



Science Fund
of the Republic of Serbia

Annual Report **2021**



Annual Report 2021

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Acknowledgments

Science Fund of the Republic of Serbia (hereinafter referred to as the: “Science Fund”) extends its gratitude to the Prime Minister of Serbia, Ana Brnabić, the Minister of Education, Science and Technological Development, Branko Ružić, and to our colleagues from the Ministry, the members of Scientific Council, the Supervisory and Management Board, the Serbian Academy of Sciences and Arts, the Scientific and Research Organizations (SROs) across the Republic of Serbia, representatives of research funding agencies across Europe, as well as the representatives of the World Bank and European Union Delegation to the Republic of Serbia for all their support in the development of our institution.

Financing for Science Fund is provided by the Republic of Serbia (Ministry of Education, Science, and Technological Development), a World Bank loan with implementation support, and the European Union grant.

Science Fund is also thankful to the scientific community for taking such a high interest in its work and Programs for participating in all interactive and fruitful discussions. Most of all, the Science Fund would like to commend all the scientists, researchers, and other participants for taking the time and effort to apply for support with their project proposals. This was a learning experience for all of us, and finally, Science Fund’s work is aimed for the benefit of the scientific community, national and international, as well as for the benefit of society at large.

Our thanks also go to all Project Peer Reviewers, Program Board members, advisors, consultants, and all of those who have contributed to the work of Science Fund with their constructive comments, suggestions, and feedback.

Finally, all of this would not have been possible without the hard work of the Science Fund’s team, which has been working with outstanding commitment and dedication to helping achieve so much since the Science Fund’s establishment.

About the Science Fund

Science Fund of the Republic of Serbia is a public organization that supports scientific and research activities. It was established in March 2019 to provide funds and support the conditions for the continuous development of scientific and research activities in the Republic of Serbia necessary for the advancement of a knowledge-based society. The work of the Science Fund contributes to the strategic objectives of scientific and technological development of the Republic of Serbia.

Science Fund's Programs are devised to support research activities, including basic scientific research and applied scientific research and their commercial use and potential, as well as to boost the technological development of the Republic of Serbia.

Science Fund's Programs also focus on developing human resources, encouraging international cooperation, collaboration, and exchange, investment in the infrastructure of Scientific-Research organizations in the Republic of Serbia by providing equipment and core support and assisting the development of laboratories and institutions of the strategic importance. In addition, the Science Fund supports the publishing of scientific research and development (R & R&D) findings and results in internationally acclaimed publications and those of strategic importance for the Republic of Serbia.

The Programs are established on identified needs of the Republic of Serbia and the scientific community. They are based on the Strategy of Scientific and Technological Development of the Republic of Serbia, Smart Specialization (SS), and other relevant sectoral strategies to contribute to the advancement of a knowledge-based society.

Science Fund's Programs have been designed for the benefit of public and private research and development institutions, including SROs and their respective institutes, universities, and faculties across the Republic of Serbia, individual scientists and researchers (in the Republic of Serbia and in the diaspora), as well as private sector enterprises and investors.

Science Fund's Programs are driven by scientific excellence and quality. They are realized through thematic Public Calls for Project Proposals, and Projects are funded in the form of grants through public competition. Project duration varies from Program to Program, spanning from 1 year or less to a maximum of four years. The Projects are expected to provide high-level research, innovative results, competitiveness at the international level, and relevance to society in general.

Our Mission

“

The primary mission of the Science Fund is to support scientific, R&D, and technological projects that are based on scientific excellence and quality.

”

Our Vision

“

The vision of the Science Fund is to promote the social, technological, cultural, and economic development of the Republic of Serbia by financing scientific and R&D projects.

”

To achieve its mission and vision, as well as to effectively devise, implement, monitor, and improve its Programs, Science Fund has been carrying out consultations with all major stakeholders including, but not limited to, the Ministry of Education, Science and Technological Development, the Cabinet of the Prime Minister of the Republic of Serbia, representatives of SROs, members of the scientific community in the Republic of Serbia, research organizations, individual researchers, former and current participants in Horizon 2020 Calls for Projects Proposals, representatives of the European Research Council (ERC), as well as representatives of other funding agencies from European countries. In addition, consultations are continuously held with Science Fund's Scientific Council and its Management Board, carried out as part of Science Fund's internal procedures.

#trustinscience

Timeline

2019

- December** Law on Science Fund of the Republic of Serbia
- March** Establishment of Science Fund of the Republic of Serbia.
- April/May** Constitution of the Science Fund decision-making bodies.
- June** Public Call for the first pilot program – Program for excellent projects of young researchers (PROMIS).
- July** New Law on Science and Research. National institutional funding has been established.
- November** Public Call for the Serbian Science and Diaspora Collaboration Program. Public Call for the Program for Development of Projects in the Field of Artificial Intelligence.
- December** Project SAIGE (Serbia Accelerating Innovation and Entrepreneurship Project) – Collaboration between the Government of the Republic of Serbia, the World Bank, and the European Union, dedicated to improving the excellence of scientific research in Serbia, has been approved.

2020

- March** PROMIS grant award ceremony – 59 projects approved for funding. Public Call for the IDEAS Program.
- May** Public Call for the Special research program on COVID-19.
- July** Monitoring implementation for Program PROMIS – 59 projects.
- September** Monitoring implementation for the Program for Development of Projects in the Field of Artificial Intelligence – 12 projects.
- December** Monitoring implementation for the Serbian Science and Diaspora Collaboration Program – 92 projects. Beginning of project implementation for the Special research program on COVID-19 – 14 projects.

2021

- January** Monitoring implementation of 177 research projects.
- June** The project evaluation of 789 project proposals.
- December** Selection of 105 projects for funding within program IDEAS.
- December** Became a member of the Science Europe organization.

2022

Organization and Decision-making Bodies

The Science Fund's Team

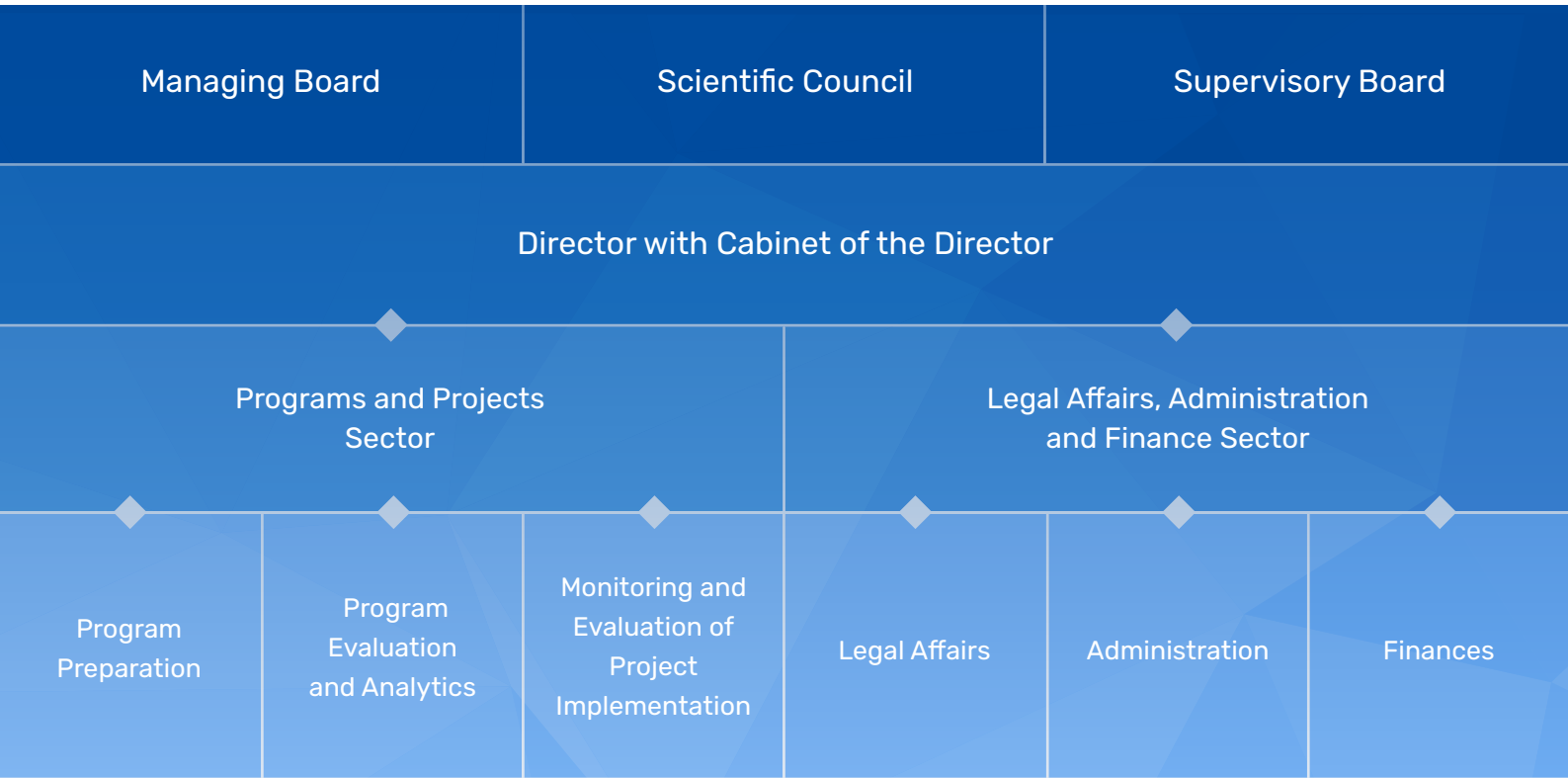
Science Fund's team consists of highly motivated people coming from a range of different areas of expertise. Since its establishment, Science Fund has been growing, continuously building its team and professional capacities.



Acting Director

Dr. Milica Djurić Jovičić
Senior Research Associate

Organizational Structure



Managing Board

The Managing Board consists of a chairperson and four members. The Management board's role is to adopt general acts of Science Fund, its Programs, annual work programs, and financial plans, reports on performed activities, rules of procedure, as well as other procedures, as defined by the Law on Science Fund.

Dr. Vujo Drndarević

Chairman of the Executive Board
School of Electrical Engineering
University of Belgrade
Retired Professor

Dr. Vladan Vuletić

Member of the Executive Board
Massachusetts Institute of Technology,
Cambridge, MA, USA,
Professor

Dr. Momčilo Pavlović

Institute for Contemporary History
University of Belgrade
Principal Research Fellow

Mr. Gordana Danilović – Grković

Member of the Executive Board
Science Technology Park Belgrade
Acting Director

Dr. Jovan Babić

Member of the Executive Board
Faculty of Philosophy
University of Belgrade
Professor

Scientific Council

The Scientific Council of Science Fund is the highest expert and advisory body of Science Fund.

The Scientific Council consists of 15 members, representatives of the scientific community: two representatives from each of six scientific fields – natural sciences and mathematics, technology and engineering sciences, medical sciences, biotechnical sciences, social sciences and humanities, two members from industry, as well as one member proposed by the Serbian Academy of Sciences and Arts, concerning gender equality. Its members are internationally recognized in their respective scientific fields, whereas at least two thirds hold the highest scientific or teaching title.

The Scientific Council's role is to provide expertise in designing Science Fund's Programs, operations, procedures, and Public Calls, as well as to define procedures and monitor the implementation of Science Fund Programs.

Academician Stevan Pilipović

Chairman of the Scientific Council
Serbian Academy of Sciences and Arts
Full member of SASA

Dr. Miroslav Nikolić

Institute for Multidisciplinary Research
University of Belgrade
Professor

Dr. Milan Pantić

Faculty of Sciences
University of Novi Sad
Professor

Dr. Đorđe Vukelić

Faculty of Technical Sciences
University of Novi Sad
Professor

Dr. Dušan Starčević

Faculty of Organizational Sciences
University of Belgrade
Professor Emeritus

Dr. Vladimir Đukić

Faculty of Medicine
University of Belgrade
Professor

Dr. Snežana B. Pajović

Faculty of Medicine
University of Niš
Professor

Dr. Snežana Bogosavljević Bošković

Faculty of Agronomy Čačak
University of Kragujevac
Professor

Dr. Aleksandar Fištes

Faculty of Technology
University of Novi Sad
Professor

Dr. Mina Zrnojević

Institute of Comparative Law
University of Belgrade
Senior Research Associate

Dr. Milan Jovanović

Faculty of Political Sciences
University of Belgrade
Professor

Dr. Aleksandar Rastović

Historical Institute Belgrade
Principal Research Fellow

Dr. Ljiljana Rogač Mijatović

Faculty of Dramatic Arts
University of Arts in Belgrade
Associate Professor

Igor Bogićević

Seven Bridges Genomics Ltd. Belgrade

Dr. Darko Ivanović

2Dsoft Company

Supervisory Board

The Supervisory Board consists of a chairperson and two members. Supervisory Board's role is to monitor Material and Financial Operations of the Science Fund of the Republic of Serbia, as defined by the Law on Science Fund.

Dr. Radovan Pejanović

Faculty of Agriculture
University of Novi Sad
Professor

Dr. Milorad Filipović

Faculty of Economics
University of Belgrade
Professor

Dr. Marija Ignjatović

Faculty of Law
University of Niš
Professor

Funding

Total Funding in 2021

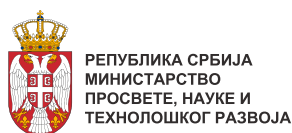
Budget of the Republic of Serbia	13.0 M€	<div><div></div></div>
World Bank	2.0 M€	<div><div></div></div>

Approved funding for 2022

Budget of the Republic of Serbia	8.5 M€	<div><div></div></div>
World Bank	11.0 M€	<div><div></div></div>
EU-IPA	5.5 M€	<div><div></div></div>

Grants for International Contracts (Project SAIGE) 2020-2024

World Bank	26.0 M€	<div><div></div></div>
EU-IPA	17.0 M€	<div><div></div></div>



Ongoing Programs

Program for Excellent Projects of Young Researchers	9.0 M€	<div><div></div></div>
Program for Development of Projects in the Field of AI	2.4 M€	<div><div></div></div>
Serbian Science and Diaspora Collaboration Program	0.8 M€	<div><div></div></div>
Program IDEAS	30.0 M€	<div><div></div></div>
Special Research Program on COVID-19	2.0 M€	<div><div></div></div>

Ongoing Programs Summary

Research Programs

No.	1	2	3	4
Program	PROMIS	AI	COVID-19	IDEAS
No. of Submitted Projects	585	70	129	917
No. of Approved Projects	59	12	14	105
Min. Approved Project Budget	25,261.66 €	121,296.51 €	46,865.92 €	67,943.75 €
Max. Approved Project Budget	200,000.00 €	200,000.00 €	406,612.43 €	499,535.17 €
Total Approved Budget	8,964,169.42 €	2,207,774.08 €	1,973,435.71 €	29,999,198.17 €
No. of Researchers from Serbia	317	119	130	1041
No. of Research Groups in organization	114	23	29	267
No. of Research Organizations	51	19	19	98
No. of Researchers from Diaspora	0	3	4	18
No. of Female/Male Researchers	184/133	41/78	85/45	622/419

International Mobility and Collaboration Programs

No.	5
Program	DIASPORA
No. of Submitted Projects	126
No. of Approved Projects	92
Min. Approved Project Budget	4,499.25€
Max. Approved Project Budget	10,000.00 €
Total Approved Budget	797,591.59 €
No. of Researchers from Serbia	268
No. of Research Groups in organization	92
No. of Research Organizations	43
No. of Researchers from Diaspora	88
No. of Female/Male Researchers	151/117



РЕПУБЛИКА СРБИЈА
МИНИСТАРСТВО
ПРОСВЕТЕ, НАУКЕ И
ТЕХНОЛОШКОГ РАЗВОЈА



THE WORLD BANK
IBRD • IDA | WORLD BANK GROUP



#ЕУ
ЗА ТЕБЕ

Research Programs Total

No. of Approved Projects	190
Total Approved Budget	43,144,577.38 €
No. of Researchers from Serbia	1528
No. of Research Groups in organization	431
No. of Research Organizations	113
No. of Researchers from Diaspora	25
No. of Female/Male Researchers	889/639

All Programs Total

282
43,942,168.97 €
1737
523
117
111
1008/729

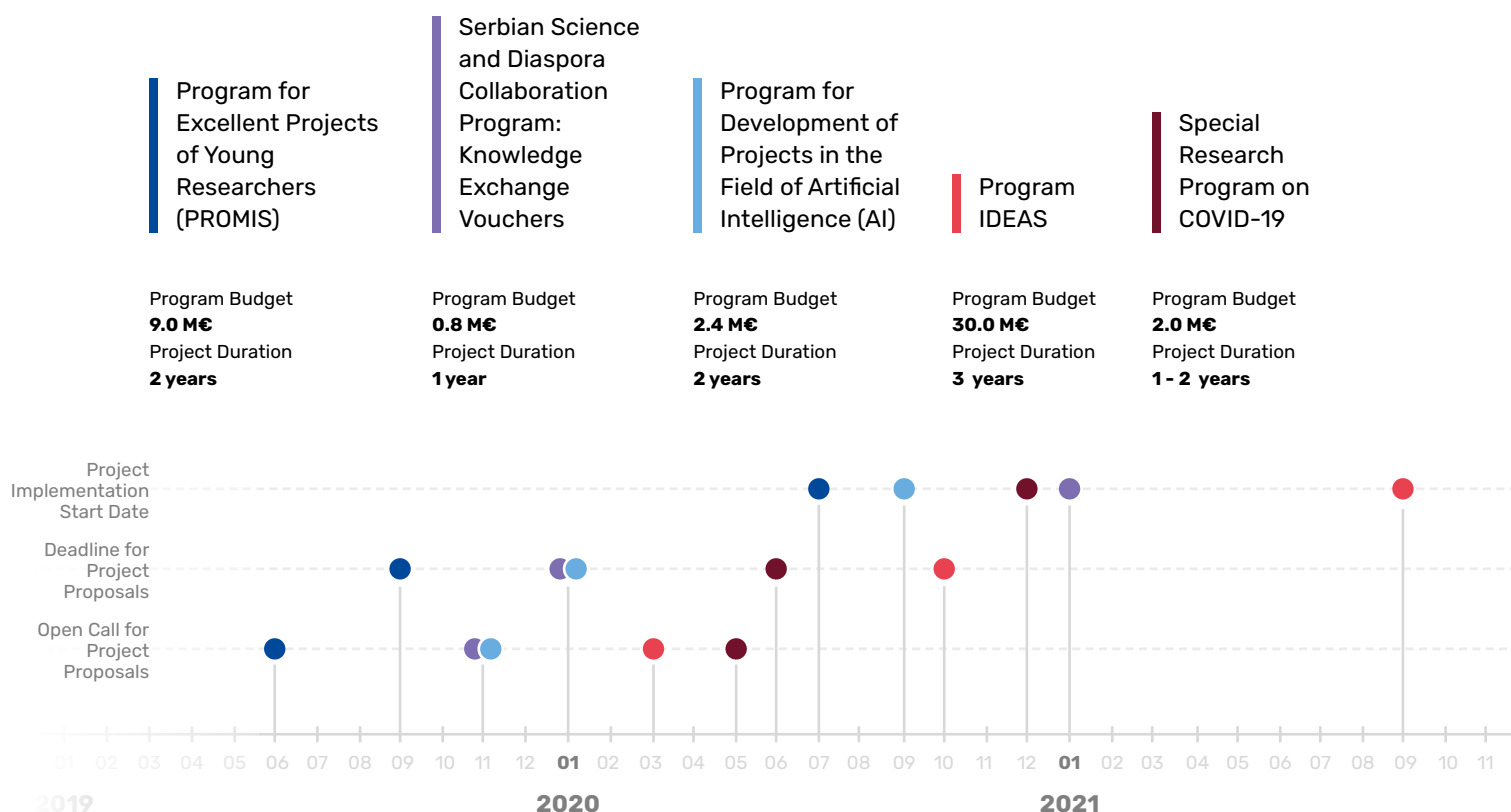
Science Fund Programs

The Programs and projects of the Science Fund have been formed to help some of the identified needs and challenges of modern Serbian society. Science and innovation must drive our aspiration for sustainable development.

The Programs of the Science Fund have been designed having in mind the needs of the scientific community in the Republic of Serbia and the needs and challenges of society in general. Since the beginning of its operations, the Science Fund has opened five Programs: (1) Program for Excellent Projects of Young Researchers (PROMIS), (2) Serbian Science and Diaspora Collaboration Program: Knowledge Exchange Vouchers, (3) Program for Development of Projects in the Field of Artificial Intelligence (AI), (4) Program IDEAS, and (5) Special Research Program on COVID-19.

Programs support technological development, advanced and innovative ideas, the development of human resources, laboratories, and scientific infrastructure, integration into international science trends, cooperation between science and industry, and other topics that are of strategic and social significance.

Financing for Science Fund's Programs is provided by the Republic of Serbia (Ministry of Education, Science and Technological Development), through a 26 million euro World Bank loan with implementation support, and the European Union, through a 17 million euro grant.



Three Main Criteria for the Evaluation of All Project Proposals



1. Excellence

Science Fund supports projects with sustainable goals, clear concepts, and systematic and well-designed working methodologies. High-level scientific excellence, quality, and innovative ideas represent the fundamental values of all projects supported by the Fund.



2. Impact

Projects should contribute towards resolving relevant social issues and current topics. The quality of the project proposals is evaluated based on the usability and potential dissemination value of the expected results. Project activities and results are presented to different target groups.



3. Implementation

Projects have an effective work plan and resources, matched with goals, tasks, and expected results. The complementary skills and aptitudes of the participants and the whole team's expertise are evaluated. Participants have the resources and knowledge to fulfill their roles and tasks.

Project Evaluation

The procedure of Project evaluation includes administrative verification and two stages of evaluation.

The Project Proposal that has passed the administrative check is sent to the first stage of the evaluation procedure.

First Stage of Evaluation

In the first evaluation stage, each Proposal is evaluated by peer reviewers, foreign experts with an internationally recognized professional career. Science Fund is continuously looking for independent Peer Reviewers to evaluate project proposals.

The final distribution of projects for Peer Review is made after matching available international Reviewers with Projects that have passed the administrative check, in line with corresponding keywords and selected scientific areas.

An application for matching Projects and Peer Reviewers has been devised, enabling anonymized matching according to keywords or according to secondary and tertiary scientific areas.

Peer Reviewers' identification for areas that the selected applicants do not cover is carried out individually, according to keywords and scientific areas, in line with the Act (a minimum of 3 experts need to be contacted for each missing place).

Each project receives three reviews from international Reviewers, assessing the criteria of excellence, impact, and implementation of the Project Proposal.

The first stage is completed after the Lead Reviewer summarizes the evaluations of all Peer Reviewers and prepares a summary report by averaging the scores given by each Peer Reviewer. The Lead Reviewer formulates a recommendation on whether the evaluated Project Proposal passes the qualifying threshold for further evaluation.

Second Stage of Evaluation

The proposal that has passed the first evaluation stage is sent to the Program Board.

The Program Board consists of three to seven members, depending on the program. The members of the Program Board are foreign experts with internationally recognized professional careers.

Program Board forms a preliminary ranking list of Project Proposals, which have passed the first stage of evaluation and whose individual budgets in total do not exceed the double budget provided by the Program funding. The Program Board evaluates all qualified proposals for the second stage of evaluation. For the majority of programs, all proposals that are on the preliminary ranking list are presented before the Program Board.

Upon completion of the presentations, the Program Board considers all the presented Proposals that have met the second stage of evaluation and forms the final evaluation.

Based on the final evaluation, the Program Board forms a ranking list of Project Proposals that have met both levels of evaluation and will be funded within the available funds of the Program.

Program Board forms a preliminary ranking list of Project Proposals. It considers eligibility for funding only those Projects that have met the evaluation criteria in the first instance and whose individual budgets in total do not exceed the double budget provided by the Public Call.

After this procedure, the Scientific Council and Managing Board of Science Fund give a positive opinion and formal approval of the preliminary rank list formed by the Program Board.

The Call for the Program Board members is announced for every specific program.

Experts

Our peer reviewers for 2019 and 2020 were international experts from 63 countries, and we continuously keep expanding our pool of experts for upcoming programs in 2021.

Grand Total: 1300+

USA	Montenegro	France
Ukraine	Mauritius	Finland
UK	Malta	Ethiopia
Uganda	Macedonia (North)	Estonia
Turkey	Luxembourg	Denmark
Thailand	Lithuania	Czech Republic
Switzerland	Lebanon	Cyprus
Sweden	Latvia	Croatia
Spain	Kuwait	Colombia
South Korea	Korea	China
South Africa	Japan	Chile
Slovenia	Italy	Canada
Slovakia	Israel	Bulgaria
Russia	Ireland	Brazil
Romania	Iran	Bosnia and Herzegovina
Portugal	Indonesia	Belgium
Poland	India	Azerbaijan
Pakistan	Hungary	Austria
Norway	Greece	Australia
New Zealand	Germany	Argentina
Netherlands	Georgia	Albania

PROMIS – Program for Excellent Projects of Young Researchers

Science Fund's first Call for Project Proposals was opened on June 21, 2019. The Call for Project Proposals was open until September 2, 2019. Project evaluation was officially completed in March 2020.

This Program targets young researchers in the Republic of Serbia. Project grants amounting to up to **€200,000** will be awarded after a two-stage international Peer Review process in the following areas: natural sciences and mathematics, technology and engineering sciences, medical sciences, biotechnical sciences, social sciences, and humanities.

Through this Call for Project Proposals, the applicants were encouraged to initiate research programs in their early careers, advance their careers by adding new approaches or directions to their ongoing research programs, and increase their capacity to apply for research grants.

PROMIS is devised to support postdocs and young researchers and give them an opportunity to become project managers, work independently, as well as to create new partnerships, develop innovative ideas, products, patents, publications, as well as to develop skills and concepts for applying for future Project-based funding under national and foreign funds.

Initially, with a budget of €6 million, the total budget for PROMIS was increased to €9 million to support a more significant number of young researchers through this Call for Project Proposals, especially having in mind the high level of interest and number of received Project Proposals.

585	Submitted Projects	25,261.66 €	Min. Approved Project Budget	317	Researchers from Serbia
59	Approved Projects	200,000.00 €	Max. Approved Project Budget	114	Research Groups in Organizations
		8,964,169.42 €	Total Approved Budget	51	Research Organizations
		2 years	Project Duration	184/133	Female/Male Researchers

PROMIS Application Process and Outcomes

A total of **585 Project applications** for PROMIS were received through the Republic of Serbia's eGovernment web portal.

Awarded Projects are led by SROs located in Belgrade, Novi Sad, and Čačak.

An administrative-technical examination of Project Proposals submitted for PROMIS has been carried out by the Committee for Performing the Administrative Check, consisting of members of Science Fund staff. The administrative check included the following criteria: whether the applications were submitted in a timely manner through the designated web portal (eGovernment Portal of the Republic of Serbia), completeness of applications and supporting documentation, eligibility of researchers and participants on the Project, eligibility of the participating SROs, eligibility of costs, allowed cost categories' percentage and overall budget size, allowed percentage of engagement on the Project for all participants.

An analysis of Principal Investigators (PIs) had shown that faculty staff members applied as PIs in 372 applications, institute staff members applied as PIs in 203 applications, and integrated university staff members applied as PIs in 10 applications.

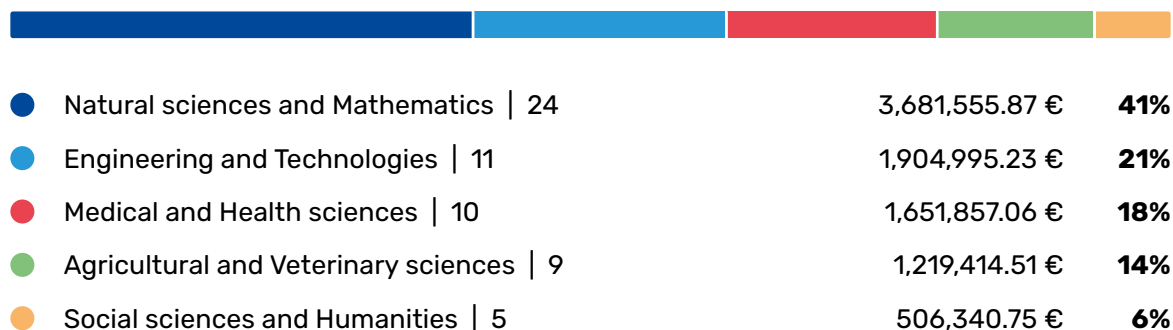
As regards the scientific area distribution, the statistics show that there are 31.36 % applications from technology and engineering sciences, 27 % applications from natural sciences and mathematics, there are 16.75 % applications from social sciences, 12.55 % of applications are from medical sciences, 9.55 % applications are from biotechnical sciences and 2.79 % from the humanities.

PROMIS Funding by Cost Type

Category	Total Amount per Category (EUR)	Total Amount per Category (RSD)
Personnel	4,324,250.71	510,261,583.78
Travel	257,774.19	30,417,354.22
Conferences	456,089.66	53,818,579.80
Equipment	1,330,383.96	156,985,307.31
Consumables	851,144.80	100,435,085.91
Publications	293,105.66	34,586,467.46
Services and Subcontracting	392,314.05	46,293,057.88
Dissemination	171,752.16	20,266,755.10
Other costs	59,301.17	6,997,537.57
SRO overhead	828,053.07	97,710,262.59
Grand Total (59 projects)	8,964,169.42	1,057,771,992.05

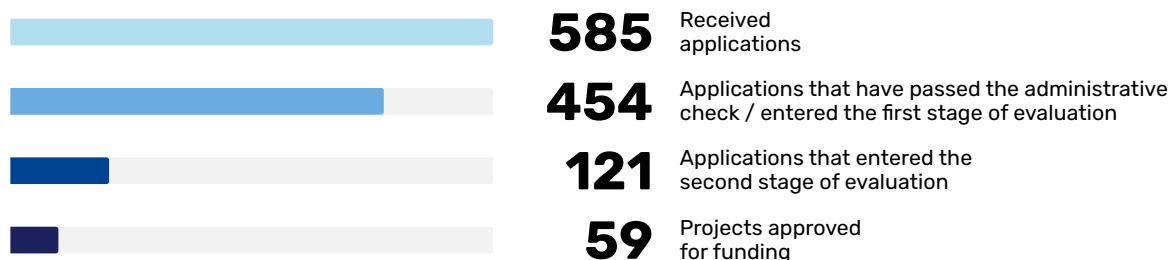
PROMIS Grants Approved by Research Discipline

59 Projects | 8,964,169.42 € Total Budget



PROMIS Projects Evaluation

The Project Proposals are subject to an administrative verification and a two-stage evaluation process. The first stage of evaluation is performed by Peer Reviewers, and the second stage by the Program Board.



In the first stage of evaluation for PROMIS, Science Fund has established cooperation with 620 Reviewers from 63 countries worldwide. Principal Investigators whose projects entered the second stage of evaluation (121) had the opportunity to present their Project Proposals before the Program Board to evaluate PROMIS. The second stage of the evaluation process of PROMIS was completed in March 2020 when the Scientific Council and Managing Board of Science Fund gave a positive opinion, and formal approval of the rank list.

The 'time to inform,' the time from the closing of the Call for Project Proposals to the final results of the call, was six months for PROMIS. The 'time to grant,' the time from opening the Call for Project Proposals to signing the contracts for selected Projects that have passed all evaluation stages and are proposed for support, was expected to be nine months but was prolonged due to the COVID-19 pandemic.

Regarding the gender ratio, the statistics show that 44.1% of Principal Investigators (PIs) of approved Projects are female with a total number of 26 and 55.9% are male with a total number of 33.

PROMIS Award Ceremony

PROMIS grant award ceremony was held at the National Theatre in Belgrade on March 11, 2020. On this special occasion, awardees of the Program for Excellent Projects of Young Researchers were presented, and the new Program IDEAS was officially announced.



Програм за изврсне пројекте
младих истраживача
ПРОМИС



Program for Development of Projects in the Field of Artificial Intelligence

The Program for Development of Projects in the Field of Artificial Intelligence (AI) aims to support the excellence and relevance of scientific research in the Republic of Serbia in artificial intelligence. The Program aims to support the application of scientific results and technological innovations, increase Serbia's competitiveness, enhance human resources development, and promote international cooperation in the domain of science and innovations.

The two subprograms support basic and applied scientific research and contribute to the development of fundamental science, and the application of artificial intelligence, respectively.

The basic thematic areas of the Program include **General artificial intelligence, Machine learning, Natural language processing, Planning, Knowledge reasoning, Computer vision and speech communication, and Intelligent systems**. Researchers were enabled to propose an additional area regarding the predefined thematic areas.

The total budget for this Program amounts to €2,400,000. The available budget is divided equally between the two sub-programs, with €1,200,000 available per each sub-program.

The Call for Project Proposals was opened on November 29, 2019, and closed on January 31, 2020. There were 70 applications received through the eGovernment web portal within this deadline.

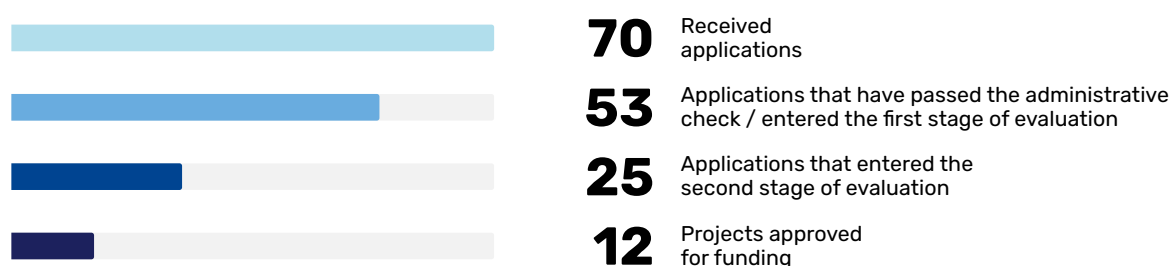
70	Submitted Projects	121,296.51 €	Min. Approved Project Budget	119	Researchers from Serbia
		200,000.00 €	Max. Approved Project Budget	23	Research Groups in Organizations
12	Approved Projects	2,207,774.08 €	Total Approved Budget	19	Research Organizations
				3	Researchers from Diaspora
		2 years	Project Duration	41/78	Female/Male Researchers

AI Projects Evaluation

The two-stage evaluation process of received Project Proposals under this Program is organized similarly to PROMIS.

The first step consists of a review by three international Reviewers per each Project Proposal. The Lead Reviewer summarizes the review findings and recommends the second stage.

The Program Board, which deliberates on Project Proposals in the second stage evaluation for the Program for Development of Projects in the Field of Artificial Intelligence, consists of 3 international experts coming from the artificial intelligence field.



After the evaluation, six applied research projects were selected, which will provide a concrete contribution to the development of agriculture, information technology, energy, modern industry, and environmental protection. The chosen research projects are expected to contribute to the development of science.

Research teams from Belgrade, Novi Sad, Niš, and Kragujevac will realize these projects in the next two years. The maximum budget per project is **€200,000**, and the project duration is up to two years.

Serbian Science and Diaspora Collaboration Program: Knowledge Exchange Vouchers

Serbia is proud to have many distinguished scientists worldwide who represent us in the best possible way. Science Fund aims to enable formal cooperation among researchers from Serbia and diaspora by introducing collaboration programs for knowledge exchange and joint research. There are three different Calls for Project Proposals planned as part of the Serbian Science and Diaspora Collaboration Program. The first Call for Project Proposals focuses on short-term visits of researchers from the Republic of Serbia to experts from the diaspora while providing support to SROs in the Republic of Serbia for developing cooperation with the diaspora. The support is conceived as a mobility grant in the form of vouchers.

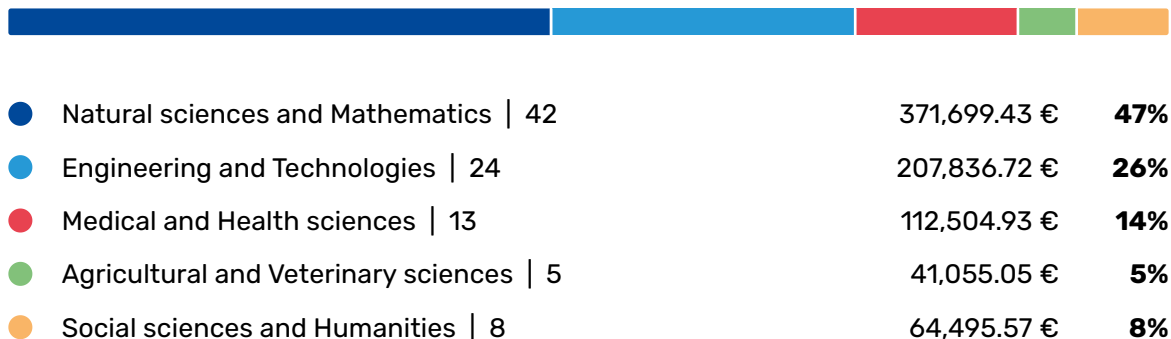
The total budget for this call for proposals is €800,000.

The Call for Project Proposals was opened on November 31, 2019, and it was closed on January 31, 2020. There were **126 applications received** under this Call. A total number of 92 Projects are approved for funding.

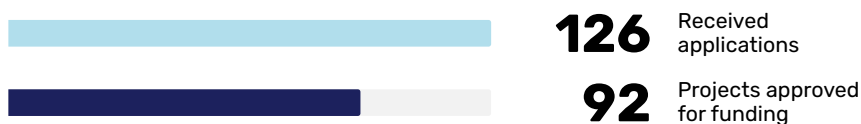
126	Submitted Projects	4,499.25 €	Min. Approved Project Budget	268	Researchers from Serbia
92	Approved Projects	10,000.00 €	Max. Approved Project Budget	92	Research Groups in Organizations
		797,591.59 €	Total Approved Budget	43	Research Organizations
				88	Researchers from Diaspora
		1 year	Project Duration	151/117	Female/Male Researchers

Diaspora Grants Approved by Research Discipline

92 Projects | 797,591.70 € Total Budget



Diaspora Projects Evaluation



Geographic Distribution

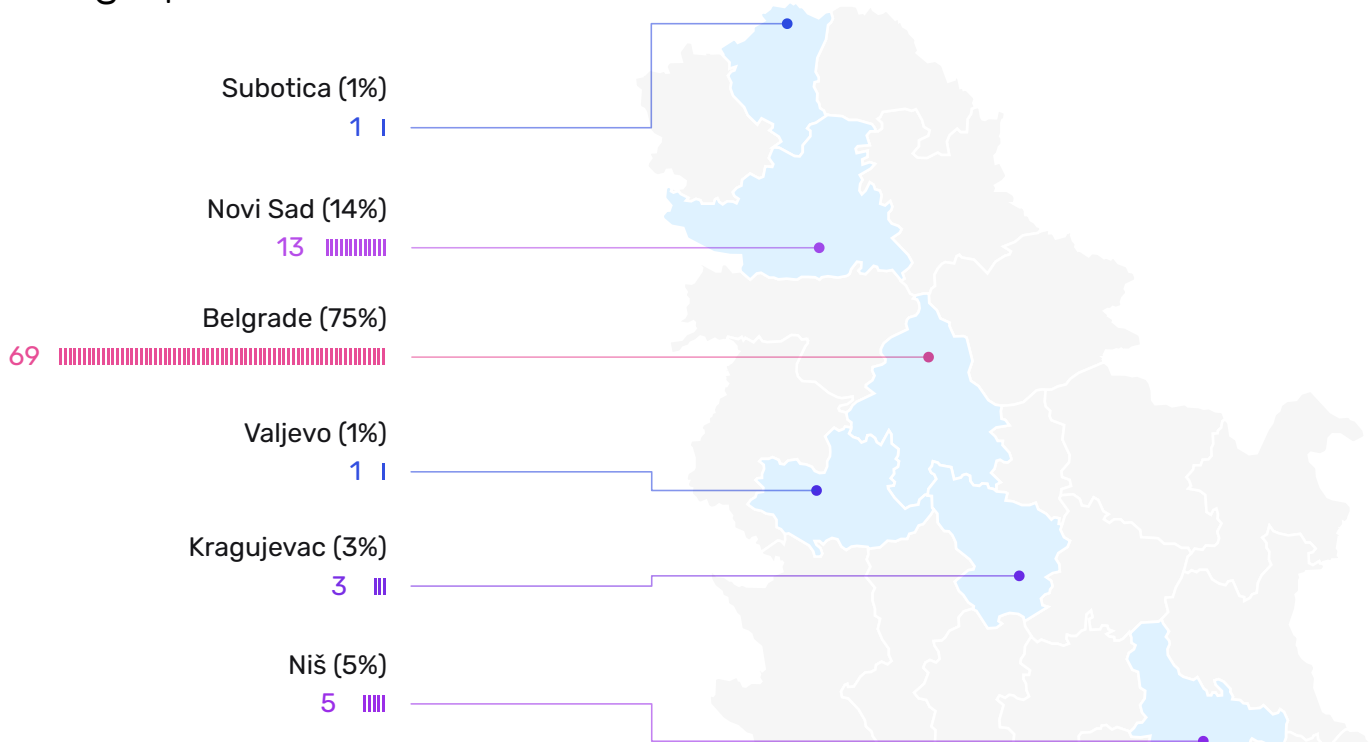
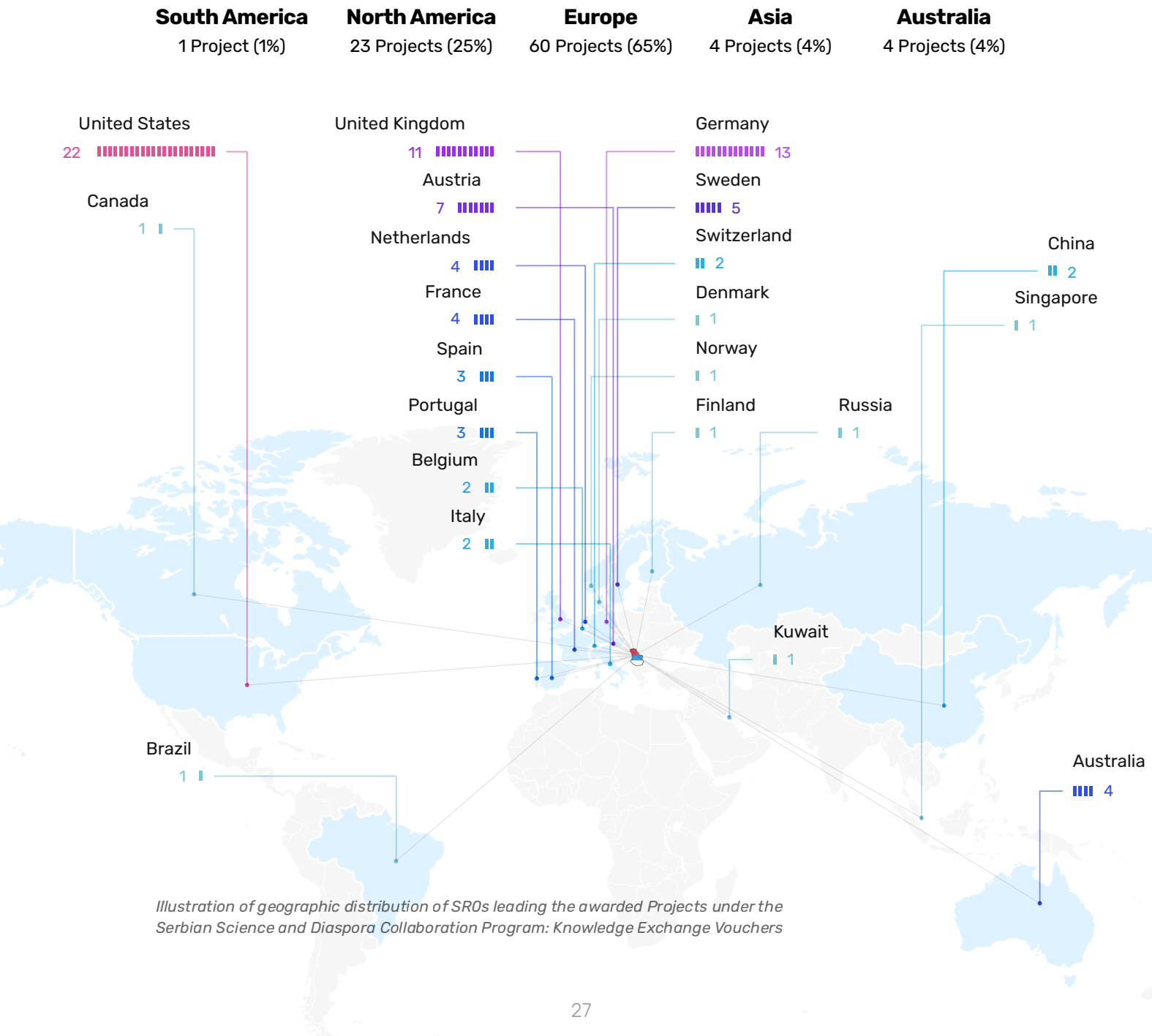


Illustration of geographic distribution of Projects approved for funding under the Serbian Science and Diaspora Collaboration Program: Knowledge Exchange Vouchers

Diaspora is defined in this Program as citizens of the Republic of Serbia residing abroad and members of the Serbian people, expatriates from the territory of the Republic of Serbia, and their descendants.

The Program aims to establish or improve scientific cooperation with the diaspora, exchange of knowledge, cooperation on scientific and research problems and challenges, publication of papers and creation of patents, development of commercial products, a joint application for project funding.

The Host Institutions (HIs) are located in numerous European countries (with a total number of 60 approved Projects), Australia (with a total number of 4), North America (with a total number of 23), Asia (with the total number of 4) and South America (with one approved Project).



The Program targets scientists and researchers employed in accredited SROs during Project implementation.

Regarding the gender ratio, the statistics show that 62 % of Principal Investigators (PIs) of approved Projects are female with a total number of 57 and 38 % are male with a total number of 35.

An analysis of SROs leading the approved Projects under this Call has shown that 31.5 % of SROs are institutes (with a total number of 29 approved Projects), and 68.5 % of SROs are universities (with a total number of 63 approved Projects).

When it comes to Host Institutions (HIs), the statistics show that most of the HIs are universities (65.2 %) and institutes (21.7 %). The rest are hospitals (6.5 %), companies (3.3 %), research centres (2.2 %) and research laboratories (1.1 %)

A Program Board that has participated in the application evaluation under this Call for Project Proposals consists of 3 members from the following fields: natural sciences and mathematics, technology and engineering sciences, biomedical sciences, social sciences, and humanities.

Program IDEAS

Science Fund's Program IDEAS is designed to support and finance research projects based on outstanding ideas that could have, in the future, a significant impact on the development of science and research, economy and/or society as a whole, to include outstanding researchers into scientific and research work, to strengthen professional capacities of researchers and to create new research teams.

Initially, with a budget of €24 million, the total budget for the Program IDEAS was increased to **€30 million** to support a more significant number of researchers through this Call for Project Proposals, especially having in mind the high level of interest and number of received Project Proposals.

Program IDEAS is the largest Program of Science Fund of the Republic of Serbia. The Program lends support to basic and applied research in all fields of science. There are no pre-defined topics for Projects within the Program. The program allows researchers to define their own research programs, form their own teams, and collaborate with relevant laboratories, research centres, and industries in the Republic of Serbia and worldwide. The IDEAS program is implemented with four subprograms for the development of scientific research in the following fields of science: 1) natural sciences and mathematics, 2) engineering and technological sciences, 3) (bio)medical sciences, and 4) social sciences and humanities. Given these specified fields of science, it is assumed that focus areas will include specialized sectors, such as food and agriculture, health, education, biotech, etc. The main activities that could have social and environmental impacts and related to investments and/or products that are expected to be minor, not requiring major civil works, and developed using new and energy-efficient technologies.

The Projects are designed for the duration of up to three years (36 months).

917	Submitted Projects	67,944.00 €	Min. Approved Project Budget	1041	Researchers from Serbia
105	Approved Projects	499,535.00 €	Max. Approved Project Budget	267	Research Groups in Organizations
		30,000,000.00 €	Total Approved Budget	98	Research Organizations
		3 years	Project Duration	622/419	Female/Male Researchers

IDEAS Grants Approved by Research Discipline

105 Projects | 29,999,198.17 € Total Budget



● Natural sciences and Mathematics 39	11,820,981.35 €	39%
● Engineering and Technologies 23	6,565,164.09 €	22%
● (Bio)Medical sciences 19	5,665,368.59 €	19%
● Social sciences and Humanities 24	5,947,684.14 €	20%

IDEAS Budget Structure

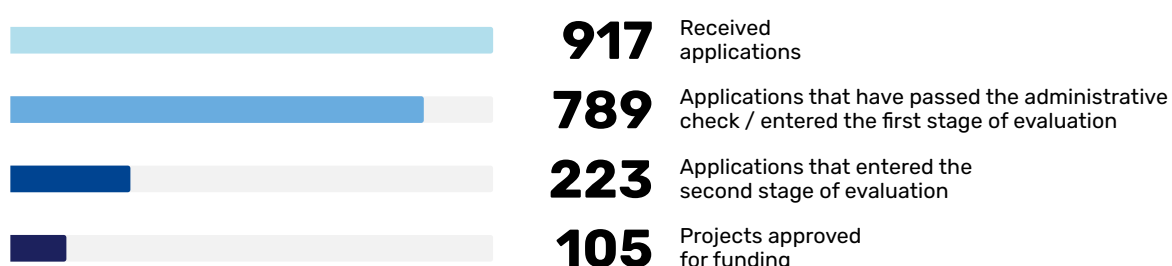
29,999,198.17 € Total Budget



● Personnel	14,820,007.78 €	50%
● Equipment and Consumables	8,799,495.28 €	29%
● Travel and dissemination	1,845,989.27 €	6%
● Services and subcontracting	1,617,465.01 €	5%
● Other Costs	377,905.91 €	1%
● SRO(s) overhead	2,538,334.92 €	9%

IDEAS Projects Evaluation

Program IDEAS is the largest and most complex program of the Science Fund of the Republic of Serbia. Initially, 9096 researchers from 201 scientific research organizations applied with 917 project proposals. After the administrative check, 789 proposals proceeded to the first stage of evaluation, where each project proposal was evaluated by three international peer reviewers according to the criteria of excellence, impact, and implementation. Based on the program rules, according to the ranking after the first evaluation phase, the highest-ranked 223 project proposals proceeded to the second stage of evaluation.



The second stage of evaluation of project proposals was performed by the Program Evaluation Committee consisting of four Expert Panels, each with five international experts with internationally recognized professional careers and experience in evaluating international research projects: (1) Panel for Natural Sciences; (2) Panel for Engineering and Technological Sciences; (3) Panel for (Bio)Medical Sciences and (4) Panel for Social Sciences and Humanities. During the second stage of evaluation, the applicants presented their proposals before the Expert Panel, followed by a discussion between the principal investigator and members of the corresponding panel.

After both stages of evaluation, the final lists for corresponding subprograms were established, according to the total score of both levels of evaluation and the following formula: the total average score from stage one is scaled down to 65% and added to the total average score awarded by the Expert Panel. The maximal total score for both evaluation stages is 100 points. An individual list was established for each subprogram based on the projects' rankings and available budget.

Special Research Program on COVID-19

Special research program on COVID-19 aims to support projects that will contribute to the efficient scientific response to the COVID-19 pandemic caused by the SARS-CoV-2 virus and enable better preparedness and the timely reaction of the whole society to this pandemic.

The program was initiated and prepared under the circumstances of the state of emergency declared in the Republic of Serbia considering the COVID-19 pandemic. Considering the importance of involving the scientific community, this Program has a special strategic significance for the Republic of Serbia and its citizens.

This Program includes the development of applicable solutions while supporting applied scientific research, the creation of interdisciplinary and multidisciplinary teams, and project applications made by consortiums. This program is inciting the projects that can offer solutions that actively contribute to the fulfillment of the goals of this Program the fastest.

Open Public Call that was opened until June 11, 2020, resulted in 129 submitted Project proposals. After two evaluation stages, **14 research projects** were selected: 11 from the biomedical, two from economics, sociological, psychological research and management of complex systems, and one project from biomedical engineering and IT.

Within the Special research program on COVID-19, a total of 131 scientists from SROs from Belgrade, Novi Sad, Kragujevac, and Novi Pazar will be working on the approved project proposals.

The total approved budget of the Program is €1,975,435.71. The minimal amount per project is €46,866, with the maximum amount per project up to €406,612.

Program funding is provided by the World Bank, project SAIGE.

129	Submitted Projects	46,865.92 €	Min. Approved Project Budget	130	Researchers from Serbia
14	Approved Projects	406,612.43 €	Max. Approved Project Budget	29	Research Groups in Organizations
		1,973,435.71 €	Total Approved Budget	19	Research Organizations
				4	Researchers from Diaspora
		1-2 years	Project Duration	85/45	Female/Male Researchers

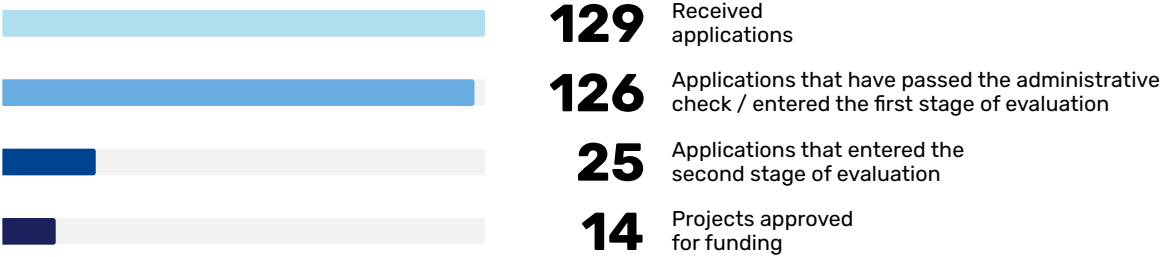
COVID-19 Grants Approved by Research Discipline

14 Projects | 1,975,435.71 € Total Budget



● Biomedical sciences 11	1,654,621.88 €	84%
● Economics, sociological, psychological research and management of complex systems 2	144,190.31 €	7%
● Biomedical engineering and IT 1	174,623.52 €	9%

COVID-19 Projects Evaluation



Communication with the Science Community – The Openness Principle

Science Fund gives great attention to openness and transparency as the guiding principles of its work. In preparation and realization of its Programs, Science Fund reaches out to the scientific community with the aim to get feedback that will improve the quality of the prepared Programs. Since its establishment Science Fund has been dedicated to communication with researchers.

Science Fund highly values feedback from the scientific community. After each Open call, the Science Fund organizes online surveys to collect feedback, comments, and suggestions for future programs and procedures. Through these surveys, everyone who applied or was interested in Program can use the opportunity to communicate all issues pertaining, which can contribute to the future work of the Science Fund.

The research community is also invited to send their comments, suggestions, and opinion about programs, procedures, or SF work in general. For this purpose, there is a dedicated email address: misljenje@fondzanauku.gov.rs.



Supervisory visit to the PROMIS project team IN-DEPTH led by young scientists exploring molecular diversity of emerging pathogens in Serbia. The visit was joined by Prof. Dr. Marijana Dukić Mijatović, State Secretary at the Ministry of Education, Science and Technological Development, and Dr. Milica Đurić Jovičić, Acting Director of the Science Fund of the Republic of Serbia.

Communication and collecting feedback are also performed during supervisory visits to the project teams and research organizations as a part of project implementation monitoring activities. The members of project teams present the research results while the SF staff visits the premises and performs all necessary checks. Such visits are always opportunities for discussion about the results, further ambitions and needs, potential obstacles, and plans for the future.

Designing new programs - Panel discussions with the research community

To discuss a new thematic program for social sciences and humanities, the Science Fund organized panel discussions.

The primary thematic frameworks of the program are cultural identities, social, individual, and psychological identities, ethnic and national identities, gender identities, and other thematic areas from the social sciences and humanities that deal with identity.

During discussions, participants emphasized the importance of social sciences and humanities, the importance of language, heritage, and art for the cultural identity of Serbia, and the necessity of respecting identity issues in creating public policies was emphasized. Renowned scientists and professors spoke about national identity in the context of diplomacy and discussed the revision of the history and status of identity sciences in modern society.

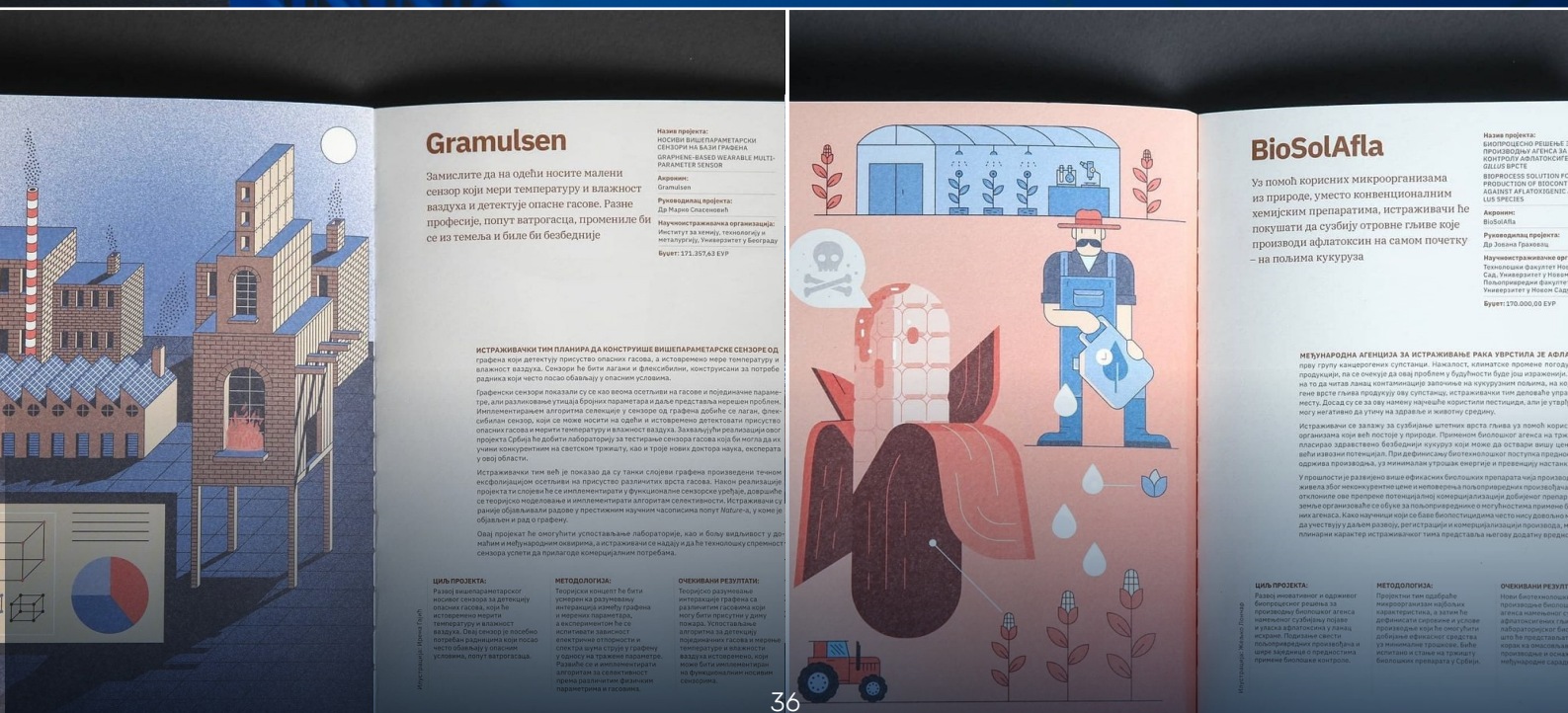


Designing new programs - Panel discussions "IDENTITIES IN FOCUS", organized in cooperation with the Ilija M. Kolarac Endowment.

Promoting Science

Promoting our supported projects and researchers can lead to new partnerships among research groups and new collaborations between science and industry. It also motivates other researchers to apply and compete for funding while all stakeholders can learn about new scientific activities in Serbia.

PROMIS Book



In cooperation with the Center for the Promotion of Science, the Science Fund published a brochure on 12 projects supported within the Program for Development of Projects in the Field of Artificial Intelligence.

[illegible]

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International Cooperation – A Learning Opportunity

The Science Fund is open to cooperation with national bodies and international science funds and is eager to learn from their experience and adopt best international practices.

The Science Fund communicates and exchanges knowledge with numerous funds and research agencies across Europe.

Science Europe

The Science Fund has become a member of the international organization Science Europe, the umbrella organization for European research funding agencies. Science Europe supports the exchange of knowledge, experience, and expertise of some of the most prestigious research foundations in Europe.

In the coming period, the Science Fund will continue to strengthen cooperation with partner institutions in Europe and the world to improve procedures, develop new programs, assist international research collaboration and create joint programs for financing scientific research.



Science Fund
of the Republic of Serbia

Connecting Serbian scientists around the world – Science without borders

Serbia is very proud of Serbian scientists, their achievements, and their contributions to science, both in Serbia and worldwide. Science Fund of the Republic of Serbia supports and encourages connections with the Serbian scientific diaspora to strengthen the scientific community through cooperation with colleagues from abroad.



SCIENCE WITHOUT BORDERS


**WE ARE EXPANDING SERBIAN
SCIENTIFIC NETWORK**

To support and inspire connections and collaboration among Serbian scientists around the world, Science Fund has started the LinkedIn group “Science without Borders.” This group serves as an open professional network for collaboration between Serbian scientists in Serbia and abroad and aims to exchange knowledge, ideas, experience, and opportunities for collaboration. Such connections are essential for developing science and the economy, entrepreneurship, and society in Serbia. This platform currently has 1074 members.

Science Fund in Media and on Social Networks

Science Fund supports high-quality research, which can lead to significant scientific achievements and innovations, thus contributing to industry and society in the Republic of Serbia.

Our goal is to provide high visibility to all supported projects and research activities. We want to inspire researchers and industry to new partnerships and expand collaborations worldwide. Science Fund communicates activities through synchronized information, provided in PR announcements, and interviews with the Acting Director of Science Fund, Dr. Milica Djurić Jovičić.



Dr. Milica Djurić Jovičić, Acting Director of Science Fund of the Republic of Serbia, Explaining Procedures of Science Fund and Promoting programs, Television with national coverage TV Prva.

Promoting our supported projects and researchers can lead to new partnerships among research groups and new collaborations between science and industry. It also motivates other researchers to apply and compete for funding while all stakeholders can learn about new scientific activities in Serbia.

ПОЛИТИКА

Svet Politika Društvo Pogledi Hronika Ekonomija Kultura Beograd Sport Region

INTERVJU: VLADAN VULETIĆ, profesor fizike na američkom MIT-u i član UO Fonda za nauku Srbije

Naučno-istraživački rad nije sprint nego maraton

Kao mala država imamo iznenađujuće veliki broj etabliranih naučnika širom sveta, a nauka u Srbiji mogla bi mnogo da profitira od saradnje s dijasporom



Проф. др Владан Вулећ (Фото лична архива)

Dr. Vladan Vuletic, Member of the Managing Board of the Science Fund and Professor of Physics at MIT, Explaining procedures of Science Fund and highlighting the importance of the project results, Daily Newspaper Politika.



Јутарњи
ПРОГРАМ
08.03.

ЛОЗНИЦА

4 °C /макс. 12 °C

1004 mbar

09:10
ПОНЕДЕЉАК

Project COV2Soul.RS, Special Research Program on COVID19, Expected project results and scientific achievements of the project team, Serbia's public broadcaster RTS.

The Science Fund was mentioned in 1146 media reports, articles, news, and interviews during 2021. Science Fund's announcements have been recorded in all types of media:

884 on web portals, 157 in print editions, 99 in TV formats, and 6 on radio stations.

МИСТЕРИЈА
СТАРОГ
БЕОГРАДА
Убиство
најбогатије
Српкиње

ИРЕНА
АРАНЂЕЛОВИЋ
ТАМАРА
ТОДОРОВИЋ
СОЊА
КАИШАРЕВИЋ

Greece 3.75 EUR, Hungary 19.00 HUF, Czech Rep. 1.50 EUR,
Italy 3.75 EUR, Bulgaria 10.20 BGN, China 2.50 GBP

USA 4.50 USD, Nederland 3.10 EUR, Republika Srpska 2.90 KM,
Slovenija 2.60 EUR, Makedonija 90 DEN, BiH 2.90 KM,

Deutschland 3.10 EUR, Österreich 3.10 EUR,
Schweiz/Suisse 4.50 CHF, Sverige 35 SEK, France 3.10 EUR,



НАУЧНИЦЕ КОЈЕ ЧИНЕ БОЉИМ

Dr. Irena Arandelović, Principal Investigator of PROMIS Project IN-DEPTH, Dr. Tamara Todorović, Principal Investigator of PROMIS project SYMBIOSIS, and Dr. Sonja Kaišarević, Principal Investigator of PROMIS project BIANCO, Magazine Ilustrovana Politika "Scientists who make the world a better place"

ИЛУСТРОВАНА ПОЛИТИКА

6. јул 2021. | Број 3258
Цена 120 динара

Дурмитору у походе
**ОСАМНАЕСТ
ГОРСКИХ ОЧИЈУ**

**МОДНИ
СПЕКТАКЛ**
Омаж
креатору
Александру
Јоксимовићу

**ИГОР ПАШТИ
СЛОБОДАН ДАВИДОВИЋ
МАРИН ЈУКИЋ**

Dr. Igor Pašti, Principal Investigator of PROMIS Project RatioCAT, Dr. Slobodan Davidović, Principal Investigator of PROMIS project SERBHIWE, and Dr. Marin Jukić, Principal Investigator of PROMIS project PsyCise, Magazine Ilustrovana Politika "Young lions of Serbian Science"

МЛАДИ ЛАВОВИ НАШЕ НАУКЕ

ЈЕЛЕНА: Пуловер и сакло BOSS (MOVEM FASHION), панталоне MARELLA (MIAMAYA), ципеле SOLO
МИЛИЦА: Мајица, сакло, бермуде и патике BOSS (MOVEM FASHION), огрлица MARELLA (MIAMAYA)
АНА: Џемпер BOSS (MOVEM FASHION), сукња MAX & CO



Dr. Milica Tošić, Principal Investigator of PROMIS Project HUMANE, Dr. Ana Banko, Principal Investigator of PROMIS project ROLERS, and Dr. Jelena Slivka, Principal Investigator of AI project CleanCADET, Magazine Bazar

ЕКСПЕРИМЕНТИМА ДО НОВИХ ЛЕКОВА

Др Милица Тошић руководи пројектом HUMANE у оквиру програма за изворне пројекте младих истраживача на којем ради на истраживањима нове генерације лекова за најтеже болеснике. Лабораторија, која је њено радно место, уједно је и њена највећа љубав па зато, као истраживач-сарадник на Институту за медицинска истраживања Универзитета у Београду, има жељу да једном дана и сама руководи једном таквом која ће испитивати молекуларне механизме деловања хематерапеутика у циљу побољшања њиховог дејства и ефикасности лечења тумора.

Ви сте своју љубав према молекуларној биологији спојили са медицинском и то на, многи би рекли, најумуњанији начин – у циљу помоћи људима који болују од најтежих болести. На који начин пројекат Humane онколошким болесницима пружа наду за излечење?

Humane пројекат ће расветлити молекуларни механизам деловања хидроксуреа и тако допринети не само базичној науци, већ и потенцијално омогућити да се побољша деловање тог хематерапеутика комбинационом терапијом са другим агенсима. Наравно, да би примена наших истраживања у клиничкој онкологији била велика потврда нашег рада и то је сан сваког научника, али још увек смо у домену експерименталног рада и прикупљања знања која могу послужити као основа за дизајнирање нових терапеутика и будуће клиничке студије.

Поменути пројекат део је Програма за изворне пројекте младих истраживача PROMIS Фонда за науку Републике Србије. На који начин и са каквим циљем сте ви лично дошли на идеју да конкуришете за овај програм?

Првенствени циљ био је да се овим пројектом обезбеде средства која би нам омогућила да експерименталне идеје спроведемо у дело, набављањем нове опреме, алата и експерименталних животиња. Идеја за пројекат проистекла је из дугогодишњег рада Лабораторије за молекуларну онкологију, а методолошки приступ је базиран на знањима која сам стекла током усавршавања у Фрајбургу. Као млади научник мотивисан да савлада вештине руковођења пројектом и организације научног тима, препознала сам се као идеални кандидат за овај конкурс.

Докле сте стигли у истраживању у којем испитујете лековити утицај поменуте хидроксуреа на смањење метастаза код онколошких болесника? Да ли је реално очекивати да та открића допринесу и лечењу карцинома у терминалној фази?

Тренутно смо у процесу испитивања дејства хидроксуреа на леукемиским ћелијским линијама. Дошли смо до прелиминарних резултата и сада су пред нама изазови да креирамо канцерске ћелијске линије и испитивања, гени, да њих искористимо за истраживања.

Dr. Milica Tošić, Principal Investigator of PROMIS Project HUMANE, Magazine Bazar “With experiments to new drugs”

стадијума канцера, али то није ни кратак ни праволинијски пут. Колико времена треба да прође од тренутка када експериментално потврдите своје научне претпоставке до тачке у којој ће нове терапије патентирани на основу ваших достигнућа бити доступне пацијентима?

У просеку је потребно најмање десет година да нови лек заврши пут од почетног научног открића, преко дизајнирања и оптимизације једињења, до тржишта. На том путу мора да прође испитивање токсичности, метаболизма, ефикасности и безбедности за људску употребу кроз неколико фаза преклиничких и клиничких студија. Међутим, хидроксуреа је већ одобрена за третман различитих малигних тумора, па је наша идеја да се у комбинацији са другим агенсима повећа њена ефикасност и смањи могућност развијања резистенције.

Ваш пројекат изазвао је доста буре у јавности и због чињенице да се у њему помиње отварање висококвалитетних лабораторија за гајење експерименталних животиња. Зашто су нам такве лабораторије потребне?

Експерименталне животиње су драгоцене и неопходне у истраживањима како би се резултати добијени на културама ћелија потврдиле у живом организму који представља знатно комплекснију интеракцију различитих ћелија, ткива и органа система. Експерименталне животиње морају се чувати под строго контролисаним условима како спољашњи фактори, као што су температура, осветљење, исхрана или различити патогени, не би променили поставку експеримента и тако угрозили веродостојност резултата. Зато је опремање просторија у којима се оне узгајају веома битно.

Бавите се истраживањима у области молекуларне онкологије. Са каквим изазовима се као жена сусрећете у овој професији која подразумева највиши ниво експертизе?

Будући да је експериментални рад базиран на покушајима и погрешкама, потребно је доста труда и рада да би се постигли резултати, а сваки резултат отвара нова питања. Стога је потребна велика флексибилност што се тиче дугог радног времена, па је понекад тешко пронаћи баланс између успешне каријере и породичног живота, поготово женама. У свету, жене научнице и даље уживају мање поштовања и ауторитета од мушкараца али, на срећу, то је много мање изражено код нас.

Многи за вас кажу да сте покренули нови тренд у оном непопуларном таласу одлива мозгова који нам се дешава годинама, променивши том феномену смер чињеницом да сте се као неко ко је докторирао у Немачкој вратили у своју земљу. Како вам из ове перспективе изгледа одлука да се вратите и будете један од предводника притока мозгова?

Прошле су две године откако сам се вратила у Србију и још ми се не досеђује. У PROMIS пројекту, који је финансиран из буџета Републике Србије, имам одличан тим истраживача који је успео да направи нове вештине дизајнирања и тестирања научних пројеката, а такође и да их примени у пракси. Надам се да ћу својим примером и убудуће показати да је могуће бити успешан у науци у Србији.



Dr. Milica Tošić, Principal Investigator of PROMIS Project HUMANE, Magazine Bazar “With experiments to new drugs”

СПРЕМНО У НОВЕ ВИРУСЕ

Др Ана Банко руководи пројектом ROLERS у оквиру Програма за изворне пројекте младих истраживача који се бави испитивањем нових биомаркера клиничког тока одређених аутоимунских болести у циљу ефикаснијег скрининга и болних терапија за ове пацијенте. Иако већ дуго ради као доценткиња на Институту за микробиологију и имунологију Медицинског факултета Универзитета у Београду, у последње време непланирано се суочила са популарношћу јер је област вирусологије којом се бави, због актуелне пандемије, тренутно једна од оних која итекако занима ширу заједницу.

За вирусе кажу да су један од кључних окидача за аутоимуно обољења и управо је то тема којом се бави ваш пројекат ROLERS. Шта је оно што ће реализација овог пројекта донети свим људима који живе са неком аутоимунском болешћу?

Аутоимуна обољења су бројна и од њих оболева на десетине милиона европске популације. Она су прогресивна и доживотна, често неизвесних исхода лечења, а настају као резултат садејства многобројних наследних и спољашњих фактора. Интересантно је да савремена наука до данас није идентификовала тачне комбинације фактора које доводе до настанка аутоимунских обољења, али је познато да је инфекција Епштајн-Бар вирусом један од најзначајнијих окидача из спољашње средине. ROLERS пројекат први пут у свету испитује различите фазе болести пацијената са реуматичним артритисом и системским еритемским лупусом са вирусолошке тачке гледишта и коришћењем директне вирусолошке методологије. Резултати овог свеобухватног истраживања као крајњи циљ имају добробит пацијената, јер су сви чланови ROLERS тима не само научници, већ и лекари. Откриће вирусолошких биомаркера прогнозе болести или предиспозиције за исход терапије, била би важна карика за креирање протокола скрининга и лечења, па би помогла и колегама клиничарима који се свакодневно носе са изазовима када је у питању лечење ових пацијената.

Шта за вас значи чињеница да је ваш пројекат одобрен за финансирање у оквиру Програма за изворне пројекте младих истраживача Фонда за науку?

Прекретницу у будућем концепту научних пројеката у Србији. Чињеница да је пројекат изузетно мотивисаног и креативног ROLERS тима одобрен за финансирање у конкуренцији скоро 600 пријављених, обезбедила је, на првом месту, ресурсе за реализацију нових научних истраживања. Међутим, много више од тога јесте оно што као млади истраживачи добијам на индиректан начин – самосталност, мотивацију, знање, искуство и основу за развој следећих идеја и будуће међународне сарадње. На организованом радионицима и отвореним вратима добили смо много практичних савета и одговор на сваку дилему коју смо имали, а без тога не верујем да бисмо успели. Изворна

идеја у коју смо веровали могла је бити реализована само уз тимски рад и бескомпромисну посвећеност у изради најбоље верзије предлога пројекта. Дали смо изградити при сваком изазову вишемесечан процес евалуације и због тога зашта морам истаћи колико сам поносна на ROLERS тим који чине Данијела Миљанковић, Анађа Ђурковић, Милка Грк, Ивана Лазаревић, али и неколико колега који нису званични чланови тима, а који поддржава, чак и у овим пандемијским условима, улажу огромну енергију у успех пројекта.

Тема која је тренутно у жижи јавности јесу вакцине против ковида-19. Међутим, могу ли нас управо људи са аутоимуним обољењима кочити на путу до стицања колективног имунитета?

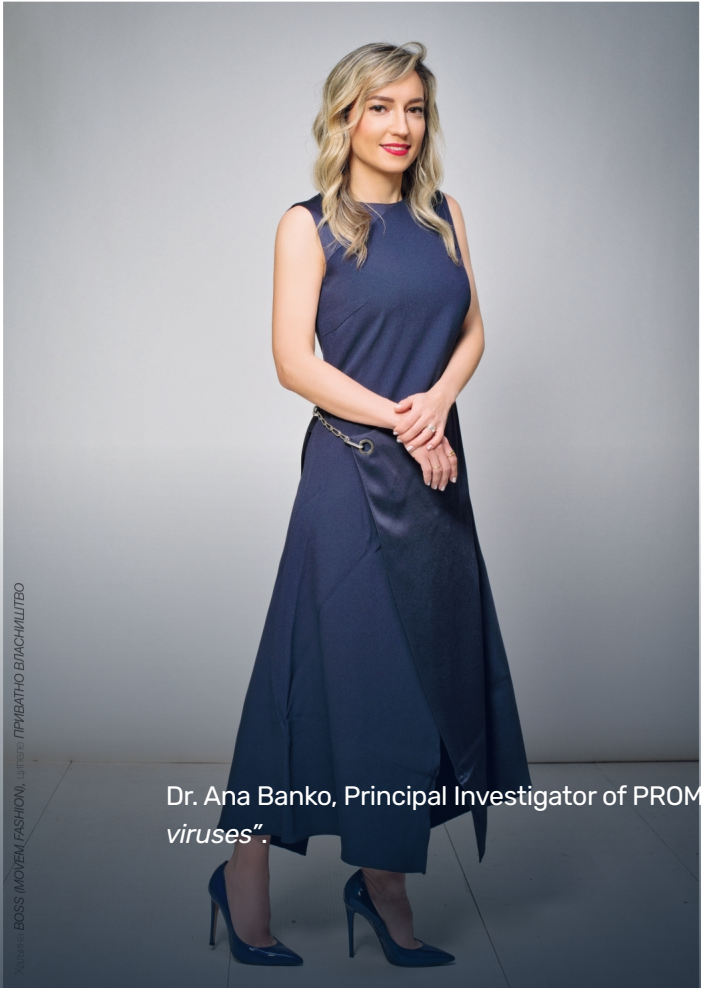
То јесте једна од почетних заблуда, која такође говори колико су аутоимуне болести још увек велика мистерија. Иако до сада није вршено клиничко испитивање вакцина баш на овој популацији, после неколико месеци масовне примене вакцине званично су се отпосила међународна стручна удружења са препорукама за вакцинацију и разашњење дилема. Само она група пацијената која је у активnoj фази болести и на интензивној имуносупресивноj терапији или терапији моноклоналним антителима, у датом тренутку не прима вакцину.

Може ли нам се у блискоj будућности догодити још неки вирус као корона?

Познато је да бројни вируси природно циркулишу међу дивљим животињама попут слепих мишева или дивљих птица. Како се људска популација шири и своја станишта приближава дивљини, долази до шанси за прилагођавање вируса на људе као нове домаћине. Овај еволутивни развој вируса називамо прескок баријере врсте и то се дешава не само код коронавируса, већ и код вируса грипа, на пример. Епидемије и пандемије су зато очекивана појава чији обим не можемо унапред да предвидимо. Али ако смо у последњих 20 година имали чак две епидемије коронавируса попут SARS-а и MERS-а, логично је било очекивати и следећег представника. Суштина је да искуства из сваке епидемије и пандемије морамо сакупити у циљу што боље припреме за неку од предстојећих.

Као доценткиња на Институту за микробиологију и имунологију Медицинског факултета, шта бисте рекли, где смо ми у односу на остатак света када је реч о микробиологији?

Веома деценијама истраживања микробиолошких организима у Србији су интензивна и бројни су резултати на које можемо бити поносни. Наша предност везана је за специфичности патогена овог географског поднебља, а која се манифестују у њиховој дистрибуцији, варијабилности генома или резистенцији на лекове. Идеје младих научника су креативне и иновативне и уводе нови тренд окупљања мултидисциплинарних истраживачких тимова, али за савремена истраживања неопходно је користити и савремену технологију која се убрзано развија и унапређује. Нажалост, доступност ове технологије често нам је онемогућена из финансијских разлога. ■



Dr. Ana Banko, Principal Investigator of PROMIS project ROLERS, Magazine Bazar “Ready for new viruses”



Dr. Jelena Slivka, Principal Investigator of AI project CleanCADET, Magazine Bazar "Ideal life with software".

ИДЕАЛАН СВЕТ УЗ СОФТВЕРЕ

Др Јелена Слипка руководи пројектом *Clean CADET* у оквиру Програма за развој пројеката из области вештачке интелигенције. Верује да савремене технологије, ако их користимо паметно и хумано, од ове планете могу да направе боље место за живот. У том смеру и води свој тим који ради на креирању нових софтвера чији квалитет не захтева прескупку израду, а грешке своди на минимум. Осим што је једна од перјаница Фонда за науку, Јелена је и ванредна професорка на Факултету техничких наука Универзитета у Новом Саду, велика љубитељка мачака и жена која стварног увек посматра са позитивним животним ставом.

Број жена истраживача у области вештачке интелигенције континуирано расте. Шта је било пресудно да се ви лично заинтересујете за софтвере који ће олакшати живот и рад савременом човеку?

Област вештачке интелигенције привукла ме је још на основним студијама. Сво је последица труда професора и асистената да кроз своја предавања и предметне задатке ову област учине интересантном и приступаном. Касније сам имала срећу да се запослим на Катедри за информатику Факултета техничких наука, која негује дугу традицију истраживања у овој области. Моје интересовање даље је утврдила подршка колега и ментора који су несобично делили своје знање и усмеравали ме.

Шта је заправо циљ пројекта *Clean CADET* чији сте руководилац и како ће он допринети свима нама који живимо у Србији?

Циљ *Clean CADET* пројекта јесте омогућавање јефтинијег развоја квалитетног софтвера. Квалитет софтвера је битан јер је некавалитетан софтвер непоуздан, а његов развој и унапређење временом постају прогресивно скупи. Данас су софтверски произвођачи под великим притиском да брзо развију нова решења, што има за последицу да се квалитет софтвера често занемарује у корист развоја нових функционалности. Некавалитетан софтвер може бити и последица неискуства програмера. Због све веће потражње за овом професијом, процене су да у сваком моменту половина инжењера има мање од пет година радног искуства. С друге стране, способност произвођача квалитетног софтвера стиче се кроз више година активног рада на развоју све вештине. Наша амбиција је да *Clean CADET* дигитални асистент поклопне програмима у обуци и индустрији у Србији и широм света да идентификују проблеме у свом коду и унапреде своју вештину.

Софтвери су ушли у готово све поре наших живота. Шта бисте рекли онима који су према оваквој врсти пословних алата скептични?

Данас развијамо далеко брже него што смо ми у стању да се адаптирамо. Дешава се да нисмо на време сагледали негативне последице примене одређене технологије. Када смо развили друштвене мреже, очекивали смо повезивање

заједнице, а не поларизацију друштва и онлајн малтретирање. Технологија убрзује и потребу за променама у социјалном поретку јер се аутоматизацијом послова губе одређена занимања. Међутим, технологија има огроман потенцијал да унапреди живот човека. Аутоматизацијом растерећемо људе послова који су им заморни и досадни, цене производа и услуга се смањују и постају доступни ширкој популацији. У идеалном свету, развили бисмо технологију у тој мери да имамо универзални основни приход који би решио проблем сиромаштва и фокусирали бисмо се на очување природе, социјалне односе, уметност и културу. Моје мишљење је да се не би требало одрећи ових понављача. Ипак, од изузетне важности је да уложимо труд у развој закона, темељне анализе последица примене технологије и едукацију људи.

Као стипендиста Универзитета Темпл боравили сте у Филаделфији, где сте се усавршавали у Центру за аналитику података и биомедицинску информатику. Шта је оно што представља предност Запада када је реч о вештачкој интелигенцији и где је Србија у односу на тај део света?

Велика разлика коју сам оучила јесте ангажман у настави - код нас је он доста већи, те мање времена остаје за истраживање. Такође, у нашем домену суочени смо са потешкоћом проналаaska нових сарадника јер је рад у индустрији значајно исплативији. Додатно, потребно је све више наставног кадра јер расте број младих заинтересованих за студирање ове области. Због отпорења наставом, рад на научним истраживањима је тежак и спор, док је код колега у иностранству фокус на научноистраживачком раду. Управо зато, иницијатива Фонда за науку да финансира истраживачке пројекте изузетно је важан корак у решавању овог проблема.

Колико су жене у науци данас равноправни партнери мушкарцима?

Умем да одговорим само из личног угла.

Колектив у коме се налазим увек је према мени био коректан и прижао ми несобичну подршку. Увек сам се осећала као његов равноправан члан.

Како је то бити научница у Србији? Како изгледа један ваш радни дан?

Тренутно делим своје радно време равноправно између рада на *Clean CADET* пројекту и рада у настави. На пројекту велики део времена одлази на проучавање литературе. Прикупљено знање се затим кристалише кроз дискусије са члановима тима, где покушавамо заједно да одредимо приоритет имплементације прикупљених идеја, расподелимо задатке и одредимо рокове. Сваки део посла јесте и писано извештаја. Рад у настави подразумева дизајнирање наставних материјала који су привлачни и разумљиви, окупљање менторства и блиско сарадњу са заинтересованим студентима. Сва посла су захтевна, у смислу да се постигну резултати увек могу унапредити. Изазов је и начиница да смо у великој мери сами на начин на који можемо да га унапредимо, па је битна самодисциплина и спремност да се тражи и размисли туђе мишљење. А када је реч о предностима, онда је то свакако флексибилно радно време.



Dr. Milica Vujković, Dr. Mirjam Vujadinović Mandić, Dr. Aleksandra Buha Đorđević, Dr. Nikola Unković, Dr. Đurđa Kerkez, and Dr. Marko Spasenović, Principal Investigators of PROMIS projects, Magazine Original "The bearers of the torch that illuminates world".





Čovek svojim direktnim delovanjem uništava šume, prirodna staništa medonosne pčele, a takođe doprinosi i nestanku livada koje predstavljaju idealno mesto na kojima pčele i drugi oprašivači nalaze hranu. Savremena poljoprivredna praksa zasejavanja velikih površina pod monokulturama smanjuje raznovrsnost hrane koja je od velikog značaja za zdravlje pčela. Neke od modernih pčelarskih praksi poput migratornog pčelarstva i kupovine matice poreklom iz udaljenih geografskih regiona doprinose genetičkoj uniformizaciji pčelinjih društava, što predstavlja problem kada dođe do naglih promena uslova životne sredine. Naše istraživanja, kao i istraživanja sprovedena u inostranstvu, pokazala su da divlja društva medonosnih pčela poseduju veću genetičku raznovrsnost od gajenih. Ta genetička raznovrsnost predstavlja potencijal organizama da se prilagode promenljivim uslovima životne sredine i odgovore na pritiske različitih bolesti i parazita. Zato je važno da sprečimo genetičku uniformizaciju i sačuvamo lokalne genetičke varijante.

DR SLOBODAN DAVIDOVIĆ PROJEKAT „SERBHIWE“ PROJECT SERBHIWE

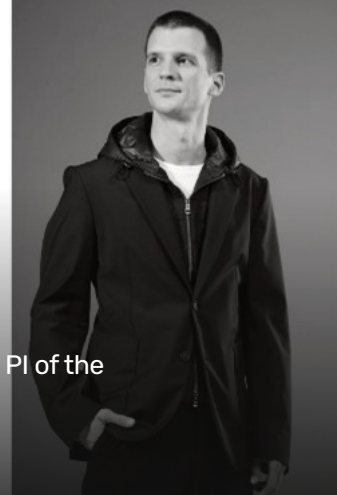
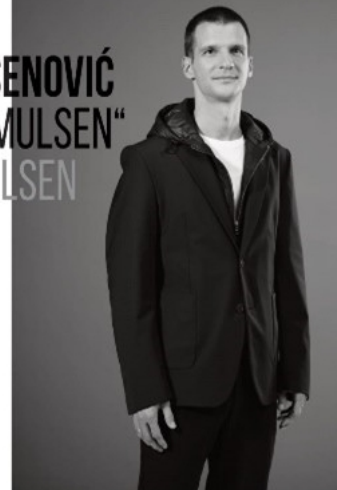
With their actions humans directly destroy forests, natural habitats of honey bees, and they also have a role in the disappearance of meadows, which are the perfect place for bees and other pollinators to find food. Modern agricultural practices of sowing large areas with monoculture reduces the diversity of food that is very important for the health of bees. Some of the modern beekeeping practices, like migratory beekeeping and buying queen bees from distant geographical regions, contribute to the genetic uniformization of bee societies, which is problematic when sudden changes in environmental conditions occur. Our study, as well as those conducted abroad, has shown that wild honeybee societies are more genetically diverse than the bred ones, and thus represents the potential to adapt and to counter different diseases and parasites, that is why it is important to prevent genetic uniformization and save local genetic varieties.

Dr. Slobodan Davidović, PI of the PROMIS project SERBHIWE, and Dr. Marko Spasenović, PI of the PROMIS project Gramulsen.

DR MARKO SPASENOVIĆ PROJEKAT „GRAMULSEN“ PROJECT GRAMULSEN

Grafen i drugi materijali dvodimenzionalne ugljeničke strukture koji su otkriveni pre više od 15 godina, imaju debljinu samo jednog atoma ili molekula, što je oko 100.000 puta tanje od jedne ljudske dlake. Oni se nazivaju „plastikom 21. veka“, jer se očekuje da promene svet u meri u kojoj je to učinilo otkriće i masovna upotreba plastike u prethodnom veku. Među primenama koje su blizu tržišnog ostvarenja, jesu baterije visokog kapaciteta koje se veoma brzo pune, a koje se koriste za mobilne uređaje i električne vozila, brzi detektori svetla za upotrebu u optičkim telekomunikacijama, i specifični brzi i precizni biosenzori, nalik antigenim testovima za COVID. U budućnosti možemo očekivati čak i filtere za decimilijardju vode. Mi razvijamo detektor ugljen-doksida koji bi mogao da se integriše u senzor koji osoba može da nosi na telu, u sklopu odeće. Senzor bi bio koristan za visokorazlične profesije u kojima su ljudi izloženi koncentracijama ugljen-doksida, poput vatrogasaca, radnika i radnika u određenim fabrikama. U skorijoj budućnosti će odeće koje je često izloženo opasnim uslovima nositi lagane senzore, a posadi sa senzora će se slati u neku centralu radi boljeg nadzora zdravstvenog stanja osoblja ili okruženja u kojem se radnici nalaze.

Graphene and other "two-dimensional materials", that were discovered more than 15 years ago, have the thickness of only one atom or molecule, which is around 100,000 times thinner than a human hair. They are called the "21st century plastic", because it is expected that they will change the world as much as the mass use of plastic did in the previous century. The examples that are close to being on the market are quickly rechargeable high-capacity batteries for cellphones and electric vehicles, fast light detectors for use in optical telecommunication, and specific, fast and precise biosensors, similar to antigen tests for COVID. We can even expect the filters for the desalination of water in the future. We are developing a carbon dioxide detector that could be integrated in a sensor that a person can carry on their body, as part of their clothing. The sensor would be useful for professions with a high risk of exposure to carbon dioxide, like for firefighters, the people who work in dangerous conditions, and carry light sensors, and the data from the sensors will be sent to a headquarters for a better supervision of personnel's health or the workers' environment.



Tekstilna industrija, osim što je jedna od najvećih potrošača vode za godišnjom upotrebom oko 80 milijardi kubnih metara vode, zahteva i intenzivno korišćenje hemikalija, oko 8000 različitih hemijskih komponenti. Tekstilni materijali koji u najvećoj meri zagađuju vodu, jesu sintetički materijali koji sadrže mikrovlakna na bazi plastike kao što su poliestar, akril, najlon i sl. Zbog toga je potrebno podržati brendove „spore mode“, kao i proizvođače koji koriste zelene integrirane tehnike i cirkularni model u svojoj proizvodnji. „WasteWaterForce“ projekat teži da ojača zeleni koncept i ekološki održiva rešenja u sektoru otpadnih voda. Ispitujemo potencijal upotrebe zelenih održivih katalizatora u tretmanu ovih voda gde su uključeni i fotokatalitički procesi na bazi solarne energije. Naš tim zapravo nastoji da integriše zelene materijale sa obnovljivim izvorima energije koji će se koristiti u tretmanu otpadnih voda. Ovak vid istraživanja je veoma složen i zahteva multidisciplinarnost, te će se kroz projekat razviti onaj „WasteWaterForce“ hab, kao mesto okupljanja akademske zajednice, privrednog sektora, ali i šire javnosti kako bi se stvorila platforma za saradnju, razvoj novih ideja i rešenja za održivo upravljanje otpadnim vodama.

Apart from being one of the largest water consumers, the textile industry, with the consumption of around 80 billion cubic meters of water per year, also requires the use of chemicals – around 8000 different chemical components. Textiles that are the largest water polluters are synthetic materials that contain plastic-based microfibers such as polyester, acrylic, nylon, etc. That is why it is important to support the "slow fashion" brands, as well as the manufacturers that use green techniques and a circular model in their manufacturing. WasteWaterForce project strives to strengthen the green concept and ecologically sustainable solutions in the wastewater sector. We examine the potential to use green sustainable catalysts in wastewater treatment, which also includes the photocatalytic processes based on solar energy. Our team actually intends to integrate green materials with renewable energy resources that will be used in the wastewater treatment. This type of research is very complex and requires multidisciplinary. As part of the project, an online WasteWaterForce HUB will be developed, as the meeting place for the academic community, economic sector, as well as the general public, in order to create a platform for cooperation, coming up with new ideas and solution for sustainable wastewater management.

DR ĐURĐA KERKEZ PROJEKAT „WASTEWATERFORCE“ PROJECT WASTEWATERFORCE



Dr. Đurđa Kerkez, PI of the PROMIS project WasteWaterForce, and Dr. Kristina Pogrmić Majkić, PI of the PROMIS project DETOX.



DR KRISTINA POGRMİĆ MAJKIĆ PROJEKAT „DETOX“ PROJECT DETOX

Postoje brojne dileme koje se tiču uticaja ftalata na ljudsko zdravlje. Ftalati su hemikalije koje se široko koriste u proizvodima od plastike, u proizvodnji pribora za domaćinstvo, medicinskih sredstava, kablova, nalaze se u PVC podnim oblogama, opremi za bebe, igračkama za decu, odeći i sl. Jedan od najčešće korišćenih ftalata je DEHP koji je pronađen u ljudskoj krvi, majčinom mleku i urinu, što ukazuje da smo mu u velikoj meri izloženi. Pored brojnih istraživanja, ostaje nejasno da li DEHP dovodi do smanjenja reproduktivnih funkcija kod žena, da li dovodi do neplodnosti, koje doze su sigurne, a ostaje nejasan i mehanizam delovanja na ćelijskom nivou. Rezultati DETOX projekta treba da doprinesu rešavanju potencijalne veze između izloženosti DEHP-u i neplodnosti kod žena, važnog problema ne samo za Srbiju, nego i šire. Naše istraživanje doprineće donošenju odgovarajućih regulativnih mera kojima bi se ograničila upotreba ovog ftalata. Bolja kontrola upotrebe DEHP-a trebalo bi da doprinese stvaranju manje toksičnog okruženja, ali i smanjivanju ili potpunom eliminaciji rizika po zdravlje ljudi.

There are many dilemmas when it comes to the effect of phthalates on human health. Phthalates are chemicals that are widely used in products made of plastic, in the production of household equipment, medical devices, cables, PVC floor coverings, baby equipment, toys for children, clothing, etc. One of the most commonly used phthalates is DEHP which has been found in human blood, mother's milk and urine, which suggests that we are highly exposed to it. Despite numerous studies, it is still unclear whether DEHP reduces reproductive function in women, if it leads to infertility, what doses are safe, and the action mechanism on the cellular level is not clear as well. The results of the DETOX project should help clarify the potential connection between the exposure to DEHP and female infertility – an important issue not only in Serbia, but even wider. Our research will contribute to the adoption of appropriate regulations that would limit the use of phthalates in the environment. The use of DEHP should help eliminate the risks for human health.



Science Fund on Social Networks



Instagram

fondzanauku_rs

https://www.instagram.com/fondzanauku_rs/



Twitter

fondzanauku_rs

https://twitter.com/fondzanauku_rs



Facebook

Science Fund of the Republic of Serbia

<https://www.facebook.com/FondZaNauku/>



LinkedIn

Science Fund of the Republic of Serbia

<https://www.linkedin.com/company/science-fund-of-the-republic-of-serbia/>



YouTube

Science Fund of the Republic of Serbia

<https://www.youtube.com/channel/UCHrCqk9b0B14mcgM9meHnEA>

Final Remarks

Since the establishment, the Science Fund has opened five programs for financing scientific projects that will enhance the capacity of young researchers, improve scientific cooperation with Serbian scientific diaspora, create new technological achievements with the use of artificial intelligence, enable solving the problems caused by the COVID-19 pandemic, and support projects based on outstanding ideas. Through the highly competitive selection process (10–15% success rate), 282 scientific projects have been approved for funding within five SFRS programs. Almost 10% of researchers in Serbia have gotten the opportunity to implement their extraordinary research ideas.

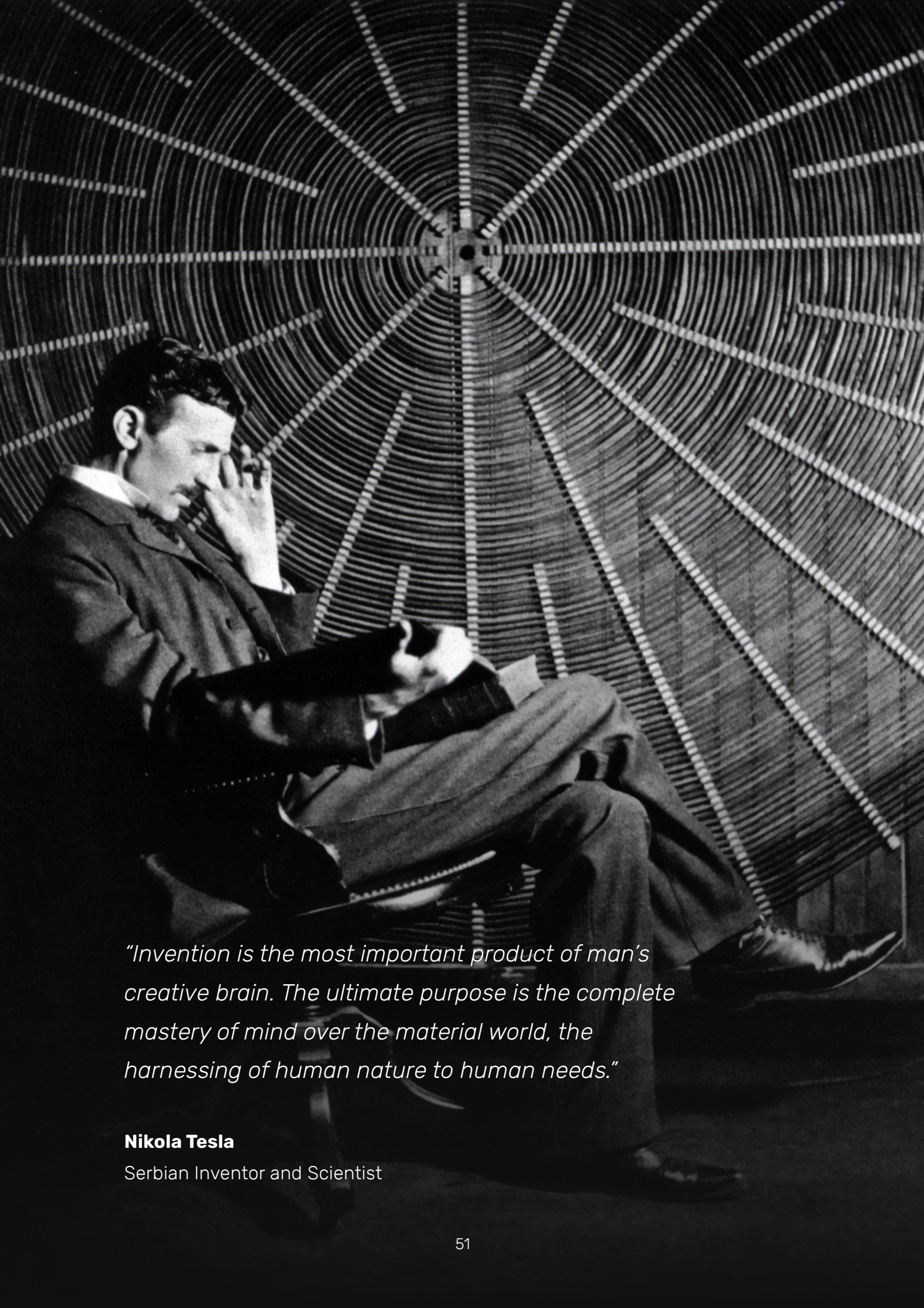
Although only at the middle of the project duration, researchers supported by the Science Fund have already published several dozen scientific publications in high-impact international scientific journals. In addition, the potential for cooperation with the industry has been identified on many projects.

In the coming period, Science Fund will open four new programs: IDENTITIES, open to the research fields of social sciences and humanities; Green program for science and industry collaboration to reduce environmental pollution; Joint research program for cooperation with Serbian diaspora; PRISMA program focused on national research priorities and strategies. Science Fund will support important research projects that will strive to help some of modern society's identified needs and challenges.

Science Fund's Programs have been developed with the finance provided by the Republic of Serbia (Ministry of Education, Science, and Technological Development), through a 26 million euro World Bank loan with implementation support, and the European Union, through a 17 million euro grant. International connectivity is particularly vital for Science Fund to maintain and expand the research capacity of the Serbian scientific community. In the coming period, the Science Fund will continue to strengthen cooperation with partner institutions in Europe and worldwide to improve procedures, develop new programs, and create joint programs for financing scientific research.

Science communication and high visibility of scientific results will remain one of the priorities of the Science Fund. Science Fund pays great attention to promoting projects through different communication channels. Our researchers' higher visibility and their projects can inspire new collaborations among researchers and new partnerships with the industry. Still, it also raises awareness of the importance of science and its contributions to our daily lives and work.

Science Fund will continue to support excellent ideas that will directly contribute to the development of science in Serbia and worldwide.



"Invention is the most important product of man's creative brain. The ultimate purpose is the complete mastery of mind over the material world, the harnessing of human nature to human needs."

Nikola Tesla

Serbian Inventor and Scientist

Appendix

List of Active Projects

1. Program for Excellent Projects of Young Researchers – PROMIS

List of projects approved for funding can be found on the [following link](#)



2. Program for Development of Projects in the Field of Artificial Intelligence

List of projects approved for funding can be found on the [following link](#)



3. Special Research Program on COVID-19

List of projects approved for funding can be found on the [following link](#)



4. Serbian Science and Diaspora Collaboration Program: Knowledge Exchange Vouchers

List of projects approved for funding can be found on the [following link](#)



5. Program IDEAS

List of projects approved for funding can be found on the [following link](#)

