



BIOMEDICAL RESEARCH CENTER

Slovak Academy of Sciences

Strategic plan
2017-2026

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INTRODUCTION

Biomedical Research Center of the Slovak Academy of Sciences is the largest Slovak institution devoted to basic and applied research in biomedical sciences. BMC SAS was officially established on January 1st 2016 by merge of four previously independent SAS institutes, namely the Cancer Research Institute (CRI), the Institute of Clinical and Translational Research (ICTR, former Center for Molecular Medicine), the Institute of Experimental Endocrinology (IEE), and the Institute of Virology (IV).

The principal mission of this novel research center is to foster research excellence, develop interdisciplinary approaches, and stimulate innovative potential for the improvement of our knowledge on human diseases, its better translation to clinic and more effective practical use for benefit of patients and the entire society.

BMC SAS research is focused on understanding metabolic, neuroendocrine, autoimmune and cardiovascular disorders, cancer and infections, and their interrelationships when co-occurring in the same organisms. Global biomedical research of the 21st century faces these co-morbidities as one of the key challenges of the human healthcare improvement and BMC SAS is committed to respond to this challenge and to additional scientific and societal needs through four principal goals defined below on the principles of the following priorities.



PRIORITIES

- **High research quality, international recognition and reputation**
- **Culture of excellence and enthusiasm**
- **Integrity, identity and collegiality**
- **Interdisciplinarity, innovation and transfer of knowledge**
- **Networking across BMC and with outstanding teams and institutions in Slovakia and abroad**
- **High quality of education and training of students and young researchers**
- **Equal opportunity in recruitment and personal development, career promotion of young-middle generation based on research performance**
- **Visibility to public and decision-making authorities with impact on healthcare and society**
- **Economic stability, sustainable development of infrastructure and good working conditions**



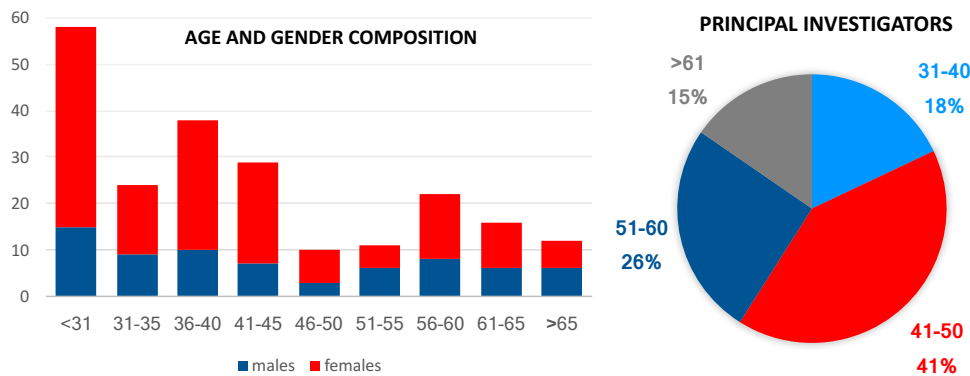
SITUATION ANALYSIS

The BMC SAS is now in the second year of its existence. The initial period was marked by the movement of CRI, ICTR and IEE to the new building in the neighborhood of IV, by the acquisition of all necessary legal approvals for conducting research in new space and new institutional frame, by the basic formation of the BMC's structure and creation of common rules for its functioning. Administrative and technical staff was subjected to independent external audit and reorganized to better support research activities, new rules for evaluation of individual researchers were approved by the BMC's Scientific board and first time implemented by the BMC's Managing board. The institutes of the BMC SAS were separately evaluated based on past period's performance by the Accreditation panel of the foreign experts nominated by the SAS Presidium and were classified in the categories B (IV and IEE): "The research is visible at the European level. The institute has made valuable contributions in the field in Europe" and C (CRI and ICTR): "The research is solid and has contributed to the understanding in the field at the European level. The institute is nationally visible." In all four evaluation reports, the Accreditation panel depicted strengths of the institutes, particularly in key research topics, in human and technical infrastructures and in enthusiastic young-middle generation, and underlined the need of re-design, horizontal integration and great potential of the merged BMC SAS institution to advance, quoted as: "BMC has the chance to act as an example of the future development of science in Slovakia". Very recently, BMC SAS participated in Alliance4Life H2020 project proposal of ten partners from nine EU-13 countries aimed to work jointly towards closing the EU divide in health R&I. The project received outstanding evaluation from the European Commission and is in the stage of Grant Agreement preparation. This creates an excellent opportunity for BMC SAS to learn best practices and improve strategic actions under the guidance of highly professional experts.

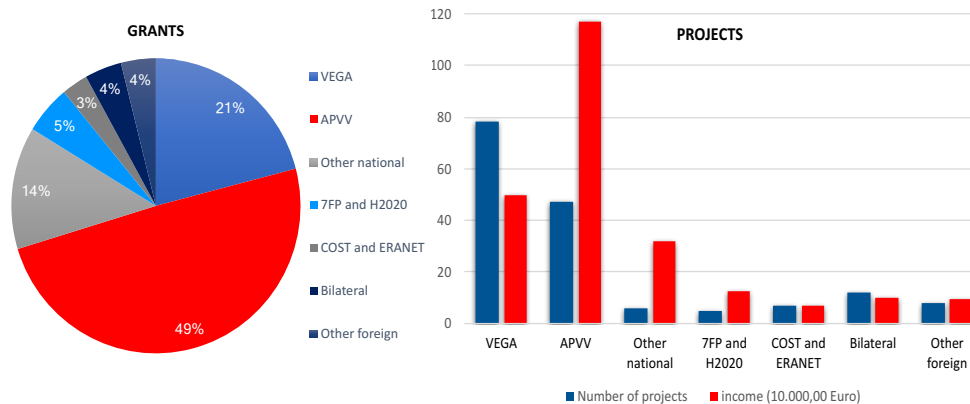
Starting position for the progress monitoring is defined by data included in the first common 2016 Annual report of the BMC SAS that summarizes the status of personnel, research outputs and other achievements.

The report shows the following facts:

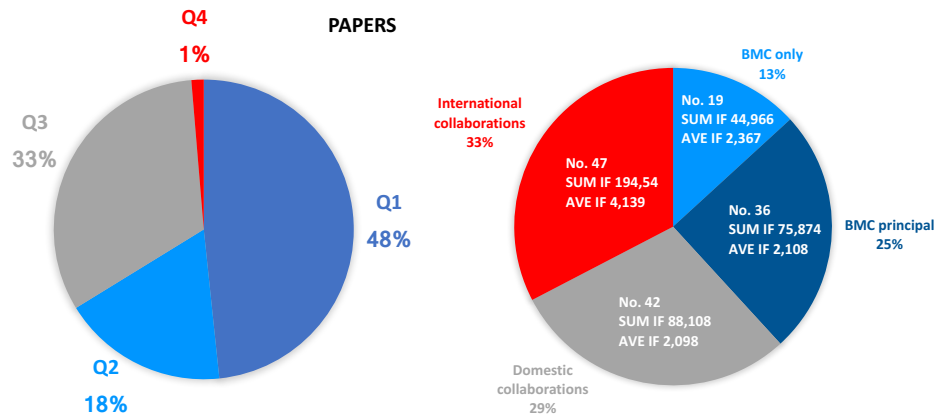
- Generation gap in the middle-age categories of researchers who are the major proposers and principal investigators of successful projects.
- Gender imbalance in favor of female researchers and supporting personnel, contradictory to gender imbalance in favor of males in higher academic and pedagogical degrees and titles.



- Current research funding predominantly from national projects, mainly those granted by APVV (Slovak Research and Development Agency).
- Relatively low number of currently funded EU projects.



- Only 48% of research papers in the journals of the first quartile according to SJR factor (SCIMAGO source).
- Higher average impact factors of the journals publishing BMC’s co-authored papers with international collaborations compared to the journals with papers authored by BMC researchers only, and lowest for the journals with papers resulting from domestic collaborations.
- High proportion of papers in the journals with low to moderate impact factors (63,7% with IF<3, average IF 3,039).



Additional data and more details on actual BMC’s situation are included in the 2016 Annual Report.

STRATEGIC GOALS

- **Enhance research quality and reach leading position in biomedical research in Slovakia**
- **Improve national and international visibility and reputation**
- **Increase transfer of knowledge and serve society**
- **Secure sustainability and foster progressive development**



IMPLEMENTATION PLAN

Actions to enhance research quality and reach leading position in biomedical research in Slovakia:

- Consolidate the BMC's structure and functioning through re-design of research departments, core facilities and supporting units, elaborate internal selection criteria for leading positions.
- Reduce research fragmentation via formation of larger research groups focusing on progressive core research topics, improve quality and impact of research outputs.
- Build specialized units required for up-to-date fundamental and translational biomedical research, including Laboratory of Bioinformatics and Research Clinic.
- Elaborate internal rules for recruitment and personal development based on equal opportunity ethics.
- Elaborate principles and profile of staffing and introduce systematization of research and supporting positions, maintain balance in development of BMC's institutes, while allowing promotion of best performing research groups.
- Elaborate principles for admission and incorporation of new partners into BMC's structure and functioning in order to generate an added value effect.
- Develop incentives based on regular evaluation of individual researchers and research teams using criteria approved by the Scientific Board of the BMC SAS.
- Promote career of the best performing researchers, support applications for academic degrees, memberships, nominations for awards and honors, create internal awards and recognitions.
- Promote career of starting young researchers and elaborate carrier path plans.
- Elaborate internal selection criteria for supervision of PhD students and for PhD students themselves, in order to increase quality of scientific education of future young researchers.
- Establish Board of Young Researchers advising BMC's management on career development, research focus and working conditions of PhD students, postdocs and young research fellows, on award of internal projects, mobility and nominations.
- Establish External Scientific Advisory Board of world-recognized experts and cooperate with them in key aspects of evaluation and decision-making towards promotion of excellence.

Actions to improve national and international visibility and reputation:

- Expand cooperation with national and foreign academic, clinical, public, governmental and/or industrial partners supported by new common projects, collaboration agreements, MoUs and support letters.
- Identify and refresh contacts with international alumni and where possible strengthen mutual communication and/or cooperation.
- Submit increasing number of prestigious projects and fellowship applications, increase quality of submissions, and reduce weakly funded (non-profitable) projects.

- Dedicate part of BMC's budget to young-researchers' committed internal projects and travel grants for workshops, courses or fellowships in order to boost skills, education, fellowships and mobility.
- Improve operation of BMC's Editorial offices, increase quality and access of edited journals and establish editorial and publishing house of BMC SAS.
- Increase relationships and collaborations with relevant national and international foundations, professional networks, consortia and societies.
- Actively participate in the Alliance4Life consortium.
- Increase recognition via introduction and frequent updating of highly informative web page, PR activities, create position of PR manager, improve communications with media and public presentations of BMC's research activities.
- Generate visual identity of BMC SAS and consistently use insignia of BMC SAS and its institutes (logo and defined visual components) in all presentations at national and international events.
- Advertise BMC SAS and its institutes at all relevant occasions to research community, expert and lay public.

Actions to increase transfer of knowledge and serve society:

- Upgrade IP protection and licensing strategy and elaborate rules for invention development and transfer to practice supported by internal documents and forms, introduce systematic use of Material transfer agreement when providing specific research reagents upon request and protect pre-existing know-how in all project applications with external partners.
- Elaborate rules for spin-off activities, and support establishment of spin-off companies.
- Establish and drive the first Slovak Centre of Obesity Management as a lead model in Slovakia.
- Enlarge spectrum of specialized applied research services to clinics, commercial partners and public.
- Increase engagement in teaching and education at universities and secondary schools, intensify active reactions to actual healthcare problems by providing advises and expert opinions to public through media or web page.
- Strengthen the role of BMC as an external PhD education institution by new partnerships with relevant faculties/universities.
- Develop and introduce system of attracting both domestic and foreign undergraduate and PhD students to BMC's research topics.
- Design education and training program for PhD students based on EC Principles for Innovative Doctoral Training, offer acquisition of diverse technical skills and experiences through rotation across departments and/or core facilities, and participation in workshops and courses at BMC SAS.
- Increase recognition by legal and decision-making authorities through active participation in strategic bodies and advisory committees, and by providing excellent and timely expert opinions.

Actions to secure sustainability and foster progressive development:

- Elaborate all internal documents and operational rules necessary for fluent transformation of the BMC SAS into Public Research Institution.
- Elaborate incentives motivating BMC's researchers to develop and sustain internal collaborations across BMC's research departments and research groups in order to foster collegiality, interdisciplinarity, internal relationships and common projects.
- Aid researchers in project submission, administration and implementation via support from project, economic and legal units, create positions of lab managers affiliated with research departments.
- Support sustainability and improve functioning of state-of-art core facilities serving both internal and external researchers and capable of performing contract research with commercial partners, through regular revision of used-against-total running time of machines and engagement of experts in core facilities, elaborate cost-model and rules for operation of core facilities and other special infrastructure and equipment in order to create reserve budget for machine services, repairs, and upgrading.
- Secure technical and financial sustainability and optimize economy by effective planning and flexible adjustment of income versus costs in the context of unstable national research-related economic environment and unpredictable funding opportunities.
- Increase proportion of income from external sources, including research grants, research contracts and IP licensing.
- Regularly monitor performance and progress against the accomplishment of the above-described actions and against the trend of measurable progress indicators listed below.
- Adjust and continuously update the strategic plan in collaboration with Allaince4Life and External Advisory Scientific Board in order to meet actual internal needs, respond to external conditions, and improve progress.



MAIN PROGRESS INDICATORS

Number of total research publications in journal indexed in WOS, Scopus or Scimago / year

Number of total research publications in journal indexed in WOS, Scopus or

Scimago / actual FTE / year

Number of publications in journals with impact factor / year

Number of publications in journals with impact factor / actual researchers' FTE / year

% of publications in journals with impact factor > 3 / year

% of publications in journals with impact factor > 3 / actual researchers' FTE / year

Number of WOS or Scopus citations / year

Number of WOS or Scopus citations / actual researchers' FTE / year

Average impact factor

Cumulative IF

% papers in Q1 journals

Impact factor of journals edited by BMC

Q ranking of edited journals (SJR factor according to Scimago)

Average age of project researchers

Average age of PIs

Number of MD researchers

Number of DSc/prof researchers under 50 years of age

Number of short-term international fellows

Number of long-term international fellows

Number of core facilities with the service program for internal and external clients

Number of spin-offs

Number/volume of prestigious international projects

Number/volume of research contracts with clinics, industrial or private partners

Number of domestic research partners

Membership in EU-level alliances and/or consortia

Number of international scientific events hosted at BMC SAS/year

Number of BMC's researchers invited to talk at international scientific events/year

Number of inventions, patents, and license agreements

Number of PhD applications

Number of defended PhD theses

Number of postdoctoral fellows

Number of postdoctoral fellows with external funding

Number of activities and events for public, number of engaged BMC employees



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