participating funding organisation in South Africa for the thematic areas listed below.

RESEARCH AND DEVELOPMENT THEMATIC AREAS

Proposals in the following two thematic areas will be considered:

1. **Antimicrobial resistance: technologies for diagnosis and treatment**

The World Health Organisation (WHO) has declared Antimicrobial Resistance (AMR) as one of the top 10 global public health threats facing humanity (www.who.int). BRICS countries have acknowledged that this health issue could undermine decades of progress in combating infectious diseases and emphasized the need to implement the WHO's Global Action Plan on AMR addressing issues of equity, affordability and sustainable access to medicines. The Global Plan calls for greater innovation and investment in operational research, and in R&D of new antimicrobial medicines, vaccines, and diagnostic tools especially in accordance with what was pointed out by WHO in "Prioritization of Pathogens to Guide Discovery, Research and Development of New Antibiotics for Drug-resistant Bacterial Infections, including Tuberculosis".

a. Diagnostic tools: Design, development and validation of rapid and early diagnostic tests, including point-of-care tests for the treatment and prevention of infections, particularly those caused by antibiotic resistant organisms in humans.

b. Therapeutics: To improve existing antimicrobial treatment by augmenting discovery of novel drugs, treatment strategies and alternative therapeutics and optimizing drug use, dose and delivery. This would include:

- Development of new novel antimicrobial drugs (involving synthetic biology/chemistry or alternatives to antibiotics) or investigation on new potential targets for the development of antimicrobial drugs (bacteria, parasites, viruses and fungi).
- Develop treatment protocols based on combination therapy using existing and new antibiotics
- Address gap in our understanding of the molecular and cellular biology of bacteria, parasites, viruses and fungi resistance, especially how they evolve, acquire and transmit antibiotic resistance and how they adapt to life in humans.

c. Vaccines: Develop vaccines to be used prophylactically, decreasing the number of infectious disease cases, and thus antibiotic use and the emergence and spread of AMR.

- 2. Simulation and big data analytics for advanced precision medicine and public healthcare;** Big Data are radically changing biomedical research. The unprecedented advances in automated collection of large-scale molecular and clinical data pose major challenges to data analysis and interpretation, calling for the development of new computational approaches. The creation of powerful High-Performance Computing (HPC) systems for the effective use of biomedical Big Data in Personalized Medicine (a.k.a. Precision Medicine) will require significant scientific and technical developments, including infrastructure, engineering, project and financial management. We review here how the evolution of data-driven methods offers the possibility to address many of these problems, guiding the formulation of hypotheses on systems functioning and the generation of mechanistic models, and facilitating the design of clinical procedures in Personalized Medicine. Some of the areas include HPC, wearable device technologies, computational genomics, AI, modelling, simulation and big data analytics for advanced precision medicine and public healthcare, with applications including Genomics and epidemiological surveillance, drug design, vaccine design.

DURATION AND START DATE OF PROJECTS

Projects will be supported for two (2) or three (3) years. The official start date of the project, expected during the middle of 2022, will be decided through consultation between the SAMRC, DSI and the relevant funding agencies in the other BRICS countries.

WHO MAY APPLY?

This is an open call for proposals from researchers based at R&D organisations, South African universities, science councils (including the SAMRC) and other organisations, including:

- Any institution approved by the Minister of Higher Education Science and Innovation for NRF funding
- Locally registered not-for profit research organisations whose primary purpose is to conduct research and/or product development – such entities may be subject to due diligence before the award of funds

- South African private/for-profit small and medium enterprises involved in developing and products (solutions) – such entities may be subject to due diligence before the award of funds

Foreign entities are not eligible to apply for funding through this RFA but may, in some cases, be included as collaborators if they provide a service, technology or capability that is not available among the project partners or among other eligible organizations.

In addition to the above, applicants/principal investigators (PIs) must be South African citizens or permanent residence holders. While there is no limit to the number of applications submitted per organization, PIs may only submit one application each as the PI but may be involved in more than one application if listed as a co-investigator.

HOW DO I APPLY?

Application

A joint project will comprise of at least one Principal Investigator (PI) from each of the participating countries, with one of the project participants also acting as a Project Coordinator (or lead PI). Project consortia should consist of partners from **at least three of the BRICS countries, including South Africa**. Each consortium partner outside South Africa must apply for funding from their respective country funding agency.

Application process

The application submission is a two-stage process:

1. Stage 1: Pre-proposal

A Joint Application Form (JAF) (link for download: http://brics-sti.org/files/JAF_BRICS_Call_2021.docx) shall first be submitted by the Project Coordinator to the Call Secretariat through the online BRICS STI Framework Programme Application Management System (BRICS AMS) at <http://ams.rfbr.ru/BRICS>. The JAF must be completed in English.

The JAF solicits information on:

- i. Thematic area;
- ii. Title and acronym of collaborative research project;
- iii. Proposed period of collaborative research project;
- iv. Project summary;
- v. Project objectives;
- vi. Research teams;
- vii. Budget requested.

2. Stage 2: Full proposal

Only South African PIs from invited consortia shall submit a full proposal to the SAMRC on the prescribed application form.

3. Preparation of application forms

Applicants (from at least 3 BRICS countries) should agree on the aims, research strategy and management, the title of the project, and agree on the project coordinator. Based on these arrangements the applicants should complete the JAF.

4. Submission of application forms by applicants

a. Stage 1: Submission of Pre-proposal (Joint Application Form).

Applicants must submit the Joint Application Form (JAF) to the Call Secretariat via the online application submission tool until **15:00 (Moscow Time, UTC+3) on 14th October 2021.**

To submit the JAF, an online-submission form must be completed via the BRICS STI Framework Programme Application Management System (BRICS AMS) at <http://ams.rfbr.ru/BRICS>. The project coordinator should register in BRICS AMS, log in and create a proposal for the BRICS STI FP Call 2021. The Project Coordinator must fill in all the required fields and submit an application. The online submission form fields are identical to the information provided in the JAF, however the completed JAF as a file attachment to the online form is encouraged and uploaded in the “upload file” section of the online submission form. Please note that online submission form fields do not provide opportunity to upload images, so they can only be provided in the attached JAF file (PDF format is preferable).

Additional partner(s) to the minimum eligible number of required participants is(are) allowed to join a project at their own costs. If any additional partner is joining the project on own costs, requested funding amount should be stated as “0” (zero) in the corresponding proposal box item.

Applications submitted to the Call Secretariat by any method other than through online submission form at <http://ams.rfbr.ru/BRICS>, such as post or e-mail, will be rejected. All pre-proposals will be subject to review (please see section g.2. “Evaluation of Project Proposals” below for more details) and based on the review outcomes selected projects consortia will be invited to submit Full proposals.

Following pre-proposal review, applicants will be notified of the outcomes of the review by the Call Secretariat. The results of the review for each pre-proposal will be communicated via BRICS AMS system by changing the status of the respective Pre-proposal to “invited” or “not invited”. Upon changing the status of Pre-proposal in the BRICS AMS system an additional e-mail notification may be sent to the respective project coordinator, however, applicants are obliged to monitor the status of the project by themselves and e-mail notification should be treated only as an additional action (failure of e-mail receipt may not serve as excuse for not being notified).

It is expected that pre-proposals review outcomes will be communicated to applicants in **December 2021.**

b. Stage 2: Submission of full proposals.

All full proposals (by invitation only) must be completed on the DSI/SAMRC application form posted on the SAMRC website or obtainable from the Project Administrator, Arlene Smith

(arlene.smith@mrc.ac.za). The length of the application should not exceed 15 single spaced pages, excluding annexures. The application must address the following areas:

- **Abstract (max 1 page)**
 - Provide a summary of the proposed project
- **Research and development question (max 2 pages)**
 - Give a brief description of the research priority in the relevant thematic area that will be addressed by the proposed project
- **Rationale and motivation (max 3 pages)**
 - Provide a background and scientific rationale for the proposed research, outlining, where appropriate, the theoretical framework that forms the basis of the research, and discussing how the proposed research will address the research priority identified above, and
 - Indicate how the proposed research is expected to contribute to an integrated, cross disciplinary, collaborative research programme advancing health-relevant knowledge and/or contribute to improvements in health outcomes.
- **Research aims and objectives (max 2 pages)**
 - Outline the main aim(s) of the proposed R&D activities and specify the research objectives that are to be achieved.
- **Research design and methods (max 5 pages)**
 - Noting that the overarching goal of the programme is to support innovative, inter-disciplinary and collaborative research projects that address both South African and BRICS countries health problems, give an account of the overall research approach and the following:
 - specifics of the research design, including any multi-disciplinary aspects as well as stakeholder interaction/participation;
 - the research methods and/or experimental techniques to be employed, including human subjects protection plan for clinical studies;
 - the data collection and analysis strategies / approaches to be adopted;
 - the statistical treatment and analysis of data, and
 - responsibilities and timelines in doing the work (who will do what when?), including communication and collaboration activities

Applicants should give a detailed account, as required above, of the targeted outcomes in each of the two or three years of their proposed research. The R&D design and methods should be well aligned with the stated research aims and objectives.

- **Expected outputs/outcomes/impact (max 2 pages)**
 - Outline the expected direct and/or indirect outputs/outcomes/impact of the research in terms of the collaborative programme goals outlined above. It includes:

- the advancement of scientific/health knowledge;
- human capacity development (eg., number of post-graduates trained and post-docs mentored);
- specific research outputs (e.g. products and publications in high impact journals), and
- Contributions the research is envisaged to make to improvements in health and/or policy outcomes.

Each national team of a project that is invited to the full proposal stage must submit a proposal to the respective national funding organization according to its own rules and procedures. If any PI of the particular project consortia fails to submit a national component to its respective national funding organization, the full proposal will be considered as not submitted. The national component to be submitted varies in form, terms and information provided depending on the particular participating funding organization. More details can be found in the National Annex document (can be downloaded from <http://brics-sti.org/index.php?p=new/30> page) and on the websites of participating funding organizations.

Please note that some participating funding agencies may start the process of national component submission prior to the pre-proposal review completion. In this case certain national teams applying for funding to their respective national funding organizations may need to enter the full proposals submission stage (submit national component) prior to receiving information on results for respective pre-proposal review.

5. Receipt of application forms by the Call Secretariat

Following the online submission of the Joint Application Form, the confirmation message with pre-proposal registration number will be shown in confirmation message. On “my projects” page in BRICS AMS the proposal status thereafter will be shown with assigned registration number BRICS2021-XXX (where XXX stands for unique number) and stage “Registered”.

6. Retraction of submitted pre-proposal application

At any time after online submission of a pre-proposal application before the deadline, an applicant can retract the application for modification on “my projects” page in BRICS AMS. Following retraction action an application is considered as “not submitted”. Re-submission of the application is only possible until the call deadline **(15:00 (Moscow Time, UTC+3) on 14th October 2021)**. Upon completion of re-submission a new registration number will be assigned to the application.

7. Evaluation of project proposals

a. Evaluation procedure

The evaluation procedure is a two-stage process: pre-proposal evaluation and full proposal evaluation.

i. Pre-proposal evaluation

A group of independent reviewers will evaluate pre-proposals and provide recommendations on whether to invite project consortia to proceed to the full proposals stage or not. Based on the

recommendations of the independent reviewers, a joint decision by the participating funding organizations will be made regarding the selected proposals to be invited.

ii. Full proposal evaluation

Each participating funding organization evaluates all proposals where researchers from its own country request funding from their respective funding organization. Based on the results of the evaluation, a joint decision by the relevant participating funding organizations will be made regarding the selected proposals to be co-funded.

8. Evaluation Criteria

a. Pre-proposals:

The following evaluation criteria will be considered for the review of pre-proposals:

- Check that the project addresses one of the topics of the Call
- Scientific quality and innovativeness of the goals and objectives of the joint research project
- Added value to be expected from the international research collaboration

b. Full proposals:

The following general evaluation criteria will be considered for full proposals:

- Scientific quality and innovation of the joint research plan
- Sound project management, methodological approach, feasibility and appropriateness of the joint research plan
- Added value to be expected from the research collaboration
- Balanced cooperation
- Competence and expertise of teams and complementarities of consortium (interdisciplinary/ all necessary expertise)
- Appropriateness of resources and funding requested
- Expected impacts: e.g. scientific, technological, economic, societal
- Opportunities for early career researchers
- To encourage the participation and joint research by the business sector.

9. Announcement of decision

Applicants will be notified of the final decision in the second quarter of 2022 regarding the approved joint projects for funding.

10. Responsibilities of the PI following approval of projects

After the proposals have been approved, the PI and his/her own affiliated institution are required to adhere to the following when carrying out the collaborative research and utilising funding:

a. Progress Report

All researchers must follow their own funding organizations' rules and procedures.

b. Final Report

i. Final Report to the BRICS STI Framework Programme Secretariat

After completion of the period of joint research, the project coordinator shall complete and submit within three months an integrated final report to the BRICS STI FP Secretariat on the

results of the joint research. The report will be reviewed by the BRICS STI Funding Working Group.

ii. Final Report to each participating funding organization

The SA Pi must submit a final report to the SAMRC on the prescribed template within 3 months of the completion of the project.

WHICH ACTIVITIES MAY I APPLY FOR?

Each selected project will be funded for a period of two (2) or three (3) years, subject to the submission of an annual report and satisfactory progress for continuation of funding. To facilitate the objectives of the joint project, labour costs, consumables, research expenses, project related visits of South African and BRICS country researchers to the counterpart country may be supported. Funding under this programme will cover the following expenses related to the project:

- Support for research expenses: Expenditure by the project team in their country would be provided by the respective BRICS country funding agency.
- Institutional overhead – 6.5% of project budget excluding VAT.
- While the exact nature of expenditure is not fixed, the following may **NOT** be funded from this allocation: purchase or construction of a building, rental costs for space that is owned by the institution, recruitment costs for staff, and purchase of office furniture.

HOW MUCH MAY I APPLY FOR?

Project activities in South Africa will be supported for either two (2) or three (3) years and should be budgeted accordingly.

HOW ARE APPLICATIONS EVALUATED?

For full proposals, there will be a three-step review and evaluation process, viz,

- Internal DSI/SAMRC screening for responsiveness to all the specified administrative and procedural provisions required in the RFA,
- Peer-review to assess the scientific merit (and other review criteria as specified below) of applications found to be responsive to the provisions of this RFA, and
- Based on the results of the peer-review, a joint decision by the participating funding organizations will be made regarding the selected proposals to be co-funded.

Internal screening

All applications will be screened jointly by the DSI & SAMRC for completeness and responsiveness to the goals of the RFA and its administrative requirements/provisions. If the application is found to be incomplete or unresponsive to the provisions described in the RFA, the application will be returned to the applicant without further review.

Peer-review of qualifying applications

Responsive applications will be reviewed by recognised experts in the scientific field(s) of research and the societal relevance represented by the proposals received. These experts will evaluate each proposal based on the following criteria:

- **Relevance and clarity of objectives** in relation to the aims of the call;
- **Scientific quality of the proposal** (scientific excellence of the proposal in terms of innovative approach, originality and expected progress beyond the state of the art, availability and quality of existing data, comparative perspective and multi-disciplinarity);
- **Quality of the project consortium** (international competitiveness of participants in the field(s), previous work and expertise of the participants, added value of the transnational collaboration, participation of early-stage career researchers);
- **Feasibility of project plan** (relation of work packages to proposal themes and aims, quality of work plan and time schedule, balanced participation of project partners, quality and efficiency of the coordination and management, scientific justification and adequateness of the requested budget and risk assessment); and
- **Potential impact on society and citizens** (response to actual societal needs, providing evidence for policy makers and practitioners; early integration of relevant stakeholders, ensuring societal relevance over the course of the project and its dissemination).

Consideration will also be given to the training of students and young researchers achieved through research and the transfer of knowledge and know-how aimed at socio-economic development. The integration of young researchers and students, and the exchange of post-doctoral researchers are encouraged, as is the involvement of students and researchers from previously disadvantaged communities.

PROJECT FOLLOW-UP AND REPORTING

PIs must submit common/joint scientific and financial annual reports from the year of receipt of the grant. A final scientific and financial report must be submitted no later than 3 months after the end of the project. Reports must be completed on the template provided by the SAMRC.

SCIENTIFIC AND REGULATORY COMPLIANCE

Ethics

PIs are required to maintain the highest ethical and safety standards in conducting the research, particularly when human and animal subjects are involved. It is the responsibility of the PIs to comply with all relevant regulations in this regard, including those of the institution at which the research is carried out. Applicants should make mention in the application if the project lacks ethical problems, needs certain ethical considerations, will be submitted to an ethical review committee, or has been approved by an ethical review committee.

An ethics approval certificate from a National Health Research Ethics Committee approved Institutional Ethics Committee (and the South African Health Products Regulatory Authority

(SAHPRA), if necessary) must be submitted to the SAMRC in respect of successful applications before funding can be released.

Compliance with POPIA

As of the 1st of July 2021, the new Protection of Personal Information Act (POPIA) came into full effect. The law is designed to protect how all juristic persons use, store and process data. You can read the full details on the act here: <https://popia.co.za/>.

The SAMRC as a responsible statutory science council will comply with POPIA. The SAMRC will receive personal information through the research proposals/applications submitted to the SAMRC in response to this RFA. The personal information requested on the proposal template is necessary for the SAMRC to fully evaluate the proposal for funding. This information will be shared with external reviewers, members of the Grant Selection Committee as well as the SAMRC management for the purposes of processing the project proposals. The SAMRC will process this personal information strictly in accordance with POPIA. The SAMRC undertakes specifically to process the personal information on the basis that (a) it was provided voluntarily and (b) the information will be processed only as far may be necessary and within the limitation and ambit of the purpose of evaluating the research proposal/application for funding (*i.e. the purpose with which the personal information was received*). The SAMRC confirms that it is lawfully processing the information since the purpose of processing is to seek quality research proposals for funding which the SAMRC is mandated to do in terms of Section 4 of the SAMRC Act 58 of 1991, thus the SAMRC is fulfilling its legislated and lawful mandate, and strategic objectives as provided for in the SAMRC Act.

By submitting your project proposal to the SAMRC you acknowledge and agree to the use of your personal information as outlined above.

PUBLICATIONS AND INTELLECTUAL PROPERTY

The PIs and their project teams shall jointly publish research results from the joint research project in the appropriate form and according to the standards of the DSI & SAMRC. The joint publications by the researchers will mention the funding support from the DSI and SAMRC and other participating funding agencies as appropriate.

Publications and any other intellectual properties rights generated out of the project should be jointly shared and published after mutual agreement between the collaborators. In the interest of encouraging meaningful collaborations, the collaborating parties are strongly encouraged to engage in appropriate discussions and negotiations to determine issues such as ownership of any arising intellectual properties and each party's rights and obligations under the collaboration.

Funding by the SAMRC is subject to the provisions of the *SAMRC Intellectual Property Policy* (<http://innovation.mrc.ac.za/policy.htm>) as well as the Intellectual Property Rights from Publicly Financed Research and Development Act 51 of 2008 (<http://www.info.gov.za/view/DownloadFileAction?id=94343>).

The SAMRC may require the South African PI in the future, in the event of any intellectual property being developed from the project, to sign an intellectual property sharing agreement for each project funded by the SAMRC as part of the acceptance of this grant.

WHEN IS THE CLOSING DATE FOR APPLICATIONS?

The closing date for pre-proposals is **15:00 (Moscow time) on 14 October 2021** and full proposals (by invitation only) is **February 2022 (actual date to be confirmed)**. Applications received after this date will not be considered for funding. Table 1 provides an outline of the stages and timelines for the application and award process.

Table 1. Proposed application and award timelines

Stages	Date/period
1. Publication of call	17 September 2021
<ul style="list-style-type: none"> • Deadline dates: • Joint Application Form (JAF) (link for download: http://brics-sti.org/files/JAF_BRICS_Call_2020.docx) must also be submitted by the Project Coordinator to the Call Secretariat through the online BRICS STI Framework Programme Application Management System (BRICS AMS) at http://ams.rfbr.ru/BRICS • Submitting of full proposals to SAMRC 	<p>14 October 2021</p> <p>February 2022</p>
2. Evaluation period (indicative)	March – May 2022
3. Feedback to applicants (indicative): Official grant award letter (award decision)	June - July 2022
4. Grant funding agreements finalised (indicative)	July - September 2022
5. Start date of joint projects	3 rd quarter of 2022

IMPORTANT INFORMATION

Please take note the following important information:

- i. The SAMRC will utilise the results of the peer review to determine which meritorious applications would be recommended for funding. The SAMRC may also consider additional factors such as a balance in the range of topics supported in making its final determinations;
- ii. The SAMRC may seek to verify any information provided by applicant's through independent research or by third parties approved by the SAMRC;
- iii. The SAMRC may use text, video or other visual representation submitted by applicants on the SAMRC website or on SAMRC materials for publicity and/or public awareness;
- iv. The SAMRC will provide written summaries of the review findings for those applications found responsive and submitted to the review process. Note that reviewers' names will not be shared with the applicants;
- v. The SAMRC reserves the right to amend or withdraw the RFA at any time;

- vi. Successful awards may be subject to addressing reviewer comments and/or negotiation of project plans and budget;
- vii. Grants will be paid to the institution/organization where the PI is employed, as set out in a funding agreement to be concluded between the parties;
- viii. No grant funds will be paid over until proof of the necessary ethics and regulatory approvals for the project have been provided to the SAMRC. Should the investigators fail to obtain the necessary approvals within a reasonable time period, the SAMRC reserves the right to withdraw the award.

WHERE CAN I OBTAIN MORE INFORMATION?

Please direct your requests for information and questions/queries to:

SAMRC	BRICS STI Programme
<p>Dr Niresh Bhagwandin Strategic Research Initiatives South African Medical Research Council Phone: +27 (0) 21 938 0652 email: niresh.bhagwandin@mrc.ac.za</p> <p>Ms Arlene Smith Strategic Research Initiatives South African Medical Research Council Phone: +27 (0) 21 938 0653 email: arlene.smith@mrc.ac.za</p>	<p>Mr Yaroslav Sorokotyaga Division Director International Relations Department Russian Foundation for Basic Research Tel: +7 499 941 0196 E-mail: ysorokot@rfbr.ru</p>