

Bangabandhu Sheikh Mujib Medical University (BSMMU) Research Policy and Strategy 2021-2030



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FOREWORD

Since inception when it was transformed from Institute of post graduate medicine & research (IPGMR) to Bangabandhu Sheikh Mujib Medical University by a parliamentary act, it has always been felt that apart from patient care and training the medical research should be optimized to a standard international form. More so for quite sometime the international Universities are being ranked, where the research perspective is considered as the most important phenomenon. Keeping all these things in mind the present committee was given the task to formulate a research policy & strategy of Bangabandhu Sheikh Mujib Medical University, where there will be a clear outline of the institutional goal and objective regarding the research activities which will be at par with the other international Universities, particularly the medical institutions. This strategy is formulated to keep its span for a period of 10 yrs (2021-2030) based on diamond frame work, where research governance to financing all are addressed. It is expected that with the vision of making BSMMU a champion university in the near future, the next generation physicians will get to learn life science, basic & operational research. This policy will also be the real skeleton on which the fine architecture will be erected. This strategy states how objectively the governance will be guided with the hierarchy as such along with its infrastructure, priorities, promotion, collaboration and partnership. So I think this blueprint would be a new star which will guide towards a very effective basic and translational research. I am grateful and thankful to the members for making a very comprehensive outcome based formulation of this blueprint for research policy & strategy of Bangabandhu Sheikh Mujib Medical University.

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LIST OF ABBREVIATION

BMRC : Bangladesh medical and research council

BSMMU : Bangabandhu Sheikh Mujib Medical University

CABR : Centre for Advanced Biomedical Research

CEPI : The Coalition for Epidemic Preparedness Innovations

CRO : Contract research organization

IPGMR : Institute of Postgraduate Medical Research

IRB : Institutional review board

MRC : Medical Research Council

NGO : Non-governmental organization

NIH : National Institute of Health

PI : Principal investigator

Pro-VC : Pro- Vice chancellor

R&D : Research and Development

R&I : Research and Innovation

RG : Research group

SDG : Sustainable development goals.

SOP : Standard operative procedure

TOR : Terms of reference

UGC : University grants commission

WHO : World Health Organization

BACKGROUND

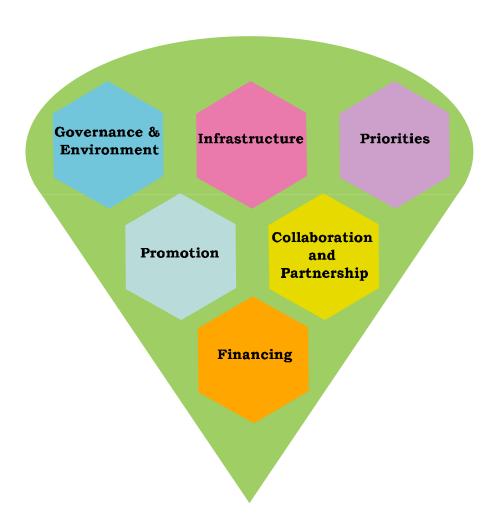
Bangabandhu Sheikh Mujib Medical University (BSMMU) is the premier postgraduate medical Institution of Bangladesh. It bears the heritage to Institute of Postgraduate Medicine and Research (IPGMR) which was established in December 1965. In the year 1998, the Government converted IPGMR into BSMMU in the name of our father of the nation.

BSMMU till to date performed the pivotal role in expanding the facilities for higher medical education in the country. It has an enviable reputation for providing high-quality postgraduate education in different specialities. The university is expanding rapidly comprising many specialities and equipped with modern technologies to deliver excellent clinical service. However, in terms of research BSMMU is lagging behind compared to national, regional and international institutions. In Bangladesh, overall the research in every field is neglected and undoubtedly medical research is far neglected. It is high time, the university formulates their research strategy and acts on this to achieve its goals, mission and vision.

Intertwine approach of institutional and translational research are essential for the sustainability of a university in a competitive world. The outcome of a successful research strategy has an enormous impact on patient choice, clinical outcome, basic & other research and translational excellence. BSMMU must now build his strengths to deliver intense and quality research which in turn bring teaching excellence, patient satisfaction, prospects for students, generation of intellectual property, and knowledge transfer from the bench to the field. BSMMU must generate evidence to guide and solve national and international emergencies, innovation and ventilate them into clinical practice. As the apex medical institute of the **BSMMU** contribute to medical country, must science through interdisciplinary research and link those to the benefits to the economy of the country via incepting a philosophy of open innovation.

We propose a research strategy for BSMMU (2021 to 2030) with a new concept of 'Diamond framework' comprising of Six (06) broad components.

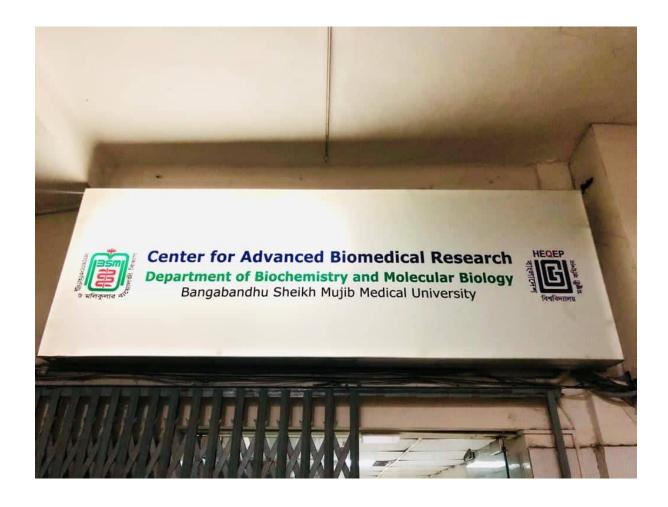
- A] Research Governance and Environment
- B] Research Infrastructure
- C] Research Priorities
- D] Research Promotion
- E] Research Collaboration and Partnership
- F] Research Financing



Diamond Framework

VISION

By 2030, Bangabandhu Sheikh Mujib Medical University will be included in the top 500 universities globally, top 200 universities in Asia and top research generating university in Bangladesh. Our vision is to create an international reputation for cutting edge research, quality teaching and innovation that dispatch notable and fundamental improvements in health and well-being.



MISSION

Our ultimate mission is to educate and train the next generation physicians, life scientists and basic researchers in an approach to translational medicine that stretches fundamental science, health and social care and to create an empathic society.

BSMMU will pursue this through multifaceted activities in research, medical education, clinical service, enterprise and innovation in collaboration with national and international partners including different ministries of Government of Bangladesh.



STRATEGIC GOALS

Our ambitions are global, national and regional progress towards our vision will be guided by the need to establish BSMMU as:

- 1. A medical university with national and global reach and impact. We believe BSMMU has much to offer and feel it is important that our people including students and scholars benefit from what we do whether that is through creating opportunities for more students (national and international) to study, by increasing the reach of the real-life impacts of research and building a stronger network through support, collaboration and innovation.
- 2. A medical university in Bangladesh leading from the front in designing and securing the medical and life science workforce of the future BSMMU should lead and contribute to the challenges facing healthcare by supporting health partners to identify, understand and meet their workforce needs and by enabling service change through research and innovation-driven improvements in treatment and practice.
- 3. A University that drives welfare of the nation and social well-being BSMMU must have to invest and collaborate in cutting edge scientific development (vaccine, therapies, drug trials and others) and establish enterprise linkage by training and using his expertise and infrastructure to create new jobs, products and services and ensure positive benefits to patients.

Research Governance & Environment

RESEARCH GOVERNANCE AND ENVIRONMENT

Research governance is the system of administration and supervision through which research is managed, participants and staff are protected, and accountability is assured. Scientific research is no longer an independent unregulated activity. The modern scientific world considers research as a highly formalized, regulated and institutionalized activity. BSMMU must ensure highly regulated and authorized scientific activity ensuring the fundamental intellectual freedom of a researcher.

Objectives

A. To ensure a research friendly environment through the highest accountability and professionalism

B. To establish a governance system and policy to provide effective support to the researchers in a best possible way

C. To strengthen, widen the scope and empowered the BSMMU institutional review board (IRB) to ensure best ethical practice of all research activities so that the participant's rights are protected and accountability is ensured.

Guidance and Actions

A. Establish a separate directorate called, 'Research and Innovation (R & I)' who will be reporting to Pro Vice Chancellor (R & D).

B. There will be a Director (R & I) who will be the administrative head of this wing and will be responsible for implementing the research policy and strategy, monitoring and evaluation and annual assessment.

C. The director (R & I) must have an excellent and notable track record of operational research and considerable publications. He or she should be the face of R & I of the university.

- D. The director (R & I) would be provided the similar facilities and resources alike other directors of the university.
- E. The terms of reference (TOR) including appointment, termination and oth ers would be set by the university syndicate alike other directors.
- F. The director (R & I) will be exercising institutional-level responsibilities and functions, while a principal investigator (PI) or a research group (RG) will take ownership and manage research in the field level. Provide dedicated technical and administrative support to PI or RG when necessary.
- G. The office of the director (R & I) will be responsible for maintaining all the documentation and communications for university ranking, showcase of university's research activities (through a website, press conference/release), supporting university based journals for smooth publication and gaining impact and help and support scientific meetings and congress in collaboration with other directorates.
- H. The office of the director (R & I) shall be responsible for generating an annual report that contains a summary of nature and scope of the main research activities ongoing at BSMMU and reflects research achievements.
- I. The office of the director (R & I) under the guidance of Pro-VC (R&D) will handle the internal grant applications and allocations, will support the researchers who won external grants and ensure a regular audit with the help of the treasurer and director (finance).
- J. The office of the director (R & I) will be act as the negotiating body of the university with different ministries and external funding bodies for possible funds.
- K. The office of the director (R & I) will ensure regular training and workshops for capacity development and resource generation.

L. The university must uphold its research autonomy as per the BSMMU establishment act and will regularly update and strengthen its IRB to ensure highly regulated and authorized scientific activity. The office of the director (R & I) must ensure that the BSMMU IRB maintain his present highest empowered regulatory authority compared to any other national bodies in the country as per the university law and protect the rights of the researcher and participant as well as ensure top level of accountability.

M. The university will develop its own research guideline like Medical Research Council, UK or National Institutes of Health, USA over time. Before that to maintain the international standard of research ethics and governance, some generic guidance such as Declaration of Helsinki and International Conference on Harmonization of Good Clinical Practice shall be followed.

N. Establish a performance metrics to measure the annual total research outcome (number of peer reviewed high impact publications, amount of local and international grants achieved, research income from existing grants, proportional increase of the number of research students and others).

Research Infrastructure

RESEARCH INFRASTRUCTURE

Research infrastructure and expansion of research facilities are the strategic focus of the majority top ranked global universities. The European commission defines research infrastructure as, "research infrastructure" means facilities, resources and related services that are used by the scientific community to conduct top-level research in their respective fields and covers major scientific equipment or sets of instruments." This also includes collection and archiving of scientific information, technology based management and innovation and to act as a harbour of background resource.

Objectives

A. To equip the university with high technological resources to undertake cutting edge research.

B. To provide an outstanding learning experience and resource generation through modern facilities and high quality training and to share knowledge with collaborative partners.

C. To provide opportunities for graduate students and researchers by enhancing number of placement and employability

Guidance and Actions

A. Immediate expansion of existing research infrastructures with improved organizational, governance and financial dimensions.

B. Increase research investments particularly in areas of basic, translational and clinical domains. The next generation research shall focus on biomedical research activities, imaging, clinical and laboratory repositories (e.g. Big data, biobanks or biorepositories), animal models and clinical trial infrastructure.

- C. A PI is the central character or core of a research activity. PIs or RG should be encouraged to bring external funds, and if he/she or a RG is successful to bring a considerable fund to the university, it is the responsibility of the university to allocate dedicated space for them to set up laboratories.
- D. The maintenance of such a laboratory should be bear by the individual grant of the PI or RG. The university will also contribute as per their convenience.
- E. BSMMU this year achieved the status of contract research organization (CRO). A clear governing structure and standard operative procedure (SOP) should be formulated so that the university can utilize this platform for resource generation.
- F. BSMMU has a 'Centre for Advanced Biomedical Research (CABR)'. This centre needs to expand in space and requires an effective sustainable plan with further investment and manpower placement.
- G. The centre should be run by a separate governing body comprising faculties who have experience in cutting edge scientific/laboratory research and holding considerable grants (internal and external) to ensure maximum utilization.
- H. The centre should have a clear SOP on how to utilize the CABR and how to ensure access to researchers of the different departments with the maximum scientific outcome.
- I. CABR should not be used for commercial purpose and the maintenance should be jointly bear by the individual PI/RG and the university. CABR could be a hub of capacity development and placement opportunities for national and international scientists.

Research Priorities

RESEARCH PRIORITIES

A successful research strategy must identify research priorities for further institutional investment. The University Administration plan their budget and priorities focusing on those areas. Prior identification of emerging research areas helps the policymakers to frame future research landscape of the university. This policy and strategic paper considered university's existing establishment capacity and reality, national and international clinical priorities before suggesting the research focus areas.

Objectives

A. To identify specific research areas for next ten (10) years where resource mobilization and enhanced investment is required.

- B. Prioritize and emphasize the research areas which are directly linked to the sustainable development goal (SDG).
- C. Four key research areas been identified and mentioned below for action.

Guidance and Actions

- A. Basic Science, which includes genomics, stem cell research, clinical immunology and bioengineering.
- B. Translational research includes biostatistics, computational science (bioinformatics), and animal modelling.
- C. Clinical research which includes development and validation of diagnostics, degenerative and regenerative medicine, clinical trials and vaccine trials.
- D. Population and public health which includes effectiveness, policy development, implementation science and health service research, outcome research, research on healthcare financing.

Research Promotion

RESEARCH PROMOTION

Promotion of research through delivering optimum support to faculties of the university is a key strategic step for successful implementation of this research policy. Supporting and nurturing a faculty from recruitment to highest level in a multifaceted way should be a pivotal element in the research policy.

Objectives

A. To create a continuous, multi-dimensional and sustainable opportunity for university faculties and other members for quality research output.

B. To ensure maximum utilization of the research and other investment of the university over the faculties in a systematic way.

C. To create equal opportunities for all and empowerment of women scientist and researchers to bring a gender balance in the university.

Guidance and Actions

A. To establish various training and re-training programs for research skill development.

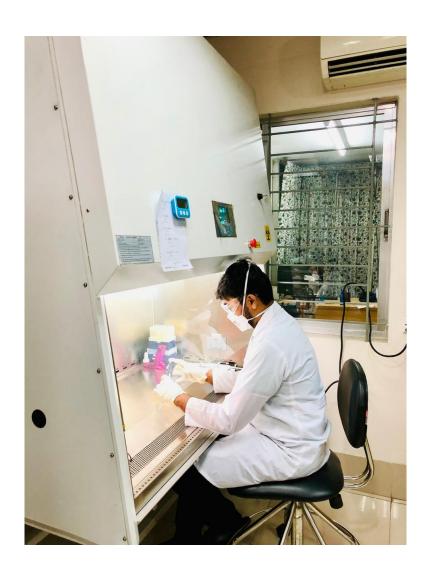
B. To design support programs through research mentorship structures for emerging and young faculties. This will help identify early strengths and research interest and could help to tune future career of an individual.

C. Provide and offer financial incentives (via competitive seed fund) for early career researchers to qualify for internationally competitive and jointly sponsored cutting edge research.

D. Establish competitive research scholar awards or fellowship programs for two to five years for fresh post-graduates to gain ability to conduct high quality research.

- E. A performance based faculty metrics (h-index, cite score, grant amount, etc.) must be established to perform research output at the individual and department level and connecting those metrics for future opportunities (promotion, allocation of grants, allocation space and others). This will undoubtedly widen and deepen the corpus of research calibre of the individual, department and ultimately the university.
- F. Provision of lucrative recognition such as "BSMMU Gold Medal", "BSMMU Silver Medal, etc. for different tiers of faculties annually for high impact publications (as first or senior/last author) or for winning big national or international grants which could immensely motivate the faculties and encourage competitive attitude amongst them.
- G. Support those researchers who have a good track record of delivery so that all existing resources and findings could be better utilized.
- H. Immediate revision of the "Research Assistant" positions of the university and set terms of reference for a job description on how they could actively contribute and conduct research and how they have contributed so far.
- I. There should be mandatory provision of masters or PhD to become a faculty and the junior faculties should be encouraged to do so phase by phase from now on starting from recruitment.
- J. To establish a mechanism to increase research staff, student ratio and create the opportunity of post-doctoral position.
- K. Establish "Research Professorship" position like other universities within the faculty or department. This would be open for renowned biomedical scientists to continue his/her research endeavour.

- L. Establish internal PhD scholarship program and revise the PhD supervisor policy for an interim period to include all current PhD holders of the university. This will increase the opportunities for interested faculties and decrease the need of supervisors from other institutes.
- M. Recognise the importance of academic freedom in determining the individual's research interest whilst also acknowledging the importance of high value research outcomes.
- N. Enhance graduate students and faculties mobility program to create further practical, clinical and entrepreneurial learning opportunities.



Research
Collaboration
and
Partnership

RESEARCH COLLABORATION AND PARTNERSHIP

The motto of research partnership and collaboration is to strengthen research potentiality, skills, aptitude and attract funding both from home and abroad. Academic partnership and collaboration are thought to mean an equal partnership between two academic faculty members, or between departments or between universities and institutes/organizations who are pursuing scientific research for mutual interest and benefit.

Objectives

A. To increase the impact of our research and improve the position of the BSMMU in global university ranking.

B. To enhance the skill and capabilities of the researchers through technology transfer and capacity development.

C. To further develop innovation and enterprise activity through national and international connection and impact.

Guidance and Actions

A. To encourage and establish research mingling amongst home partners. Potential partnerships could be inter-department, with other universities and research institutions, different ministries (ministry of health & family welfare, ministry of science & technology, ministry of education, ministry of social welfare), different directorate of health services, Bangladesh medical and research council (BMRC), local organizations, local industry and others.

B. Establish active research and development collaboration with international partners such as reputed universities, research institutes, research organizations and research industries.

- C. Publicize the research findings and research achievement of the individual faculty through a website, press conference and others to grab attention of the local and international funders.
- D. Research partnership should complement different disciplines (basic science, clinician, population and public health experts) to design, compete and conduct large scale, complex research. This could build a strong team approach for bringing large grants.
- E. Allocate and prioritize grants and other resources for translational research and discoveries in collaboration with global partners that would benefit patient care.





RESEARCH FINANCING

Research financing in a broad term is defined as any funding for scientific research, in the areas of natural science, technology and social science. The term often denotes any funding obtained through a competitive process, in which potential research projects are evaluated and only the most promising win the grant. It also covers another component where a university could generate monetary resource by delivering various research services.

Objectives

A. To attract research grants both from national and international sources and establish a congenial mechanism for the PIs to apply and avail those grants.

B. To gradually grows the research income through diversified sources in order to facilitate the university research goals and ambition.

Guidance and Actions

A. Establish a rational, transparent and collective decision-making processes around the allocation of research funds and other kinds of support for research. It will help to build a profile of a qualified researcher so that he or she can apply and win national and international grants.

B. Make the university contract research organization (CRO) active and dynamic to be major research earning source of the university. The long-term goal should act as an international hub to grab attention of the high-profile regional researchers to conduct, monitor and evaluate the research.

C. Develop a dedicated and sustained mechanism to identify potential national [University grants commission (UGC) different ministries] and international funders [World Health Organization (WHO)National Institute of

Health (NIH) Medical Research Council (MRC)] and keep a strong tie with them. The office of the director (R & I) will perform this responsibility.

- D. Attract global research non-governmental organization (NGO such as Bill & Melinda Gates Foundation, The Coalition for Epidemic Preparedness Innovations (CEPI) and other philanthropic organizations through meeting, symposium invitation, partnership program, collaboration and communication.
- E. Negotiate with the government for accelerated allocation of research budget. The office of the Director (R & I) will annually develop a research portfolio of the university highlighting major research achievements and how it relates to the SDG. The portfolio also need to highlight, how the research output is contributing to the national development agendas.
- F. Establish a professional desk/office under the director (R&I) to support individual PIs, RG to compete for national and international grants through help in preparing the grant application, formulation of the budget, etc.
- G. Identify the thrust research sectors (vaccine research, anti-microbial resistance, autism, bio-medical engineering, immunology and others) where funding opportunities would be higher and regular update and circulate those fields to the faculties to grab their attention.
- H. Establish a linkage with the industries to attract funding opportunities within the university ensuring the retention of intellectual property and fair share of commercialization benefit.

CONCLUSION

This research policy and guidance is a roadmap or blueprint to fulfil university's vision and mission of becoming the top 200 universities in Asia and top research generating university in Bangladesh by 2030. The office of the Pro-VC (R&D) under the leadership of the Vice chancellor and syndicate will be responsible for further detailing of the individual objective specific guidance and action and ensure their successful fulfilment. A bold step to comply this strategy would surely enhance the pride and prestige of BSMMU and will make it the top university of the country.

FURTHER READING

- 1. Shaw S, Boynton PM, Greenhalgh T. Research governance: where did it come from, what does it mean? J R Soc Med 2005; 98:496–502.
- 2. Hall BH. The Financing of Research and Development. OXREP 2002. Available at: https://escholarship.org/uc/item/34c1c643. Accessed on November 15, 2020.
- 3. East Metropolitan Health Service. Research strategy 2019-2022. Government of Western Australia. Available at:

 https://emhs.health.wa.gov.au/-/media/HSPs/EMHS/Documents/Research/emhs-research-strategy.pdf. Accessed on November 18, 2020.
- 4. The University of Leeds Research excellence framework 2014.

 Available at: https://ref2014.leeds.ac.uk/. Accessed on November 05, 2020.
- 5. Research Strategy 2030: University of Edinburgh. Available at: https://www.ed.ac.uk/about/strategy-2030/our-focus/research. Accessed on November 20, 2020.
- 6. Haley R, Champagne TJ. Research Strategies forAcademic Medical Canters: A Framework for Advancements toward Translational Excellence. Research Management Review 2017; 22 (1): 1-10.
- 7. SWANSEA UNIVERSITYMEDICAL SCHOOL. Continuing
 Excellence:Strategy for Growth2018 2021. Available at:
 https://www.swansea.ac.uk/media/strategy%20for%20growth%2020
 17%20-%20eng%20final.pdf. Accessed on November 15, 2020.
- 8. The W.H.O strategy on research for health. World Health Organization, France, 2012. Available at:

 https://www.who.int/phi/WHO_Strategy_on_research_for_health.pdf. Accessed on October 25, 2020.