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National Recovery and Resilience Plan



OF THE REPUBLIC OF BULGARIA

Sofia University - Marking Momentum for Innovation and Technological Transfer Vision, Achievements, Challenges. An Overview Prof. Vasil Marinov

Main topics addressed:

- How the funding and implementation of SUMMIT became possible?
- What is SUMMIT?
- What are the vision and priorities of Sofia University addressed by SUMMIT?
- Why it is important for Sofia University?
- How will this be achieved? What are the main activities within SUMMIT?
- What is the progress in implementation?
- What are the challenges for the future?

How the funding and implementation of SUMMIT became possible?

A fit between the internally recognized needs and the objectives of the procedure for granting funding from the Recovery and Resilience Plan

- The purpose of the procedure is to pilot a new model for the development of research universities, by financing the elaboration and implementation of Strategic Research and Innovation Development Programs in order to:
 - increase their participation in international and national programs
 - to support the realization of the scientific and economic potential of the country and its regions
 - to foster the partnership between academia and industry
- The internally recognized needs in short include enhancing the research profile, capacity and results as well as the capacity for commercialization of results of Sofia University



What is SUMMIT?

- Although labeled as a project, SUMMIT is by its nature a complex program comprising a large number of relatively independent but strategically linked projects and complementary activities
- This is the **STRATEGIC RESEARCH AND INNOVATION PROGRAMME FOR DEVELOPMENT** of SOFIA UNIVERSITY
- Total budget: 44 000 000 BGN (22 mln. EUR)
- Duration: 42 months (01.01.2023-30.06.2026)

Vision and priorities of Sofia University as presented in the Strategic Programme

Vision (Strategy for the Development of Human Resources in Science and Innovation at Sofia University)

To create an environment favourable for attracting, engaging, and developing talented researchers, who will contribute to establishing Sofia University as an educational, scientific and cultural centre of pan-European importance, as well as assist in achieving top scientific results, which contribute to the well-being of society and the Bulgarian nation.

Goal (Mandate program)

To strengthen the competitiveness of Sofia University, including through high-quality scientific results oriented to the needs of society

Key priorities – investments in :

- Leading scientific research and development, satisfying the demand and needs of society and economy
- Physical environment and infrastructure facilitating the conduct of scientific research according to established international standards

Practical steps:

- Fostering publication in scientific journals with an impact factor/impact rank and included in the global referencing, indexing and evaluation system
- Expanding the relationship with the business and conducting applied research
- Introducing incentives that tie funding to the results of scientific work

The successful implementation of the programme is of crucial importance for achieving the goals and contributing to the development of Sofia University

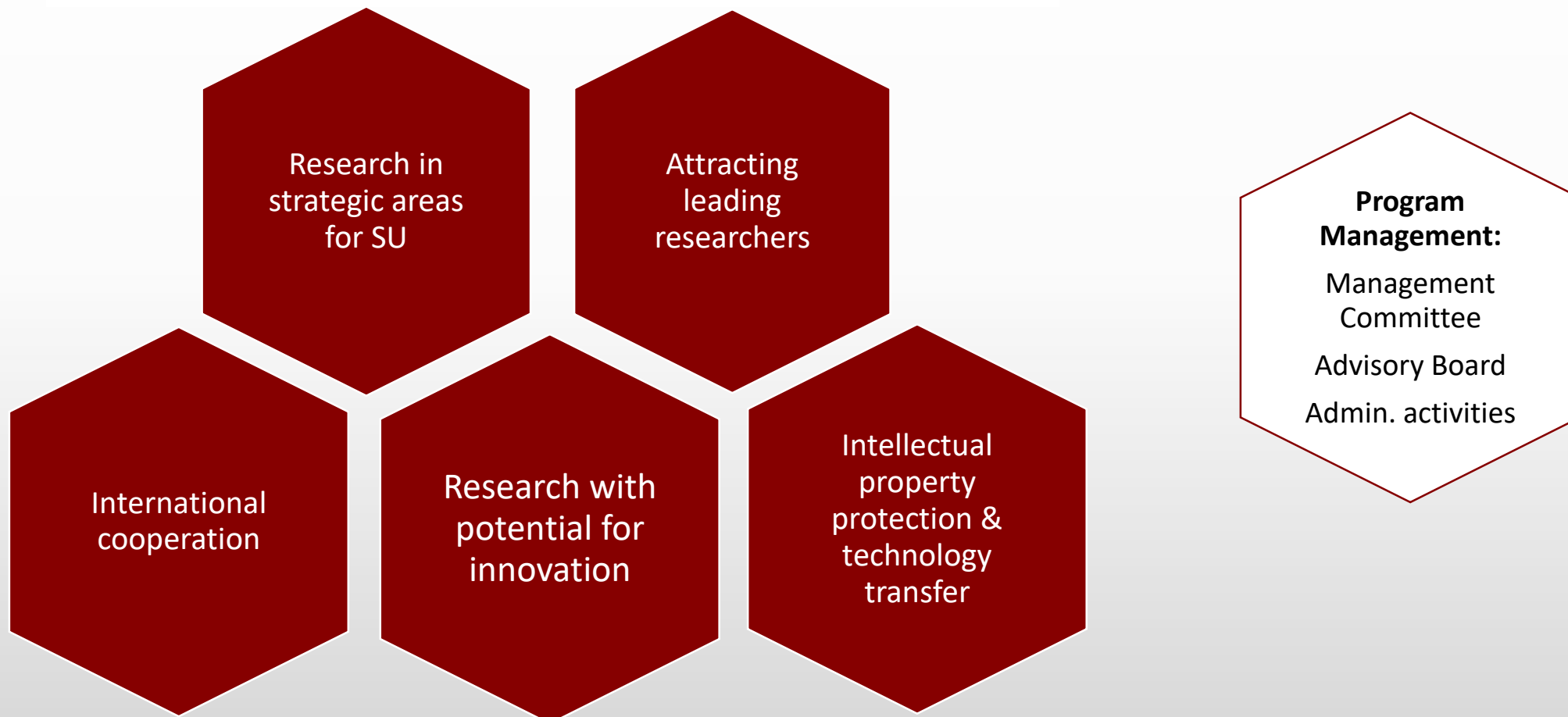
Why SUMMIT is important for Sofia University? Expected impact

- Increased quantity and quality of scientific research
- Improved visibility - publications in renowned international databases
- Increased patent activity and promotion of applied research
- More young scientists with advanced research qualifications
- Extended international cooperation (participation in scientific networks)
- Attracted external funding and industry support
- Improved research infrastructure
- Improved position in international university rankings

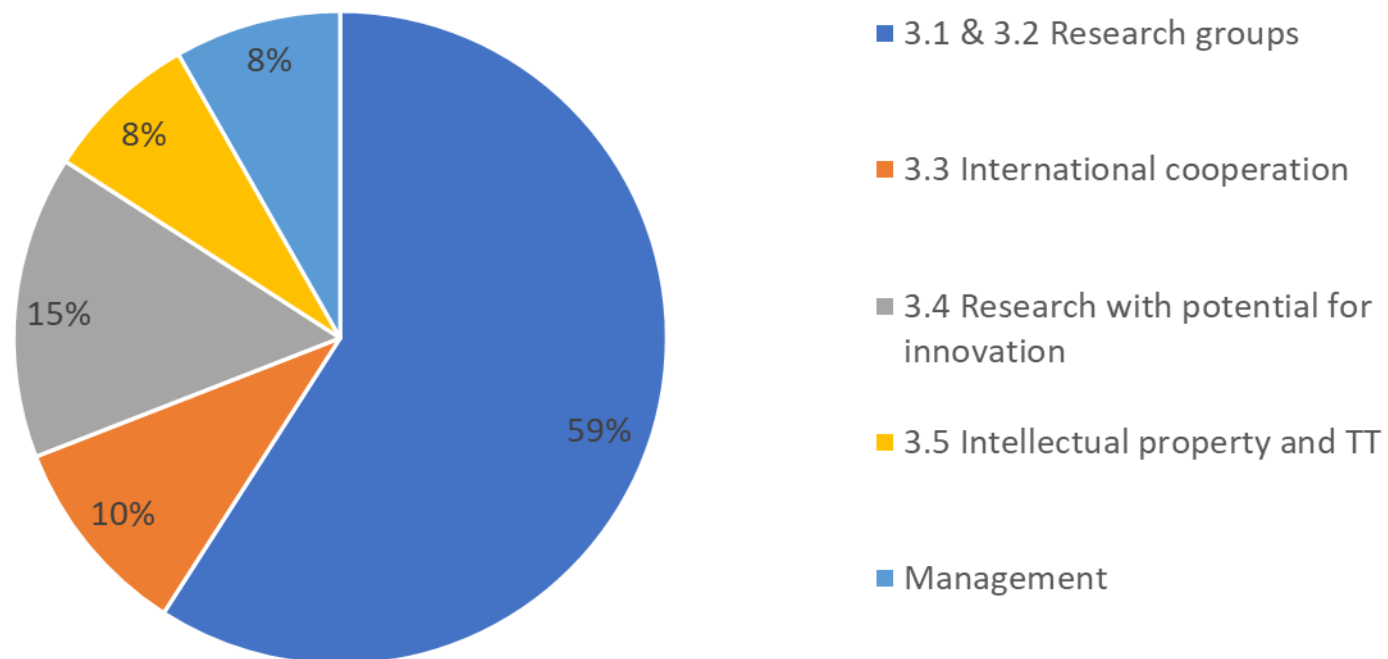
Too early to talk about the real impact - but an idea for SUMMIT contribution can be gained from its scope and scale:

- SUMMIT work is closely woven into the overall day-to-day activities of SU, particularly the management of research activities, human resources, international activities, financial management and accounting
- 650 people have been directly involved in the SUMMIT implementation so far, this is equivalent to about 20% of SU staff in 2024 and about 35% of the academic and research staff
- The average annual budget of SUMMIT is equivalent to nearly 9% of the total expenses of SU for 2024 and nearly 7 times larger than the transfer from the state budget for research and publishing activities
- The average annual expenses for business trips of SUMMIT are equivalent to more than 30% of the expenses for business trips abroad of SU
- The average annual capital expenditure is 1.7 times the transfer from the state budget for capital expenditure for SU

How will this be achieved? Main activities



Structure of the budget by activity



- **Activity 3.1: Research directed towards scientific areas strategic for Sofia University**
- 17 scientific groups in sub-areas of physics, chemistry, medicine, biology, environment and earth sciences, mathematics, informatics, humanities, education, social sciences, economics divided into two types
 - 14 groups of leading scientists from Sofia University in priority areas, which have the highest scientometrics results, according to renowned international databases (Web of science, etc.)
 - 3 groups working on interdisciplinary topics, which have the potential to significantly increase the research capacity and results of Sofia University - in the field of humanities, social and economic sciences and psychology
- The work is carried out based on approved scientific programs that are part of the funding application
- Budget for 3.1 – BGN 20,5 million
 - Per group – 1.1 – 1.8 million
 - Distribution by the leading scientist depending on the specific needs

No	Group Name	Lead Researcher	Subject
3.1.1.	Mathematical Physics and Astrophysics	Prof. Stoycho Yazadzhiev	Physical Sciences and Mathematics
3.1.2.	Active formulations and materials	Prof. Slavka Tcholakova	Soft matter
3.1.3.	GROWTH	Dr. Tsvetelina Velikova	Medicine, immunology, public health
3.1.4.	AQOT	Prof. Nikolay Vitanov	Quantum technologies
3.1.5.	Computational heterogeneous catalysis	Prof. Hristiyan Aleksandrov	Application of quantum chemical methods for the study of catalytic systems and reactions on them
3.1.6.	BAV (Biologically Active Substances)	Prof. Ivo Grabchev	New photosensitive compounds with sensing and bioactivity
3.1.7.	Functional materials	Prof. Tony Spassov	New functional materials for clean energy and environment
3.1.8.	Plant parasites	Assoc. Prof. Lyuben Zagorchev	Biology of parasitic plants
3.1.9.	GAMMA	Assoc. Prof. Mladen Savov	Random processes

No	Group Name	Lead Researcher	Subject
3.1.10.	DigitalEdu-SU	Prof. Roumiana Peytcheva-Forsyth	Digital education
3.1.11.	Algology	Assoc. Prof. Blagoy Uzunov	Algae, algae cultures
3.1.12.	Intelligent systems	Prof. Ivan Koychev	Artificial Intelligence
3.1.13.	Climate, Weather and Natural Risks (CW&NR)	Assoc. Prof. Guergana Guerova	Earth and related environmental sciences
3.1.14.	Nuclear	Assoc. Prof. Krasimir Mitev	Experimental nuclear and sub-nuclear physics and technology
3.1.15.	European Values and Social Challenges (EuVaSC)	Prof. Maria Stoicheva	Social Sciences
3.1.16.	Digital Humanities. ICT applications for History and Language	Prof. Anna-Maria Totomanova Assoc. Prof. Maria Baramova	Digital Humanities
3.1.17.	Digitization of SMEs	Prof. Desislava Yordanova	Digitization, small and medium enterprises

Activity 3.2: Attracting leading researchers in the scientific areas strategic for Sofia University

- The goal is to attract world-class scientists who can complement the existing research capacity, to set high standards for scientific results and to raise to a new level the overall scientific activity of Sofia University
- 5 research groups in strategic areas such as mathematics, chemistry, biology, physics and psychology, with leading Bulgarian scientists from universities in the USA, France and the United Kingdom, as well as from the business - from Germany and Bulgaria.
- The work is carried out based on approved scientific programs that are part of the funding application (as in Activity 3.1)
- Budget for 3.2 – BGN 5.5 million
 - Per group – 1.1 million
 - Distribution by the leading scientist depending on the specific needs (as in Activity 3.1)

No	Group Name	Lead Researcher	Subject
3.2.1.	NATATA	Prof. Boyan Popov	Numerical Analysis and Theory of Approximations
3.2.2.	ZeoNeo	Prof. Valentin Valtchev	Zeolite materials for new applications
3.2.3.	New materials and photonics	Dr. Sotir Chervenkov	Development, characterization and applications of new materials for photonics
3.2.4.	Microbiological risks in the environment	Dr. Sergei Ivanov	Wastewater-based epidemiology (EWS)
3.2.5.	NUDGE: Behavior models, attitudes and Policy implementation for sustainable development	Prof. Ivo Vlaev	Behavioural Science

Results reported for activities 3.1 and 3.2 as of 31.03.2024

- All research groups were formed already in the initial phase of implementation – 22
- Recruitment is largely done
- A total of 263 scientists working on the scientific programs in activities 3.1 and 3.2, incl.:
 - 18 leading and 5 attracted scientists
 - 55 young scientists
 - Other 193 team members
- 10 agreements for participation in international scientific networks and bilateral cooperation signed
- 8 agreements with the industry signed

More specifics results will be reported shortly today and in details tomorrow

Activity 3.3 International cooperation in the scientific areas strategic for the University

- Creates opportunities and conditions for international cooperation and increasing the scientific expertise of scientists who are not part of the research groups (activities 3.1 and 3.2)
- Funding is provided based on motivated application for:
 - Short-term specializations of researchers abroad
 - Participation of University scientists in conferences, seminars, etc.
 - Short-term research visits to laboratories, libraries, etc.
 - Attracting foreign guests from universities or business abroad
 - Organisation of scientific conferences, seminars, schools, etc. with external participation
- Budget - BGN 4.4 million (10%), allocated between faculties and departments based on objectively verifiable indicators

Results reported for activity 3.3 as of 31.03.2024

- Procedure for selection and implementation of activities for international cooperation
- Package of documents for outgoing and incoming mobility
- Methodology for the distribution of funds by faculties and departments
- 219 mobilities carried out, including 198 outgoing and 21 incoming

Activity 3.4: Research with potential for innovation or knowledge transfer/intellectual property

- Provides support to projects that do not fall into the scientific programs of established research groups
- These projects are expected to produce significant and visible results necessary for knowledge transfer through intellectual property protection or have the potential for innovation. All profits from these activities are reinvested in the university's core activities or infrastructure
- Projects are selected on a competitive basis according to the requirements of the call for proposals
- Budget for activity 3.4 - BGN 6.6 million (15%), allocated between faculties and departments based on objectively verifiable indicators

Results reported for activity 3.4 as of 31.03.2024

- Adopted methodology for allocation of funds, application, ranking and reporting of projects
- Developed package of documents for application, evaluation and ranking of project proposals
- Formed scientific commissions by faculties and departments to apply the procedures
- Two project selection sessions successfully held
- 90 projects have been approved and contracts were signed, including 5 for patent applications
- All funds for activity 3.4 are already contracted

Part of the more specific results of projects contracted in 2023 are presented on posters outside

Activity 3.5: Intellectual property protection and technology transfer

- Provides support to scientists from the Research Groups, as well as all other scientists at the University to be able to protect their intellectual property and to apply for patents
 - through trainings, consultations, support for the entire patent application process
- Works to establish an integrated system for technology transfer and university entrepreneurship at Sofia University
 - applying a more centralized model for commercialization of the University's research results and intellectual property objects
 - with unification of functions and competences of already established structures at the University level and the use of the expertise available

Results reported for activity 3.5 as of 31.03.2024

- Prepared forms for assessment of innovative capacity and preliminary research for patent purity
- A draft Regulation for industrial property of Sofia University
- Analyzes and consultations with researchers from Sofia University to determine the patentability of their scientific product
- Six trainings in the field of intellectual property protection and technology transfer

Progress in terms of performance indicators

Indicator	Specification	Target value	Achieved by 31.03.2024	%
Quality of research in the proposed sectoral specialization	A 20% increase in the number of publications (WoS) at the end of the period on an annual basis compared to 2020	1066	125	12%
Patent activity and applied developments	New international patent applications	8	0	0%
High qualification of personnel in the areas of sectoral specialization	Number of leading researchers to create or develop Research Groups	23	23	100%
Attracting young scientists and improving their qualifications for conducting applied scientific research	Number of young scientists who took part in research funded under the programme	23	55	239%
Attracted external funding and industrial support	Signed agreements with industry	5	8	160%
International activity and participation in networks	Signed international agreements	5	10	200%

Progress in terms of financial absorption

	As of 31.12.2023	As of 31.03.2024	% as of 31.03.2024
Actually spent	4 809 407	7 881 149	17,9%
Reported	3 197 301	4 250 374	9,7%
Veryfied	3 197 301	3 197 301	7,3%

Good news - for the last quarter, actual spending increased by 64% compared to the entire first year



What are the challenges for the future?

1. Related to the substantial activities

- To generate truly significant scientific results
- To speed-up implementation and to ensure that what is promised will be delivered:
 - Publications
 - Patent applications
 - International cooperation - mobilities (significant disparities between faculties are observed)
 - Supplies (public procurement)

What are the challenges for the future?

2. Related to the reporting to the monitoring and reporting structure (IA Education)

- To ensure timely regular reporting
- To speed-up the reporting, verification and reimbursement of expenditures
- To prepare well for the elaboration of the interim report (November 2024) which is essential for the further funding

3. Related to the internal monitoring and control and administrative activities

- To improve the internal monitoring system to be able to track in a timely manner the progress and changes by activities and research groups:
 - Results and indicators' target values
 - Actual expenditures
 - Human resources, etc.
- Tighter control for timely reporting of business trip expenses



SOFIA UNIVERSITY -
MARKING MOMENTUM
FOR INNOVATION AND TECHNOLOGICAL TRANSFER

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OF THE REPUBLIC OF BULGARIA

**Thank you
for your attention**

