Application in the first competition in the framework of the "Excellence initiative – research university" programme

A. APPLICANT'S DETAILS AND DECLARATIONS

Name of the entity:	Jagiellonian University in Cracow
Address:	ul. Gołębia 24, 31-007 Kraków, małopolskie
ePUAP electronic inbox address:	/uj/CAWP
Phone number:	(12) 633-11-00
E-mail address	rektor@uj.edu.pl
Website address	www.uj.edu.pl
NIP tax identification number	6750002236
REGON national business registry number	000001270
Head of the entity	prof. dr hab. med. Wojciech Nowak, Rektor, Professor, rektor@uj.edu.pl

I declare that the information contained in the application conforms to the factual and legal circumstances.	YES
I declare that the information contained in the application in Polish and English is the same content-wise.	YES
I agree to receive and send correspondence by electronic communication within the meaning of Article 2(5) of the Act of 18 July 2002 on provision of services by electronic means (Journal of Laws, 2019, item 123) in connection with submitting the application.	YES

B. DATA ON THE UNIVERSITY ACTIVITIES

		Total number of students	of which students in full-time programmes
Number of students (as of 31 December 2018)	First-cycle programmes	15,957.00	14,592.00
	Second-cycle programmes	10,577.00	8,919.00
	Long-cycle programmes	8,911.00	6,776.00
	Grand total	34,652.00	29,640.00

		Value from POL-on system
Number of graduates, who were granted the degree in 2018	Number of graduates, who were granted the degree of *licencjat, inżynier* or equivalent [first cycle degree]	3,402.00
	Number of graduates, who were granted the degree of *magister, magister inżynier* or equivalent [master degree]	4,608.00
	Grand total	7,993.00
Number of doctoral students (as of 31 December 2018)	Total number of doctoral students	2,744.00
	of which doctoral students in full-time doctoral programmes	2,502.00
Number of Ph.D. degrees awarded in 2018		346.00

Number of academic teachers and other employees (in full time equivalents, as of 31 December 2018)	Total number of academic teachers	4,128.87
	Number of academic teachers employed as professor or associate professor	687.98
	Number of academic teachers with teaching activities constituting their primary responsibility	624.49
	Number of academic teachers with research and teaching activities in the scope of their responsibilities	3,169.79
	Number of academic teachers with research activities constituting their primary responsibility	316.59
	Number of other employees (other than academic teachers)	443.35
Research quality ratings awarded to the university's research units as of 30 September 2018	Number of university's units, which are research units within the meaning of the Act of 30 April 2010 on the Principles of Science Financing (Journal of Laws, 2018, item 87)	18.00
	Number of university's units with research quality rating A+	6.00
	Number of university's units with research quality rating A	11.00
	Number of university's units with research quality rating B	0.00
	Number of university's units with research quality rating C	0.00
Fields of science (as defined in the regulations issued on the basis of Article 3 of the Act of 14 March 2003 on Academic Degrees and Academic Title and Degrees and Title in Arts, Journal of Laws, 2017, item 1789), in which university's units were authorised to confer a degree of *doktor habilitowany* (post-doctoral degree) as of 30 September 2018	• biological sciences • chemical sciences • economic sciences • pharmaceutical sciences • physics and astronomy • humanities • mathematical sciences • medical sciences • Earth sciences • health care sciences • legal sciences • social sciences	

Total revenue in 2018 (in PLN) as reported to Statistics Poland in the statistical report F-01/s	Total revenue		1,236,801,100.00
	Revenues from teaching activity	Total	929,199,000.00
		State budget grants	689,003,400.00
		Funds from gminas' (municipalities') budgets and other public funds	355,700.00
		Fees for teaching services	93,304,300.00
	Revenues from research activity	Total	266,307,500.00
		Funds for financing international scientific cooperation	39,047,500.00
		State budget grants for financing statutory activity	67,556,700.00
		Funds for the implementation of projects financed by the National Centre for Research and Development	19,880,100.00
		Funds for the implementation of projects financed by the National Science Centre	111,100,800.00
		Sale of other research and development works and services	3,789,500.00
		Funds for the implementation of programmes and undertakings defined by the Minister of Science and Higher Education	17,147,000.00
	Other revenues		7,785,900.00

Disciplines of science, in which the university is authorised to confer a degree of *doktor habilitowany* (post-doctoral degree) according to the communication referred to in Article 177(3)(2) of the Act of 3 July 2018 on the Implementation of the Law on Higher Education and Science (Journal of Laws, 2018, item 1669, as amended), or it is authorised on the basis of Article 175 or Article 176 of this act	• 1.1 - Humanities/Archaeology • 1.2 - Humanities/Philosophy • 1.3 - Humanities/History • 1.4 - Humanities/Language and linguistics • 1.5 - Humanities/Literature • 1.6 - Humanities/Cultural and religious studies • 1.7 - Humanities/Arts studies • 3.1 - Medical and health sciences/Pharmacology and pharmacy • 3.2 - Medical and health sciences/Medical sciences • 3.4 - Medical and health sciences/Health sciences • 5.11 - Social sciences/Psychology • 5.2 - Social sciences/Social and economic geography, and spatial management • 5.5 - Social sciences/Political and administrative sciences • 5.6 - Social sciences/Management and quality science • 5.7 - Social sciences/Law • 5.8 - Social sciences/Sociology • 5.9 - Social sciences/Educational sciences • 6.1 - Natural sciences/Astronomy • 6.2 - Natural sciences/Computer and information sciences • 6.3 - Natural sciences/Mathematics • 6.4 - Natural sciences/Biological sciences • 6.5 - Natural sciences/Chemical sciences • 6.6 - Natural sciences/Physical sciences • 6.7 - Natural sciences/Earth and related environmental sciences
Were all fields of study, in which degree programmes are provided by the university and which were assessed by the State Accreditation Committee, given, as of 30 September 2018, at least conditional assessment?	Yes

C. SWOT ANALYSIS

Summary of the SWOT analysis

The multi-stage SWOT analysis covered the complete spectrum of scientific disciplines practised at the Jagiellonian University and associated teaching activities and doctoral students' education, in the perspective of the university internal and external operating conditions.

The analytical process consisted of 3 stages: preparation of preliminary team SWOT analyses, carrying out of the in-depth SWOT analyses in light of the aforementioned objectives and identification of research priority areas (POBs). The results of the SWOT analysis led to the selection of 7 POBs, where the University is already highly positioned in the international scientific community and its potential generated by the intellectual capital enables further reinforcement of competitiveness in the selected areas. At the same time, the expansion of the POBs is anticipated on a global scale as they are in line with the current scientific, social, economic and cultural trends; and are fostered by the current and future political, legal and systemic developments.

The POBs were selected based on the strengths of the University and the opportunities offered by its environment. The POBs have been determined to be based and developed on the following foundations:

COMPETENCE

- research competences of academic employees,
- growing efficiency in obtaining prestigious grants,
- the experience of employees in managing international projects,
- internationalisation of the education process, including courses offered in English,
- projects for improving students' research, professional and linguistic competences as well as teaching competences of academic teachers,
- experienced staff providing the appropriate scientific and research environment for the evolution of young scientists.

RESEARCH ACTIVITY

- publishing activity in the top quartile of journals,
- a wide range of scientific disciplines with potential for interdisciplinary research,
- application character of research,
- active participation in the work of international university networks,
- tangible results of international research collaboration,
- worldwide recognition of selected researchers.

MANAGEMENT

- specialised administrative units supporting international cooperation,
- funding streams addressed to researchers at different stages of their careers,
- integrated IT systems supporting management,
- decentralisation of university management,
- promotions of managers based on experience.

ASSETS

- research infrastructure and equipment supporting research and education,
- access to the university's extensive education offer as well as research infrastructure and equipment

RELATIONAL CAPITAL

- a considerable number of cooperation agreements with foreign centres.

The strengths of the University will be maximized through effective use of the following opportunities:

POLITICAL ENVIRONMENT

- national academic policy fostering the concentration of expenditures in the best research units,
- recommendations of the European Commission on the development of scientists and international

standards stimulating the scientific growth of employees,
- flexibility in the use of public subsidies.

SYSTEMIC CONDITIONS
- the participation of doctoral schools in research,
- national and international programmes supporting the professional growth of academic staff,
- development of standards and good practices in terms of university management,
- participation of external stakeholders in the management of the university.

WORLDWIDE TRENDS
- advancement of selected sectors of the economy related to the research activity of universities,
- social and economic trends stimulating the demand for research,
- the correlation of university research areas with the priorities of European and world science,
- research areas of global character and significance,
- increased interest in studies in Poland among students from countries of Eastern Europe and Asia.

NATIONAL AND INTERNATIONAL RELATIONS
- intensifying cooperation with the world's leading research centres,
- unique industrial environment of Kraków and cooperation of the university with high-tech companies,
- fostering the growth of international research-oriented university networks,
- the appealing character of Kraków in terms of communication, culture and business environment,
- location of the university in the vicinity of a technology park and research and development units.

NEW TECHNOLOGIES
- progress of information technology to facilitate international networking and communication between researchers,
- the use of advanced modern technologies in teaching,
- digitisation of the university.

The summary of strengths and opportunities points to specific objectives grouped into six categories and actions guaranteeing their achievement. They cover the areas of research, international cooperation, education, competence development, management and brand building of a sustainable university and are geared towards intensifying the use of the human capital of the university and fostering of its professional competence, while building a research ecosystem and research culture oriented towards interdisciplinarity, internationalisation and intersectoralism, as well as bridging research and education.

The research activity under POBs and achieving specific objectives is not fully impartial towards the conditions resulting from the weaknesses of the university as well as the threats identified in its environment. However, first of all, the impact of weaknesses and threats on the achievement of objectives is significantly smaller than in the case of strengths and opportunities, and secondly, the extensive measures established by the university make it possible to eliminate most of the weaknesses and at the same time significantly reduce the risk associated with the anticipated threats.

Attachment no1, File: SWOT_ENG.pdf

No.	PRIORITY RESEARCH AREAS (POB – PRIORYTETOWY OBSZAR BADAWCZY) IDENTIFIED WITHIN THE SWOT ANALYSIS	
1.	Description of the POB scope	Heritage - cultural heritage (identity of individuals and entire societies, language, civilizational challenges of modern world).

Fields and disciplines of science laid down in the Regulation of the Minister of Science and Higher Education of 20 September 2018 on fields and disciplines of science and disciplines of arts (Journal of Laws, item 1818), related to POB	Web of Science *subject categories* related to POB	Scopus ASJC *(all science journal classification)* categories related to POB

• 1.1 - Humanities/Archaeology • 1.2 - Humanities/Philosophy • 1.3 - Humanities/History • 1.4 - Humanities/Language and linguistics • 1.5 - Humanities/Literature • 1.6 - Humanities/Cultural and religious studies • 1.7 - Humanities/Arts studies • 5.1 - Social sciences/Economics and finance • 5.6 - Social sciences/Management and quality science • 5.7 - Social sciences/Law	- Anthropology - Archaeology - Architecture - Art - Business, Finance - Classics - Communication - Cultural Studies - Dance - Economics - Film, Radio, Television - Folklore - History - History & Philosophy of Science - History of Social Sciences - Humanities, Multidisciplinary - Information Science & Library Science - International Relations - Language & Linguistics - Law - Linguistics - Literary Reviews - Literary Theory & Criticism - Literature - Literature, British Isles - Literature, German, Dutch, Scandinavian - Literature, Romance - Literature, Slavic - Management - Medieval & Renaissance Studies - Music - Philosophy - Poetry - Political Science - Public Administration - Religion - Theater - Womens Studies	- General Arts and Humanities - Arts and Humanities (miscellaneous) - History - Language and Linguistics - Archaeology - Classics - Conservation - History and Philosophy of Science - Literature and Literary Theory - Museology - Music - Philosophy - Religious studies - Visual Arts and Performing Arts - General Business, Management and Accounting - Business, Management and Accounting (miscellaneous) - Accounting - Business and International Management - Management Information Systems - Management of Technology and Innovation - Marketing - Organizational Behavior and Human Resource Management - Strategy and Management - Tourism, Leisure and Hospitality Management - Industrial relations - General Economics, Econometrics and Finance - Economics, Econometrics and Finance (miscellaneous) - Economics and Econometrics - Finance - Archaeology - Law - Linguistics and Language

	Fields of study related to POB	History; History of art; Archeology; Preservation of cultural heritage; Ethnology; Philosophy; Cognitive Science; Musicology; Jewish studies; Cultural studies; Religion studies; Sociology; Polish philology (teaching, cultural anthropology, The Polish language in social communication; Polish comparative studies); Drama studies; Foreign language philologies; Literary Translation; Administration; Linguistics; Literature; Law; Art studies; Economy; Management	
2.	Description of the POB scope	FutureSoc - interdisciplinary research on social changes caused by the development of new technologies and the cognitive sciences (politics, security, law, management, mind, communication, society).	
	Fields and disciplines of science laid down in the Regulation of the Minister of Science and Higher Education of 20 September 2018 on fields and disciplines of science and disciplines of arts (Journal of Laws, item 1818), related to POB	Web of Science *subject categories* related to POB	Scopus ASJC *(all science journal classification)* categories related to POB
	• 1.2 - Humanities/Philosophy • 5.1 - Social sciences/Economics and finance • 5.2 - Social sciences/Social and economic geography, and spatial management • 5.3 - Social sciences/Safety science • 5.4 - Social sciences/Media and communications • 5.5 - Social sciences/Political and administrative sciences • 5.6 - Social sciences/Management and quality science • 5.7 - Social sciences/Law • 5.8 - Social sciences/Sociology • 5.9 - Social sciences/Educational sciences • 5.11 - Social sciences/Psychology • 6.2 - Natural sciences/Computer and information sciences	- Anthropology - Area Studies - Behavioral Sciences - Business - Business, Finance - Communication - Computer Science, Artificial Intelligence - Computer Science, Information Systems - Computer Science, Interdisciplinary Applications - Criminology & Penology - Cultural Studies - Demography - Economics - Education & Educational Research - Education, Scientific Disciplines - Education, Special - Environmental Studies - Ergonomics - Ethics - Ethnic Studies - Family Studies - Geography - Gerontology - Green & Sustainable	- Philosophy - General Business, Management and Accounting - Business, Management and Accounting (miscellaneous) - Business and International Management - Management Information Systems - Management of Technology and Innovation - Organizational Behavior and Human Resource Management - Strategy and Management - Tourism, Leisure and Hospitality Management - Industrial relations - Artificial Intelligence - Computer Networks and Communications - Human-Computer Interaction - Information Systems - General Decision Sciences - Decision Sciences (miscellaneous) - Information Systems and Management - Management Science and Operations Research - Statistics, Probability and Uncertainty

	Science & Technology - Health Policy & Services - History of Social Sciences - Hospitality, Leisure, Sport & Tourism - Industrial Relations & Labor - Information Science & Library Science - International Relations - Law - Linguistics - Management - Neurosciences - Operations Research & Management Science - Philosophy - Planning & Development - Political Science - Psychiatry - Psychology - Psychology, Applied - Psychology, Biological - Psychology, Developmental - Psychology, Educational - Psychology, Experimental - Psychology, Mathematical - Psychology, Multidisciplinary - Psychology, Social - Public Administration - Public, Environmental & Occupational Health - Social Issues - Social Sciences, Biomedical - Social Sciences, Interdisciplinary - Social Sciences, Mathematical Methods - Social Work - Sociology - Statistics & Probability - Transportation - Urban Studies - Womens Studies	- General Economics, Econometrics and Finance - Economics, Econometrics and Finance (miscellaneous) - Economics and Econometrics - Finance - General Neuroscience - Neuroscience (miscellaneous) - Behavioral Neuroscience - Cognitive Neuroscience - General Psychology - Psychology (miscellaneous) - Applied Psychology - Developmental and Educational Psychology - Experimental and Cognitive Psychology - Neuropsychology and Physiological Psychology - Social Psychology - General Social Sciences - Social Sciences (miscellaneous) - Development - Education - Geography, Planning and Development - Health(social science) - Human Factors and Ergonomics - Law - Linguistics and Language - Safety Research - Sociology and Political Science - Transportation - Anthropology - Communication - Cultural Studies - Demography - Gender Studies - Life-span and Life-course Studies - Political Science and International Relations - Public Administration - Urban Studies

	Fields of study related to POB	Law; Administration; Intellectual Property and New Technologies; Management - Business, Human Resources, International; Geography and Spatial Planning; Spatial E-Planning; Political Science; National Security; International relations; European studies; American Studies; International Relations and Area Studies; Global Development Studies, European Studies; International Security and Development; Cognitive science;Psychology; Sociology; Society of the Future;Social communication and media studies	
3.	Description of the POB scope	BioS - Structural and translational biology (genomics and bioinformatics, cell biology, evolutionary biology and biodiversity).	
	Fields and disciplines of science laid down in the Regulation of the Minister of Science and Higher Education of 20 September 2018 on fields and disciplines of science and disciplines of arts (Journal of Laws, item 1818), related to POB	Web of Science *subject categories* related to POB	Scopus ASJC *(all science journal classification)* categories related to POB

• 6.4 - Natural sciences/Biological sciences • 6.5 - Natural sciences/Chemical sciences • 6.6 - Natural sciences/Physical sciences	- Behavioral Sciences - Biochemical Research Methods - Biochemistry & Molecular Biology - Biology - Biophysics - Biotechnology & Applied Microbiology - Cardiac & Cardiovascular Systems - Cell Biology - Endocrinology & Metabolism - Environmental Sciences - Evolutionary Biology - Immunology - Materials Science, Biomaterials - Microbiology - Neuroimaging - Neurosciences - Pharmacology & Pharmacy - Plant Sciences - Spectroscopy - Toxicology - Virology - Zoology	- Animal Science and Zoology - Ecology, Evolution, Behavior and Systematics - Insect Science - Plant Science - Soil Science - General Biochemistry, Genetics and Molecular Biology - Biochemistry, Genetics and Molecular Biology (miscellaneous) - Ageing - Biochemistry - Biophysics - Biotechnology - Cancer Research - Cell Biology - Clinical Biochemistry - Developmental Biology - Endocrinology - Genetics - Molecular Biology - Structural Biology - General Environmental Science - Ecological Modelling - Ecology - Environmental Chemistry - Health, Toxicology and Mutagenesis - Nature and Landscape Conservation - Waste Management and Disposal - General Immunology and Microbiology - Immunology - Microbiology - Parasitology - Virology - Anatomy - Embryology - Neuroscience (miscellaneous) - Behavioral Neuroscience - Cellular and Molecular Neuroscience - Developmental Neuroscience - Sensory Systems

	Fields of study related to POB	Biochemistry; Molecular and Cell Biophysics; Biology; Bioinformatics; Biotechnology; Neurobiology; Ecology and evolution; Environmental Protection and Management; Molecular Biotechnology; Natural Resources Management; Biophysics; Molecular biophysics and biotechnology; PhD Programme in Biology	
4.	Description of the POB scope	qLife - better research for better quality of life (translational research: civilization diseases, reproductive health, regenerative medicine; drug development: mechanisms, targets, clinical trials).	
	Fields and disciplines of science laid down in the Regulation of the Minister of Science and Higher Education of 20 September 2018 on fields and disciplines of science and disciplines of arts (Journal of Laws, item 1818), related to POB	Web of Science *subject categories* related to POB	Scopus ASJC *(all science journal classification)* categories related to POB
	• 3.1 - Medical and health sciences/Pharmacology and pharmacy • 3.2 - Medical and health sciences/Medical sciences • 3.4 - Medical and health sciences/Health sciences	- Allergy - Anthropology - Cardiac & Cardiovascular Systems - Clinical Neurology - Computer Science, Cybernetics - Computer Science, Interdisciplinary Applications - Critical Care Medicine - Emergency Medicine - Endocrinology & Metabolism - Evolutionary Biology - Geriatrics & Gerontology - Health Care Sciences & Services - Medical Ethics - Medicine, General & Internal - Medicine, Research & Experimental - Neurosciences - Nursing - Pharmacology & Pharmacy - Physiology - Primary Health Care - Reproductive Biology - Social Sciences, Biomedical	- General Biochemistry, Genetics and Molecular Biology - Biochemistry, Genetics and Molecular Biology (miscellaneous) - Ageing - Biochemistry - Biophysics - Biotechnology - Cancer Research - Cell Biology - Clinical Biochemistry - Developmental Biology - Endocrinology - Genetics - Molecular Biology - Molecular Medicine - Physiology - Structural Biology - Computer Graphics and Computer-Aided Design - Computer Science Applications - General Medicine - Medicine (miscellaneous) - Anatomy - Anesthesiology and Pain Medicine - Biochemistry, medical - Cardiology and Cardiovascular Medicine - Critical Care and Intensive Care Medicine - Complementary and alternative

		- Surgery - Toxicology	medicine - Dermatology - Drug guides - Embryology - Emergency Medicine - Endocrinology, Diabetes and Metabolism - Epidemiology - Family Practice - Gastroenterology - Genetics(clinical) - Geriatrics and Gerontology - Health Informatics - Health Policy - Hematology - Hepatology - Histology - Immunology and Allergy - Internal Medicine - Infectious Diseases - Microbiology (medical) - Nephrology - Clinical Neurology - Obstetrics and Gynaecology - Oncology - Ophthalmology - Orthopedics and Sports Medicine - Otorhinolaryngology - Pathology and Forensic Medicine - Pediatrics, Perinatology, and Child Health - Pharmacology (medical) - Physiology (medical) - Psychiatry and Mental health - Public Health, Environmental and Occupational Health - Pulmonary and Respiratory Medicine - Radiology Nuclear Medicine and imaging - Rehabilitation - Reproductive Medicine - Reviews and References, Medical - Rheumatology - Surgery - Transplantation - Urology - General Neuroscience - Neuroscience (miscellaneous) - Behavioral Neuroscience

			- Biological Psychiatry - Cellular and Molecular Neuroscience - Cognitive Neuroscience - Developmental Neuroscience - Endocrine and Autonomic Systems - Neurology - Sensory Systems - General Nursing - Nursing (miscellaneous) - Advanced and Specialised Nursing - Assessment and Diagnosis - Care Planning - Community and Home Care - Critical Care - Emergency - Fundamentals and skills - Gerontology - Issues, ethics and legal aspects - Leadership and Management - LPN and LVN - Maternity and Midwifery - Medical–Surgical - Nurse Assisting - Nutrition and Dietetics - Oncology(nursing) - Pathophysiology - Pediatrics - Pharmacology (nursing) - Phychiatric Mental Health - Research and Theory - Review and Exam Preparation - General Pharmacology, Toxicology and Pharmaceutics - Pharmacology, Toxicology and Pharmaceutics (miscellaneous) - Drug Discovery - Pharmaceutical Science - Pharmacology - Toxicology - Health(social science) - General Health Professions - Health Professions (miscellaneous) - Chiropractics - Complementary and Manual Therapy - Emergency Medical Services - Health Information Management - Medical Assisting and

			Transcription - Medical Laboratory Technology - Medical Terminology - Occupational Therapy - Optometry - Pharmacy - Physical Therapy, Sports Therapy and Rehabilitation - Podiatry - Radiological and Ultrasound Technology - Respiratory Care - Speech and Hearing
	Fields of study related to POB	Laboratory Medicine, Dietetics, Pharmacy, Medicine, Dentistry, Nursing, Obstetrics, Public Health, School of Medicine in English; International PhD Studies in medical sciences; InterDokMed - Interdisiplinarity for Innovative Medicine; Drug Discovery and Development	
5.	Description of the POB scope	SciMat - design of advanced materials from models and theoretical tools via synthesis and characterization to applications (nanostructures, electronics, photonics, biomaterials, energy sources).	
	Fields and disciplines of science laid down in the Regulation of the Minister of Science and Higher Education of 20 September 2018 on fields and disciplines of science and disciplines of arts (Journal of Laws, item 1818), related to POB	Web of Science *subject categories* related to POB	Scopus ASJC *(all science journal classification)* categories related to POB
	• 6.2 - Natural sciences/Computer and information sciences • 6.3 - Natural sciences/Mathematics • 6.4 - Natural sciences/Biological sciences • 6.5 - Natural sciences/Chemical sciences • 6.6 - Natural sciences/Physical sciences	- Biology - Biophysics - Chemistry, Analytical - Chemistry, Applied - Chemistry, Inorganic & Nuclear - Chemistry, Medicinal - Chemistry, Multidisciplinary - Chemistry, Organic - Chemistry, Physical - Computer Science, Theory & Methods - Electrochemistry - Energy & Fuels - Environmental Sciences - Green & Sustainable Science & Technology - Instruments & Instrumentation	- Biochemistry - Biophysics - Biotechnology - Bioengineering - Catalysis - Colloid and Surface Chemistry - Filtration and Separation - Analytical Chemistry - Electrochemistry - Inorganic Chemistry - Organic Chemistry - Physical and Theoretical Chemistry - Spectroscopy - Fuel Technology - Renewable Energy, Sustainability and the Environment - Environmental Chemistry - General Materials Science

		- Materials Science, Biomaterials - Materials Science, Ceramics - Materials Science, Characterization & Testing - Materials Science, Coatings & Films - Materials Science, Composites - Materials Science, Multidisciplinary - Mathematics - Mathematics, Applied - Mathematics, Interdisciplinary Applications - Medicine, Research & Experimental - Nanoscience & Nanotechnology - Optics - Physics, Applied - Physics, Atomic, Molecular & Chemical - Physics, Condensed Matter - Physics, Mathematical - Physics, Multidisciplinary - Polymer Science - Radiology, Nuclear Medicine & Medical Imaging - Spectroscopy - Thermodynamics	- Materials Science (miscellaneous) - Biomaterials - Ceramics and Composites - Electronic, Optical and Magnetic Materials - Materials Chemistry - Metals and Alloys - Polymers and Plastics - Surfaces, Coatings and Films - General Mathematics - Algebra and Number Theory - Analysis - Applied Mathematics - Computational Mathematics - Control and Optimization - Discrete Mathematics and Combinatorics - Geometry and Topology - Logic - Mathematical Physics - Modelling and Simulation - Numerical Analysis - Statistics and Probability - Theoretical Computer Science - Condensed Matter Physics - Atomic and Molecular Physics, and Optics - Statistical and Nonlinear Physics - Surfaces and Interfaces
	Fields of study related to POB	Advanced materials and nanotechnology; Studies in mathematics and natural sciences; Physics; Applied physics; Biophysics; Chemistry; Medical chemistry; Sustainable chemistry; Environmental Protection; Mathematics; Computer science; IT analyst; Computer Mathematics. PhD programms: Physics; Chemistry; Matehmatics; Computer Science	
6.	Description of the POB scope	DigiWorld - digital world and cyber space (innovative technologies of artificial intelligence and machine learning in interdisciplinary applications).	

Fields and disciplines of science laid down in the Regulation of the Minister of Science and Higher Education of 20 September 2018 on fields and disciplines of science and disciplines of arts (Journal of Laws, item 1818), related to POB	Web of Science *subject categories* related to POB	Scopus ASJC *(all science journal classification)* categories related to POB
• 1.4 - Humanities/Language and linguistics • 1.5 - Humanities/Literature • 2.3 - Engineering and technology/Information and communication technology • 5.1 - Social sciences/Economics and finance • 5.2 - Social sciences/Social and economic geography, and spatial management • 5.4 - Social sciences/Media and communications • 5.6 - Social sciences/Management and quality science • 5.7 - Social sciences/Law • 5.11 - Social sciences/Psychology • 6.2 - Natural sciences/Computer and information sciences • 6.3 - Natural sciences/Mathematics • 6.6 - Natural sciences/Physical sciences	- Astronomy & Astrophysics - Business, Finance - Computer Science, Artificial Intelligence - Computer Science, Theory & Methods - Economics - Humanities, Multidisciplinary - Linguistics - Literature - Management - Mathematics, Applied - Mathematics, Interdisciplinary Applications - Neurosciences - Optics - Physics, Applied - Physics, Atomic, Molecular & Chemical - Physics, Mathematical - Physics, Multidisciplinary - Physics, Particles & Fields - Social Sciences, Mathematical Methods	- General Arts and Humanities - Arts and Humanities (miscellaneous) - Language and Linguistics - Literature and Literary Theory - General Business, Management and Accounting - Business, Management and Accounting (miscellaneous) - Accounting - Business and International Management - Management Information Systems - Management of Technology and Innovation - Marketing - Organizational Behavior and Human Resource Management - Strategy and Management - Tourism, Leisure and Hospitality Management - Industrial relations - General Computer Science - Artificial Intelligence - Computational Theory and Mathematics - Information Systems - General Economics, Econometrics and Finance - Economics, Econometrics and Finance (miscellaneous) - Economics and Econometrics - Finance - General Mathematics - Algebra and Number Theory - Analysis - Applied Mathematics - Computational Mathematics - Statistics and Probability - Theoretical Computer Science - General Neuroscience - Behavioral Neuroscience - Cognitive Neuroscience - General Physics and Astronomy

			- Physics and Astronomy (miscellaneous) - Condensed Matter Physics - Nuclear and High Energy Physics - Atomic and Molecular Physics, and Optics - Statistical and Nonlinear Physics - General Social Sciences - Linguistics and Language
	Fields of study related to POB	Cultural studies; Geography and spatial planning; Environmental Protection; Management; Social media; Literature; Astronomy; Physics; Computer science; Applied Computer Science; Computer Science of Video Games; IT analyst; Bioinformatics; Molecular and Cell Biophysics; Molecular Biotechnology; Mathematics; Computer Mathematics; Cognitive Science; Neurobiology; Economy; Earth and environmental science; Physics of complex systems; Biology; Biochemistry; Biophysisc	
7.	Description of the POB scope	Anthropocene - the causes, paths and consequences of global environmental changes (human impact on environmental systems, climate, globalization, migration, circular economy, new technologies).	
	Fields and disciplines of science laid down in the Regulation of the Minister of Science and Higher Education of 20 September 2018 on fields and disciplines of science and disciplines of arts (Journal of Laws, item 1818), related to POB	Web of Science *subject categories* related to POB	Scopus ASJC *(all science journal classification)* categories related to POB

	• 1.1 - Humanities/Archaeology • 1.2 - Humanities/Philosophy • 1.3 - Humanities/History • 5.1 - Social sciences/Economics and finance • 5.2 - Social sciences/Social and economic geography, and spatial management • 5.5 - Social sciences/Political and administrative sciences • 5.6 - Social sciences/Management and quality science • 5.7 - Social sciences/Law • 5.8 - Social sciences/Sociology • 6.1 - Natural sciences/Astronomy • 6.2 - Natural sciences/Computer and information sciences • 6.3 - Natural sciences/Mathematics • 6.5 - Natural sciences/Chemical sciences • 6.6 - Natural sciences/Physical sciences • 6.7 - Natural sciences/Earth and related environmental sciences	- Area Studies - Astronomy & Astrophysics - Chemistry, Applied - Chemistry, Multidisciplinary - Chemistry, Physical - Demography - Economics - Environmental Sciences - Environmental Studies - Geochemistry & Geophysics - Geography, Physical - Geology - Geosciences, Multidisciplinary - International Relations - Law - Materials Science, Multidisciplinary - Mathematics - Mathematics, Applied - Mathematics, Interdisciplinary Applications - Meteorology & Atmospheric Sciences - Physics, Mathematical - Physics, Multidisciplinary - Planning & Development - Political Science - Public Administration - Remote Sensing - Social Sciences, Interdisciplinary - Soil Science	- Soil Science - General Chemistry - Physical and Theoretical Chemistry - General Earth and Planetary Sciences - Atmospheric Science - Earth-Surface Processes - Geology - Geophysics - Space and Planetary Science - General Economics, Econometrics and Finance - Economics, Econometrics and Finance (miscellaneous) - Economics and Econometrics - Finance - Renewable Energy, Sustainability and the Environment - General Environmental Science - Environmental Chemistry - Global and Planetary Change - Pollution - General Materials Science - Analysis - Applied Mathematics - Modelling and Simulation - Physics and Astronomy (miscellaneous) - Social Sciences (miscellaneous) - Geography, Planning and Development - Law - Demography - Political Science and International Relations - Public Administration
	Fields of study related to POB	Geography and spatial planning; Geology; Astronomy; Physics; Environmental Protection; Sustainable Chemistry; Management and quality; Economy; Sociology; Pedagogy; Philosophy; Religious and cultural studies; Administration; Intellectual Property and New Technologies; Earth and environment sciences; Chemistry; Computer science; Society of the Future; Law; Computer Mathematics; Mathematics and IT analyst	
Attachment no2, File: List of the most prominent young scientists_.pdf			

Attachment no3, File: List of the most prominent young scientists.pdf

D. PLAN INCLUDING THE OBJECTIVES FOR IMPROVING QUALITY OF RESEARCH AND EDUCATION, TOGETHER WITH A SCHEDULE FOR THE PLAN IMPLEMENTATION

D.1 PLAN

Creating a modern research university requires undertaking comprehensive activities. However, achieving excellence must not be an objective in itself. Scientific research should be closely connected with open worldwide science, respond to civilizational and technological needs and challenges, as well as take into consideration the dimensions of the third mission of the University, which focuses on its social impact. Modern research university needs to be a sustainable university which observes the rules of sustainable development and is based on four pillars: internationalization, interdisciplinarity, integration and innovation, which can be described as **'the Principle of four Is'**. Internationalization should be understood qualitatively. The key is creating strategic partnerships with prominent scientific institutions from abroad, which will make it possible to work together in all the dimensions of the University's mission. Interdisciplinarity should be understood as the pursuit of equilibrium between advanced specialization, research at the intersection of various disciplines, as well as the global approach to the understanding of the world. Integration means mutual support and penetration of the three dimensions of the University's mission: research, education and cooperation with social and economic environment. Innovation should be understood not only as technological but also social. The transfer of knowledge to the economy is not the only role of the University. It should exert impact on the social environment as an institution which embraces rational points of view, promotes consensual methods of conflict resolution and responds to social needs in a creative way. The Principle of four Is, reflecting the idea of a sustainable university, was used to describe priority research areas, specific objectives and actions which help to accomplish them. There are seven priority research areas (POBs): **Heritage** - cultural heritage, **FutureSoc** - interdisciplinary research on social changes, **BioS** - structural and translational biology, **qLife** - better research for better quality of life, **SciMat** - design of advanced materials, **DigiWorld** - dsigital world and cyber space, **Anthropocene** - the causes, paths and consequences of global environmental changes.

The indicated POBs result from SWOT analysis, reflecting the potential of research development of JU, and at the same time refer to crucial problems, which worldwide science faces nowadays and will have to face in the near and distant future. These are the areas in which the intensification of scientific research is of crucial importance, since it allows to be better prepared for future technological, economic and social challenges. Furthermore, effective and flexible dealing with problems of scientific research in specific areas requires the development and implementation of new forms of international research cooperation, the use of methods from various fields and disciplines of science, dialogue with social and economic environment as well as ideas regarding new technological solutions and forms of social activity. Therefore, these problems require applying the Principle of four Is. The proposed development plan of the JU consists of six groups of objectives. The first refers to extending the influence of the University's research activity on the development of worldwide science. A sustainable university should give priority to international projects, support interdisciplinary and intercollegiate projects, the realization of which makes the implementation of technological and social innovations possible, as well as be open to research conducted in cooperation with social and economic environment. This translates into the need to achieve specific objectives: 1.1 the growth of human capital and its greater use; 1.2 expansion of the research ecosystem; 1.3 improving the efficiency of international fund-raising for research funding. The impact of the University's scientific activity on the development of worldwide science depends on two additional factors: 1.4 improving the openness of research and maximizing access to research results, as well as 1.5 improving the level of innovation, interdisciplinarity of research and the integration of University's mission. The second group of objectives is supposed to strengthen research cooperation with reputable scientific institutions on an international scale. A sustainable university should strive to search for and implement innovative international cooperation mechanisms of high intensity and of a wide range of interaction, strive to create interdisciplinary research groups and mutual interdisciplinary priority areas with foreign partners, and work with them to identify scientific, technological and social problems which require innovative solutions, as well as extend cooperation beyond research and education to include common projects for, and with the socio-economic environment. This translates into the following specific objectives: 2.1 enhancing the role of young foreign scientists and experts in the activity of the University; 2.2 enhanced

participation of researchers from the JU in international research cooperation, as well as 2.3 building sustainable and mutually beneficial research partnerships. The third group of objectives refers to improving the quality of education of undergraduates and doctoral students. This can be achieved through: 3.1 expanding the interdisciplinarity of educational programmes and 3.2 expanding the internationality of educational programmes. As part of the integration of the JU mission and innovation, 3.3 modern educational formats should be developed and implemented, especially those that take into consideration so-called research-led and research-based learning, as well as the participation of students in social projects. Another essential element of an innovative research university is 3.4 design and implementation of mechanisms for attracting and fostering talented students and doctoral students.
The fourth group of objectives is connected with the constant professional development of university employees. It is necessary to create or develop appropriate mechanisms of international cooperation as well as to promote the idea of interdisciplinarity, in particular through programs which allow for 4.1 improving the level of research and transversal competences of researchers. Particularly intensive activities should be aimed at young scientists in order to 4.2 design and implement mechanisms fostering the creation of young research leaders who, from the very beginning of their career, work in research culture which is open to internationalization and interdisciplinarity. Moreover, the ideas of technological and social innovation, as well as integration, should be implemented through 4.3 design of a system enabling acquisition and fostering of competences related to cooperation with the social and economic environment.
The fifth group of objectives concerns improving the quality of university management. The process of management 5.1 should be internationalized and its rules, reflecting the ideas of innovation and integration, 5.2 should be based on modern university management concepts. A sustainable university should also be ready for future challenges; therefore it is necessary to 5.3 design and implement of strategic reflection mechanisms to prepare the JU for the challenges of the future.
The sixth group of objectives consists of 6.1 building the university brand and its international position, 6.2 evolution of strategic partnerships with institutions from the social and economic environments, as well as 6.3 strengthening the social impact of the University.

The above mentioned objectives will be achieved through numerous actions. The actions have been designed with an aim to ‘incorporate’ international cooperation in the current University activity (e.g. R2R-Research to Research, Jagiellonian Fellowship Program, Jagiellonian Chairs Program, Conferences & Seminars, Outgoing Fund, Individual Development Program, Young Labs Program, Visibility Strategy); to promote and support interdisciplinarity (e.g. New blood, Incentives program, R2R-Research to Research, Skills, Young Labs Program, Labs); to support the integration of the University’s mission (Open Access, EduPrograms for the Future, Edu Tools, Talent Management, R2B-Research to Business, R2S-Research to Society, Gates - Space for science, Sustainable University, The Future University Lab); as well as to ensure that the University’s activities focus on scientific, technological and social innovation (Strategic Research Infrastructure, EduTools, Skills, R2B-Research to Business, R2S-Research to Society, Gates - Space for science, Labs, Sustainable University).
*refers to each action: the projected costs for the years 2020-2025 constitute only a part of outlay on the accomplishment of JU’s strategy (more details in schedule D.3, action 1).

D.2. OBJECTIVES FOR IMPROVING QUALITY OF RESEARCH AND EDUCATION

Specific objectives for increasing the impact of the university's research activity on the development of world science, especially in priority research areas with high development potential, in which the university plans to intensify its research activity.

Increasing the impact of the Jagiellonian University's research activity on the development of world science requires comprehensive and complementary actions in several areas: human capital management, expansion of the research ecosystem, obtaining international grants, accessibility of research and reconstruction of research culture in line with the ideas of interdisciplinarity and innovation.

1.1 The growth of human capital and its greater use

Expanding the impact of research activity of universities on the development of world science requires taking steps towards optimal development and application of the human, intellectual and relation-wise capital. This objective can be achieved through two types of actions.
Firstly, by employing outstanding specialists, the best promising young scientists, engineering and technical staff and establishing permanent cooperation with experts from the social and economic environment. Thus the employment profile at the university will be suited to considerably increase the impact of the university on the development of world science, especially in the priority research areas.
Secondly, the management of staff capital should be optimised through the use of mechanisms to maximise the impact of research and the level of scientific/research achievement through an appropriate incentive scheme to address research problems in priority areas as well as through more flexible employment rules.
This objective will be pursued through the following actions: New Blood, Incentives Program, R2R-Research to Research, Jagiellonian Fellowships Program, Jagiellonian Chairs Program, Labs

1.2 Expansion of the research ecosystem

World-class research cannot be carried out without an adequate research ecosystem consisting not only of proper research infrastructure, but also of all the tools that facilitate research (e.g. software, access to databases). A research ecosystem that makes impact of research activities on the development of world science stronger and more efficient must also evolve towards sustainability.
This objective will be pursued through the following actions: Strategic Research Infrastructure #1, Strategic Research Infrastructure #2

1.3 Improving the efficiency of international fund-raising for research funding

One of the most important ways to impact the development of world science is to obtain and participate in international research grants. To achieve better results in obtaining these grants, we need to carry out a number of comprehensive actions. They must include an appropriate incentive scheme encouraging to apply for grants, structures for establishing international research teams and instruments assisting an administrative support for the grant application process and its implementation. Please note that these structures must be properly integrated and use innovative management tools.
This objective will be pursued through the following actions: Incentives Program, R2R-Research to Research, Outgoing Fund, Conferences & Seminars, Research Administration

1.4 Improving the openness of research and maximizing access to research results

A more considerable impact on the world science means more accessibility/openness in the policy of the Jagiellonian University. The policy features two principal aspects. On the one hand, the issue in question is the accessibility of publication, i.e. the development of mechanisms facilitating publication in the open access system, as well as popularizing research carried out at the university in an approachable manner. On the other hand, the accessibility of science also means research groups being open to cooperate with foreign partners,

PhD and graduate students as well as the social and economic environment.
This objective will be pursued through the following actions: Open Access, Conferences & Seminars, Outgoing Fund, R2R-Research to Research, R2S-Research to Society, R2B-Research to Business, Labs

1.5 Improving the level of innovation, interdisciplinarity of research and the integration of University's mission

Playing an important role in the world science requires for the university to create a proper research culture. Research must be innovative in terms of technological and also social innovations. The research culture should feature a stable element of interdisciplinarity, resulting in the creation of mechanisms for the exchange of ideas between representatives of various fields and disciplines of science as well as allowing for collective generating and solving of problems. Research should also be integrated with other aspects of the university's mission: education, cooperation and impact on the social and economic environment.
This objective will be pursued through the following actions: R2R-Research to Research, R2B-Research to Business, R2S-Research to Society, Gates - Space for science, Labs, Sustainable University

Specific objectives for enhancing research collaboration with research institutions of high international reputation, especially in priority research areas.

Effective international cooperation requires the creation of a number of collectively working mechanisms to fully exploit the potential of cooperation with foreign partners, both at the level of research teams and institutions. In the overall strategy of the university, the reinforcement of research cooperation with internationally recognised research institutions requires three specific objectives.

2.1 Enhancing the role of young foreign researchers and experts in the activity of the University

The university should make greater use of the potential of offering research stays to scientists and experts from abroad. In particular, such actions should focus on young, promising researchers who have completed their doctoral degree a few years prior (postdocs). Their research internship at the Jagiellonian University will enable them to carry out short projects, as well as pave the way to long-term research partnerships in the future. In addition to young academics, the experienced foreign researchers should also be more involved in university research, contributing their knowledge and know-how, as well as elements of other research cultures, to the research activities of the university. The prestige of the university will be considerably strengthened in the area of world science by welcoming most outstanding world academics, who will cooperate with the Jagiellonian University on special terms. The university must also be ready to welcome experts from outside the scientific/academic sector who can offer a different view of scientific problems as well as provide abundant experience in business, social organizations and local and governmental structures.
This objective will be pursued through the following actions: Jagiellonian Fellowship Program, Jagiellonian Chairs Program

2.2 Enhanced participation of researchers from the Jagiellonian University in international research cooperation

Another aspect of strengthening academic cooperation in the international context should be increasing the participation of Jagiellonian University's employees in research projects and other activities initiated with foreign partners. In this respect, the university should not only offer funding for conference leaves and short internships, but should also financially support longer research stays. The crucial aspect contributing to the implementation of this objective will consist in the development of various flexible structures, as international cooperation often requires quick decision making on co-financing or financing unusual forms of foreign partners' cooperation.
This objective will be pursued through the following actions: Outgoing Fund, Young Labs Program, Incentives Program

2.3 Building sustainable and mutually beneficial research partnerships

International cooperation requires the establishment of sustainable structures under which long-term research projects can be planned and carried out. The construction of such stable structures must be carried out side by side on two levels. Firstly, the mechanisms for designing and maintaining partnerships between specific research groups should be reinforced (bottom-up strategy). Secondly, there is an equal need for partnerships at the institutional level. The Inter-University Networks play a an exceptional role in this context: UNA EUROPA, THE GUILD as well as COIMBRA. They have already developed forms of cooperation which are the foundation of an international research ecosystem involving the sharing of data and research infrastructures, as well as the exchange of know-how, consultations and mutual use of researchers and experts. Work to strengthen this ecosystem needs to be pursued.
This objective will be pursued through the following actions: R2R-Research to Research, Incentives Program, Outgoing Fund, Young Labs Program

Specific objectives for improving quality of education provision for students and doctoral training, especially in fields of study and disciplines of science related to priority research areas, taking into account the need to include students and doctoral candidates in research activities and the need to compete effectively for the most talented applicants, including foreign ones, to study programmes and to doctoral schools. The objectives should also take into account implementation of a talent management system.

A modern university should offer educational programmes that are closely linked to research and respond to the changing needs of the labour market and other challenges of the present time such as innovation and openness to different viewpoints and value systems. Under this framework, extending interdisciplinarity in university education, intensifying its level of internationalisation, introducing modern educational formats and mechanisms to guide/supervise the most promising and talented students are especially important.

3.1 Expanding the interdisciplinarity of educational programmes

Education based on teaching under a single scientific discipline often fails to fulfil its role. The excessive emphasis on specialisation means that university graduates do not have the flexibility needed to operate effectively in a rapidly changing world. Introduction and expansion of interdisciplinary educational programmes offered by the university may respond to this problem effectively. Interdisciplinarity assists students in the open-minded approach, out-of-the box thinking from various points of view and flexibility in approaching solutions. Education must also offer learning of the so-called soft and transferable skills: combining these competences with the interdisciplinary approach to scientific, technological and social problems will create university graduates who will face challenges of the present and future effectively.
This objective will be pursued through the following actions: EduPrograms for the Future, EduTools, Skills #1, Talent Management, Labs, Gates - Space for science

3.2 Expanding the internationality of educational programmes

An important value in university education consists of its internationalisation, creating a framework to understand cultural differences better, accept different points of view and value systems, and promote cultural sensitivity. Creating university and doctoral educational programmes to a more international extent is therefore an important objective, the implementation of which will assist the graduates in a more effective professional navigation in the era of globalisation. To meet this objective the number of programmes in English offered by the university must be greater, the higher school must actively search for the best candidates for studies and doctoral schools abroad, engaging foreign scientists in the teaching process and creating study programmes and curricula in doctoral schools with foreign partners (especially in the joint degree format). The growing of the international mobility of students and doctoral students of the Jagiellonian University is also a crucial aspect in the internationalisation of education.
This objective will be pursued through the following actions: EduPrograms for the Future, EduTools, Talent Management, Jagiellonian Fellowship Program, Visibility Strategy

3.3 Development and implementation of modern educational formats

To maximise the quality of university education we need a greater share of modern, innovative educational form in university teaching. Of the available formats the so-called research-led and research-based learning, i.e. preparation and inclusion of students and doctoral students to work in research groups seem to be the most effective configuration. However, this approach should be complemented by other innovative formats, including the use of modern technologies in the teaching process, and the involvement of students and doctoral students in social projects that help in acquiring group work skills and social sensitivity. These extensive changes in the approach to university education also require offering more courses teaching soft and transferable skills and an increased emphasis on problem-solving education and tutoring.
This objective will be pursued through the following actions: EduTools, EduPrograms for the Future, Talent Management, Skills #1, Gates - Space for science

3.4 Design and implementation of mechanisms for attracting and fostering talented students and doctoral students

Academic talent requires an adequate support to produce meaningful scientific results. However, it is too late to provide such support at the stage of doctoral studies. These mechanisms to properly guide and supervise students need to be designed and introduced at the stage of being candidates for studies as well as students. The growth of talented students should be based on three pillars: mentoring, involving students in research teams and enabling them to join internships and educational and research trips, as well as running their own mini-projects.
This objective will be pursued through the following actions: Talent Management, Skills #1, EduPrograms for the Future, EduTools, Visibility Strategy

Specific objectives for devising and implementing comprehensive solutions for the professional development of the university's staff, especially young scientists, in the meaning of Article 360(2) of the Law of 20 July 2018 on Higher Education and Science.

Two types of solutions are required in fostering professional growth of employees. On the one hand, a plethora of competences must be available for them to acquire, such as these related to the scientific workshop, linguistic and inter-cultural competences as well as soft and transversal skills. On the other hand, the key competences facilitating research and cooperation with the social and economic environment escape simple definitions, they can be fostered on specialised courses or through research, research and development or social projects. Young researchers should be equipped with an opportunity to expand their professional workshops in skills indispensable to succeed in science at a critical stage of their professional development.

4.1 Improving the level of research and transversal competences of researchers

Research and transversal competences are prerequisites for effective research and mobilising external funding to implement it. Therefore, one of the most important tasks of the university is to continuously offer more interesting and desired courses and trainings in this area and make them available to the greatest possible group of researchers. However, another component is needed to ensure the growth of researchers' competences: a possibility to work on the more individualised, need-oriented acquisition of specialised skills. This objective cannot be achieved through standardised courses and training, but through more flexible mechanisms that universities should design and implement.
This objective will be pursued through the following actions: Skills #2, Individual Development Program, Incentives Program

4.2 Design and implementation of mechanisms fostering the creation of young research leaders

Constructing a proper mechanism of professional support is particularly important in case of young researchers, having earned their doctoral degree, but who haven’t yet began carrying out their own research. At this critical point they should be offered support enabling them to acquire competences characteristic of an experienced researcher. These competences embrace specialist skills related to a specific scientific discipline and a plethora of soft skills, but also preparation for and management of teams, financial planning, as well as cooperation with foreign partners. At the same time, it is a stage of professional development, in which the future science leaders evolve. Therefore, it is necessary to create a support system identifying and assisting young leaders, providing them with the opportunity to create their own research teams in an international environment and, at the same time, benefit from the advice of experienced scientists from the Jagiellonian University and the world. Granting this support should depend not only on the achievements of the young scientist to date, but also on the presented research project on a high risk high gain basis, which encourages candidates to submit bold grant proposals, potentially leading to significant achievements.
This objective will be pursued through the following actions: Young Labs Program, Incentives Program, Labs, Gates - Space for science

4.3 Design of a system enabling acquisition and fostering of competences related to cooperation with the social and economic environment

One of the key and often neglected areas of professional development of university employees is cooperation with the social and economic environment. The potential forms of this cooperation escape simple classifications because they often depend on specific circumstances. Moreover, they usually go beyond the standard ways of thinking and actions that characterise the academic environment. Therefore, it is necessary to create room for exchanging ideas and taking action that breaks through these academic standards and allows for testing non-standard solutions and acquiring a wide range of competences in cooperation with business, government and local government institutions, cultural institutions and NGOs. In particular, professional development in this area is possible through supporting original projects of university employees, whose aim are actions including research - business - society projects.
This objective will be pursued through the following actions: R2B-Research to Business, R2S-Research to Society, Gates - Space for science, Sustainable University

Specific objectives for improving quality of university governance and management, including quality-enhancing organisational changes.

Changes aimed at improving the quality of university management should follow three interrelated paths. Firstly, the University's presence in international cooperation networks should be maximized, creating joint decision-making mechanisms and sharing the know-how with strategic partners. Secondly, the elements of modern management concepts should be introduced into the university management process. Thirdly and finally, it is necessary to create mechanisms for strategic reflection/observation that will effectively prepare the University for the challenges of the future.

5.1 Expanding internationalisation of the university's management process

The university management process does not entirely exploit the opportunities created by international cooperation. Meanwhile, the use of the experience of strategic partners and the creation of joint management mechanisms with them in certain areas of university activity (e.g. EU funding, impact on the social and economic environment, lobbying, mobility strategy, etc.) can be an excellent tool to increase the efficiency and international recognition of the university. Therefore, the university should aim at intensifying cooperation on the level of strategic management with the outside strategic partners using modern forms of cooperation, know-how and good practices exchange and obtaining opinions of foreign experts contributing to the strategic decision making. These actions should be undertaken in particular under the strategic university networks to which the Jagiellonian University belongs: UNA EUROPA, THE GUILD as well as COIMBRA.
This objective will be pursued through the following actions: Research Administration, Skills #3, Sustainable University, The Future University Lab, Management, Visibility Strategy

5.2. Introduction of modern university management concepts

The university management process should use modern management models that provide tools to respond in an effective and flexible manner to emerging problems. In particular, the main principles of management approaches such as Lean Management and Corporate Social Responsibility should be implemented under the university organisational structure. The focus should be on the implementation and promotion of the principles of sustainable development. Finally, it is necessary to introduce a process-based approach to management as an antidote to the weaknesses of the structural approach, characterised by the excessive importance of the hierarchy. These postulates result from both the SWOT analysis and the general strategy of the university, which emphasizes the innovative character of all university actions, including the processes of management.
This objective will be pursued through the following actions: Management, Research Administration, Skills #3, Sustainable University, The Future University Lab

5.3. Design and implementation of strategic reflection mechanisms to prepare the University for the challenges of the future

Managing a modern university requires a strategic reflection that does not focus on current problems and challenges, but focuses on fostering solutions enabling quick and effective responses to the changing circumstances in the future. The university cannot operate on the principle of reactivity, but it should constantly "reinvent itself". To achieve this objective, there should be created mechanisms including redesigned models of university management, implementing modern methods of strategic analysis and planning (e.g. action scenarios), integration of levels of university management through harmonization of action objectives and perfecting communication processes as well as creating organizational structures supporting processes of strategic reflection.
This objective will be pursued through the following actions: The Future University Lab, Management, Skills #3, Sustainable University

Other specific objectives to raise the international significance of the university's activities.

In addition to the objectives and actions presented above, the creation of a modern and sustainable university, which plays an important role in Europe and the world, requires the implementation of several additional key objectives, such as strengthening of international recognition and position of the University, the establishment of strategic partnerships with institutions from the social and economic environment and maximizing the social impact of the University.

6.1 Building the university brand and its international position

Building the university brand and international position is a result of the implementation of many of the objectives set out above related to outstanding scientific research, obtaining international grants, creating lasting partnerships with prestigious research institutions from abroad. However, these activities should be further supported by a series of interlinked objectives with a direct impact on the international visibility of the University. Efforts should be made to build the University's brand, through cooperation with strategic partners, graduates working abroad, and by organizing targeted promotional campaigns. Measures (actions) must be taken to improve the University's position in the world's top rankings. In conclusion, greater efforts should be made to ensure the participation of Jagiellonian University representatives in prestigious international college bodies (scientific societies, boards and boards of university networks, editorial offices of prestigious journals and publishing series).
This objective will be pursued through the following actions: Visibility Strategy, Skills #3, Sustainable University, Management

6.2 Evolution of strategic partnerships with institutions from the social and economic environments

The achievement of this objective will require a "new opening" to cooperation with the social and economic environment. This cooperation should be based on three pillars. The first step is to identify those partners with whom long-term cooperation programmes can be developed. Furthermore, these programmes should be multidimensional and not limited to incidental joint actions; they should include various types of projects, exchange of information and know-how and the formation of joint decision-making procedures. And thirdly, the University should work out mechanisms for identifying and responding in a timely and flexible manner to actual problems arising in its social and economic environment.
This objective will be pursued through the following actions: Sustainable University, R2B-Research to Business, R2S-Research to Society, Gates - Space for science, Management, The Future University Lab

6.3 Strengthening the social impact of the University

The role of a modern and sustainable university is not limited to delivering research and educating students. A core element of the University's mission is to act on its social responsibility, including the dissemination of knowledge based on science, promoting the position of science on the cultural scene, fostering dialogue based on rational argumentation, and designing and implementing social innovation. An equally important mission is the following: expert activities and research services for the public and non-governmental sectors; partnerships in running public campaigns on the crucial challenges faced by civilizations (climate, energy, relating to confidence in science), popularizing the accomplishments of science and to promoting the social prestige of academic research and education. These initiatives require an accompanying strategy which includes, on the one hand, a comprehensive programme to promote science and universal education (using modern information technologies and the Internet) and, on the other hand, a wide-scale programme of social projects. The design and implementation of this strategy will truly contribute to increasing the social impact of the University and changing its social image from an isolated "ivory tower" to an active member of social life - a place of intellectual activity that improves the presence and future of society.
This objective will be pursued through the following actions: R2S-Research to Society, R2B-Research to Business, Sustainable University, The Future University Lab, Management, Visibility Strategy

D.3. SCHEDULE FOR THE IMPLEMENTATION OF THE PLAN AND DESCRIPTION OF ACTIONS AIMED AT ACHIEVING THE OBJECTIVES, PLANNED FOR 2020–2025

No.	Title of the action	The starting date and deadline for completion of the action		Expected total costs (in PLN)	Description of the action, justification of the action and amount of costs, the impact of the action on the achievement of the objective
		Starting date	Deadline		
1	New blood	1	72	91,600,000.00	Increasing the research potential on an international arena may be achieved through acquiring new researchers whose task will be, on the one hand, to make a substantial contribution to the conducted research as part of all the POBs and on the other, to initiate the development of new teams which will accomplish the established objectives. New researchers should include both scientists with considerable experience in conducting research on an international scale, as well as young scientists of great research potential with internationally recognized achievements. The action consists in creating the mechanisms of attracting scientists and technical employees by means of competition. Each new employee will have the opportunity to create a research team and use: 1.suitable research infrastructure 2.resources for conducting the research, including the purchase of equipment and materials New research teams should contribute to: 1.achieving tangible research results in the form of obtaining international grants, preparing high-quality scientific publications or other achievements, 2.including undergraduates and doctoral students in the research proces, 3.effective cooperation with socio-economic environment. The action will contribute to the growth of human capital of the University and its greater use (1.1), enhancing the role of young foreign researchers and experts in the activity of the University (2.1). The financing of the action includes salaries, equipment, materials. The costs have been estimated rationally and pursue the objectives of economy, efficiency and cost-effectiveness. They are strictly connected with the accomplishment of the objectives 1.1 and 2.1. They will be qualified in accordance with the binding law as well as

					internal JU regulations. The action will be accomplished within POBs: Anthropocene, qLife, DigiWorld, SciMat, BioS, FutureSoc. Milestones: -preparation and announcement of competitions for new employees (1-6) - hiring new employees (7-12) -creating research teams and conducting scientific research (13-60) -mid-term evaluation (37-42) *refers to each action: the projected costs for the years 2020-2025 constitute only a part of outlay on the accomplishment of JU's strategy (i.e. the amount of increased subsidy and a part of own resources). It is estimated that the total outlay of the comprehensive implementation of JU's strategy will exceed the planned budget by roughly 200%.
2	Incentives program	1	72	67,000,000.00	One of the limitations of the scientific effectiveness of Polish universities are low salaries of the employees vis a vis the labor market. It reduces the University's competitiveness as a place of work. Therefore, a system of motivating researchers with significant scientific potential should be created. It is planned to create: 1. reward funds for employees for outstanding scientific achievements or outstanding achievements in the cooperation with socio-economic environment 2. mini-grants for conducting scientific research concerning innovative research themes Reward funds and mini-grants will be managed by particular Labs (action no. 21), therefore a close relationship between a given scientific achievement and the issues explored as part of a given POBs can be foreseen. The idea of mini-grants is a flexible form of supporting researchers who already run larger research projects or who would like to carry out small projects, and the funds thus obtained may be used for any purpose connected with the conducted research. The incentives system also comprises additional instruments, such as decreasing the number of teaching hours and temporary or permanent transfer of employees to research positions. The incentives system will facilitate the accomplishment of the objectives: the growth of human capital and its greater use (1.1), improving the efficiency of international fund-raising for research

					funding (1.3), improving the level of innovation, interdisciplinarity of research and the integration of University's mission (1.5); it will also contribute to the design and implementation of strategic reflection mechanisms to prepare the University for the challenges of the future (5.3). The financing of the action includes salaries, grants, trips, services, materials, patents. The costs have been estimated rationally and pursue the objectives of economy, efficiency and cost-effectiveness. They are strictly connected with the accomplishment of the objectives 1.1, 1.3, 1.5, 5.3. They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be accomplished within POBs: Anthropocene, qLife, DigiWorld, SciMat, BioS, FutureSoc, Heritage. Milestones: - creating the system of rewards and mini-grants (1-6) - giving rewards/mini-grants (every half a year in the period (7-72) - mid-term evaluation (37-42)
3	R2R - Research to Research	1	72	19,550,000.00	The University runs activities which aim to intensify international cooperation and to support building research teams. There is a need, however, to create a comprehensive tool which will become a platform for building lasting and effective international partnerships, increasing research potential in individual, team and system terms. It is planned to create: 1.a fund for research groups which operate within POBs for establishing cooperation with scientists from abroad, the result of which will be to prepare a joint publication or an application for an international research project 2. virtual research platforms which will be used to create new teams of scientists, doctoral students, undergraduates. The key condition of the operation of the platform will be the innovative and interdisciplinary character of a given team's research. The platform will be used as a space for scientific cooperation unlimited by logistic challenges, as well as an instrument which stimulates researcher exchange. The activities will contribute to the expansion of the research ecosystem (1.2), improving the level of innovation, interdisciplinarity of research and the integration of University's mission (1.5), enhancing the role of young foreign researchers and experts in the activity of the

					University (2.1), enhanced participation of researchers from the Jagiellonian University in international research cooperation (2.2), as well as building sustainable and mutually beneficial research partnerships (2.3). The financing of the action includes salaries, trips, services, materials, equipment. The costs have been estimated rationally and pursue the objectives of economy, efficiency and cost-effectiveness. They are strictly connected with the objectives 1.2, 1.5, 2.1, 2.2, 2.3. They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be accomplished within POBs: Anthropocene, DigiWorld, SciMat, BioS, FutureSoc, Heritage. Milestones: - creating research platforms (1-12) - preparing and running the first competition as part of R2R action (subsequent competitions will be organized every six months) (3-72) - the first meetings as part of R2R (7-20) - resolving the competitions for creating research teams (13-24) - international research action within virtual research platforms (25-60) - mid-term evaluation (37-42)

4	Strategic research infrastructure #1	1	72	115,700,000.00	One of the key factors which facilitate the effective accomplishment of research projects and the development of research teams at an international level is the development of research infrastructure. As part of the action, there is a need to modernize the existing research facilities and to purchase new equipment necessary for achieving the established objectives. It is planned: 1. to create interdisciplinary Center for the Development of Therapies for Civilization and Age-Related Diseases, which is a research infrastructure for the didactic and clinical facilities of JU Medical College, 2. to purchase the equipment for core facilities within proteomics, genomics, transcriptomics and metabolomics, 3. to build and equip the Laboratory of Accelerator Mass Spectroscopy, 4. to create specialist laboratories for environmental research (Diffractometric and Spectroscopic Analyses of Nanoparticles and Nano-minerals, Hydro-chemical Analyses), 5. to hire engineer-technical employees in key research laboratories and to handle the purchase of additional equipment. The action will contribute to the expansion of the research ecosystem (1.2). The financing of the action includes equipment, services, salaries. The costs have been estimated rationally and pursue the objectives of economy, efficiency and cost-effectiveness. They are strictly connected with the accomplishment of the objective 1.2. They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be accomplished within POBs: Anthropocene, qLife, BioS. Milestones: - preparing the documentation of the project and tender (1-18) - delivering the equipment (18-48) - mid-term evaluation (37-42)

5	Strategic research infrastructure #2	2	72	14,650,000.00	Access to international databases where distinguished scientists from all over the world publish their research results, plays a similar role to the equipment which facilitates conducting research on a larger scale. The purchase of databases will thus facilitate, on the one hand, a more effective inclusion of the University's researchers in the international science communication system, used by distinguished scientists, and on the other, it will increase the level of research conducted at the University, in particular when it comes to POBs. Providing the scientists with unlimited access to software and databases will allow them to focus on creating research teams (also on an international scale) and on conducting research, instead of devoting time and resources to travelling abroad to institutions where appropriate software or databases are available. The action will contribute to the accomplishment of three specific objectives: apart from the expansion of the research ecosystem (1.2), it will also lead to an enhanced participation of researchers from the Jagiellonian University in international research cooperation (2.2), as well as – in a broader context – building sustainable and mutually beneficial research partnerships (2.3). The financing of the action includes software, licenses, subscription. The costs have been estimated rationally and pursue the objectives of economy, efficiency and cost-effectiveness. They are strictly connected with the objectives 1.2, 2.2, 2.3. They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be accomplished within POBs: qLife, FutureSoc, Heritage. Milestones: - preparing a list of potential databases and software necessary for the effective accomplishment of particular research themes as part of POBs (2-6) - the purchase and implementation of software and databases on a University-wide platform available to all the researchers who would like to conduct research within POBs (7-67) - mid-term evaluation (37-42) - verifying the scale of use and effectiveness of the purchased software and databases in order to facilitate the process of implementing new databases and software (67-72)

6	Open access	2	72	33,050,000.00	With a view to increasing transparency, integration and access to the results of scientific research, the University aims to actively participate in the implementation of Open Science program as well as the related Open Access system. It is planned: 1. to include the research results of the scientists in reputable journals which are published in open access, which will allow for a more effective care of the quality of science, both on a scale of scientific projects conducted within POBs as well as the publications which result from them. The aim of the action is to ensure the increase in the percentage of published and cited scientific works 2. to allocate some of the funds for proofreading of the texts prepared in a foreign language or – in justified cases – for translating articles written in Polish into other languages 3. to create a fund for journals, which will strive for acquiring open journals status, that is journals published in open acces 4. to participate in 'cOALition S' activities – a coalition of funding agencies for open science Open access will facilitate a more active participation in international scientific cooperation and a higher citation rate, which in turn will contribute to the increase in the recognition of JU's scientific achievements and to creating research teams including Polish and foreign researchers. On the other hand, the research results of the University's scientists will be available to wider public opinion, which will meet the need for the popularization of scientific research. The action will help achieve the objective of improving the openness of research and maximizing access to research results (1.4). The financing of the action includes licenses, subscription, equipment, salaries, services. The costs have been estimated rationally and pursue the objectives of economy, efficiency and cost-effectiveness. They are strictly connected with the accomplishment of the objective 1.4. They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be implemented horizontally – at a university level, focusing on the needs of particular POBs. Milestones: -preparing a competition for funding publications in open access, for funding proofreading and translations scientific

					articles into English and for journals which are part of open journals (2-6) -running the competition and choosing the best publications/journals (every half a year 7-72) -mid-term evaluation (37-42)

7	Jagiellonian Fellowship Program	2	72	27,910,000.00	As part of the action the stay at the University of the following will be financed: 1. scientists from abroad (visiting professors or post-docs) 2. distinguished experts (e.g. from business or non-governmental organizations) The stay will last from 3 to 24 months, depending on the nature of the visit. The candidates will be chosen through competition, however, candidates who represent the University's strategic partners will have priority. In case of some competitions, along with the salary, there will be an annual budget for financing scientific research, which will facilitate the creation of research. Jagiellonian Fellowship Program will be the key action in the context of internationalization of scientific research conducted at the Jagiellonian University. It will make the University more open to the cooperation with experienced and young scientists from abroad. The action will directly contribute to achieving the objective of enhancing the role of young foreign researchers and experts in the activity of the University (2.1). Indirectly, the action will also influence the accomplishment of the objective of enhanced participation of researchers from the Jagiellonian University in international research cooperation (2.2), building sustainable and mutually beneficial research partnerships (2.3), expanding the internationality of educational programmes (3.2) as well as building the university brand and its international position (6.1). The financing of the action includes salaries, trips, accommodation. The costs have been estimated rationally and pursue the objectives of economy, efficiency and cost-effectiveness. They are strictly connected with the accomplishment of the objectives 2.1, 2.2, 2.3, 3.2 and 6.1. They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be accomplished within POBs: Anthropocene, qLife, DigiWorld, SciMat, BioS, FutureSoc, Heritage. Milestones: - preparing and running the first recruitment as part of the Jagiellonian Fellowship Program (subsequent recruitment every 6 months) (2-72) - admission of Jagiellonian Fellows at the JU (subsequent periods every 6 months) (13-72) - mid-term evaluation (37-42)

8	Jagiellonian Chairs Program	2	72	2,700,000.00	The action aims to hire distinguished scientists from abroad at the Jagiellonian University for the period of 1 to 3 years. The idea of the program is to create prestigious positions, which will be attractive for potential candidates, and at the same time will exert a positive influence on the worldwide recognition of the Jagiellonian University. Researchers who become beneficiaries of the program will be expected to conduct scientific research and seminars for doctoral students and the best undergraduates. Positions in the program will be given through competition, run at a university-wide level, but referring to particular positions within POBs. Jagiellonian Chairs aim to facilitate the accomplishment of the objectives: enhancing the role of young foreign researchers and experts in the activity of the University (2.1), building sustainable and mutually beneficial research partnerships (2.3), as well as building the university brand and its international position (6.1). The financing of the action includes salaries, trips, accommodation. The costs have been estimated rationally and pursue the objectives of economy, efficiency and cost-effectiveness. They are strictly connected with the accomplishment of the objectives: 2.1, 2.3, 6.1. They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be accomplished within POBs: FutureSoc, DigiWorld. Milestones: - preparing and running a competition as part of Jagiellonian Chairs Program (subsequent recruitment every 12 months) (2-72) - the stay of Jagiellonian Chair holders at the JU (subsequent periods every 12 months) (10-72) - mid-term evaluation (37-42)

9	Conferences & Seminars	3	72	13,360,000.00	The action will comprise organizing international congresses, conferences, seminars, workshops and other meetings dedicated to the presentation and discussion of scientific research results. It will allow the University to permanently become part of international scientific communication, in particular when it comes to issues regarding POBs. Although in the recent years the University has taken active part in organizing over a dozen congresses and conferences on an international scale, some of which are cyclical events, it is still crucial to increase its action in this area. The funds within the action will be given by means of competition. The action will ensure the accomplishment of the objectives: enhancing the role of young foreign researchers and experts in the activity of the University (2.1), enhanced participation of researchers from the Jagiellonian University in international research cooperation (2.2) as well as building sustainable and mutually beneficial research partnerships (2.3). The financing of the action includes trips, accommodation, organizational costs, together with venue rental. The costs have been estimated rationally and pursue the objectives of economy, efficiency and cost-effectiveness. They are strictly connected with the accomplishment of the objectives 2.1, 2.2, 2.3. They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be accomplished within POBs: Anthropocene, qLife, DigiWorld, SciMat, BioS, FutureSoc, Heritage. Milestones: - preparing and running the first competition as part of the action (subsequent competitions every 6 months) (3-72) - organizing a series of conferences and seminars (subsequent series organized every half a year) (10-72) - mid-term evaluation (37-42)

10	Outgoing Fund	3	72	54,940,000.00	The action will comprise setting up a fund for covering the following costs: 1. conference trips, 2. short-term internships and study trips (from 2 weeks to 3 months), 3. longer research stays (from 6 months to 1 year). The funds will be allocated through open competition, assuming that the activities planned by University employees are related to the themes of POBs. When it comes to internship and study trips, as well as longer research stays, the offers which aim to expand the cooperation with strategic partners will be given priority. The purpose of longer research stays will be to start or continue working on priority research issues, which should be performed within international research teams, the result of which is an application for an international project or the publication of research results in a reputable journal or publishing house. The action will contribute to the accomplishment of the objectives: enhanced participation of researchers from the Jagiellonian University in international research cooperation (2.2) and building sustainable and mutually beneficial research partnerships (2.3) as well as – indirectly– building the university brand and its international position (6.1). The financing of the action includes trips, accommodation, salaries, grants. The costs have been estimated rationally and pursue the objectives of economy, efficiency and cost-effectiveness. They are strictly connected with the accomplishment of the objectives 2.2, 2.3, 6.1. They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be accomplished within POBs: Anthropocene, qLife, DigiWorld, SciMat, BioS, FutureSoc, Heritage. Milestones: - preparing and running the first competition as part of the action (subsequent competitions every 6 months) (3-6) - conference trips, internship and research stays (7-72) - mid-term evaluation (37-42)
					Creating interdisciplinary research teams and conducting research on an international scale makes it necessary to extend the didactic offer of studies and doctoral schools. The new interdisciplinary educational offer should be addressed to candidates from

11	EduPrograms for the Future	4	72	13,530,000.00	Poland and abroad; therefore, it is planned: 1. to launch study and educational programs in doctoral schools in English 2. to launch programs implemented as part of summer schools, to which scientists from the University and abroad will be invited 3. to submit applications for international accreditation by selected fields of study, which will extend their international recognition, and obtaining the accreditation will confirm the high quality of education Considerable emphasis will be laid on creating interdisciplinary study programs run together with foreign partners, in particular within international university networks (such as UNA EUROPA, THE GUILD, COIMBRA) either in the form of a cooperation at the level of exchange of teaching staff or in the form of double and joint degree programs. Thus specific objectives will be accomplished: expanding the interdisciplinarity of educational programmes (3.1), expanding the internationality of educational programmes (3.2) as well as development and implementation of modern educational formats (3.3). At the same time, the action will contribute to improving the level of innovation, interdisciplinarity of research and the integration of University's mission (1.5), and the participation of researchers from the Jagiellonian University in international research cooperation (2.2). The financing of the action includes salaries, grants, trips, services, licenses, equipment. The costs have been estimated rationally and pursue the objectives of economy, efficiency and cost-effectiveness. They are strictly connected with the accomplishment of the objectives 3.1, 3.2, 3.3, 1.5, 2.2. They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be implemented horizontally – within POBs: Anthropocene, qLife, BioS, FutureSoc, Heritage as well as at the university level. Milestones: - preparation of the first-cycle and second-cycle programs of study and educational programs for doctoral schools (4-18) - submitting applications for accreditation (4-24) - preparing and running summer schools (12-72) - launching recruitment (18-24) - implementing cycles of programs (24-72) - mid-term evaluation

					(37-42)
12	EduTools	4	72	4,200,000.00	Apart from increasing the interdisciplinarity and internationalization of first-cycle and second-cycle programs of study and educational programs in doctoral schools, it is crucial to implement innovative educational methods, making it possible for undergraduates and doctoral students to carry out scientific projects. The activities within EduTools will comprise creating modern educational tools or purchasing the existing ones. Creating the tools online will take place at university-wide level, so that undergraduates and doctoral students whose education is connected with all the POBs can make use of modern educational methods. However, the implementation of particular tools will take place in those fields of study which require implementing education online on a larger scale. Another form of promoting knowledge and research conducted at the University as well as a specific platform between the University and social environment, will be creating courses which are available on the Internet. This way will ensure the accomplishment of the specific objectives which mainly refer to the development and implementation of modern educational formats (3.3), as well as to expanding the interdisciplinarity of educational programmes (3.1). At the same time the University will exert a greater social impact, which fulfills the objective (6.3). The financing of the action includes equipment, salaries, services. The costs have been estimated rationally and pursue the objectives of economy, efficiency and cost-effectiveness. They are strictly connected with the accomplishment of the objectives 3.1, 3.3, 6.3. They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be implemented horizontally – at the university level, focusing on the needs of particular POBs. Milestones: - purchase and implementation of modern educational tools (4-16) - development and implementation of educational tools online on selected fields of study as part of POBs (17-60) - mid-term evaluation (37-42) - evaluation of the influence of modern educational tools on the process of education (61-72)

13	Skills #1	4	72	4,700,000.00	Besides introducing undergraduates and doctoral students into scientific research, it is necessary to invest in their methodological competences and soft skills. Therefore, courses which aim to provide undergraduates and doctoral students with the methodological knowledge and skills, mainly in interdisciplinary context, should be prepared and implemented. For that reason, it is worth employing distinguished worldwide experts in research methods to deliver methodological courses for the best students from various fields of study as well as doctoral students who represent various scientific disciplines. The active participation of JU in research networks enables undergraduates and doctoral students to take part in the organization of scientific events, which can help develop their soft skills (e.g. team work, communication skills, intercultural and linguistic competences). A similar result may be achieved through introducing undergraduates and doctoral student into the cooperation with socio-economic environment, through internships or organization of scientific ventures of the University together with social and economic partners. The proposed activities enable the improvement in the quality of educating undergraduates and doctoral students and will facilitate their preparation for research conducted within a given priority research area. They will fulfill the specific objective which refers to the design and implementation of mechanisms for attracting and fostering talented students and doctoral students (3.4). The financing of the action includes salaries, services, conferences, courses. The costs have been estimated rationally and pursue the objectives of economy, efficiency and cost-effectiveness. They are strictly connected with the accomplishment of the objective 3.4. They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be implemented horizontally – at the university level, focusing on the needs of particular POBs. Milestones: - preparing the offer of programs for methodological courses for undergraduates and doctoral students (4-11) - implementation of the offer – courses conducted by distinguished worldwide

					scientists (one to two courses a year) (12-72) - mid-term evaluation (37-42)
14	Talent management	4	72	66,900,000.00	It’s a plan to create a system based on the ‘comprehensive’ care of the best candidates for studies and students, comprising the following elements: 1. the system of financial support for persons in new fields of study conducted in English, who have to pay for them. The best candidates in the recruitment process are going to receive a grant which will cover the whole course of study 2. extending the range of the Jagiellonian University Scholarship which, since this academic year, is given to the most outstanding candidates for first-cycle studies. The program will be modified so that a larger number of candidates, who are interested in studying in one of the fields connected with POBs, are included 3. creating the Grants for the Future competition which, on the one hand, will enable undergraduates and doctoral students to apply for mini-grants which will allow them for extending knowledge, conducting scientific research or developing soft skills, and on the other, will increase their motivation to get good results in learning, as the grants will be given to the best undergraduates and doctoral students. One of the elements of the competition will be the possibility to obtain financial support for a one-semester stay at a university abroad, in a field of study connected with POBs, 4. mentoring program – individual care of the best undergraduates and doctoral students, who achieve the best results in learning and show an interest and potential for conducting research. Mentors will need to introduce students into the conducted research as part of a given field of study connected with POBs. The action will be accomplished in order to design and implement mechanisms for attracting and fostering talented students and doctoral students (3.4). The financing of the action includes grants, salaries, trips, services. The costs have been estimated rationally and pursue the objectives of economy, efficiency and cost-effectiveness. They are strictly connected with the accomplishment of the objective 3.4. They will be qualified in accordance with the binding law as well as internal JU

					regulations. The action will be implemented horizontally – within POBs: Anthropocene, qLife, DigiWorld, SciMat, BioS, FutureSoc, Heritage as well as at the university level. Milestones: - creating the system of grants and funds - Grants for the Future (4-10) - implementation of the system of grants, funds and mentoring (tutoring) (11-60) - mid-term evaluation (37-42)
15	Skills #2	4	72	5,620,000.00	As part of the action, courses and workshops enabling the scientists of the Jagiellonian University to develop their competences, will be created. The courses and workshops will be dedicated to the development of research, linguistic and methodological competences, as well as soft skills and transversal skills. Modern formats, in particular blended learning and workshops, will be used. The program of the courses and workshops will be designed in such a way that it will form a consistent, methodological whole, so that the course participants are aware of the connections between various 'hard' and 'soft' competences, and furthermore, so that they can plan the order in which to participate in the courses. It is crucial that not only will the results of the Skills #2 program contribute to developing the qualifications of the University's scientific employees, which will consequently improve the quality of the conducted research, but also they will exert an influence on the implementation of the activities planned with reference to the modernization of the educational process and the related research-led and research-based learning. The action will facilitate the accomplishment of the objective concerning improving the level of research and transversal competences of researchers (4.1), whereas indirectly it will impact a number of other specific objectives, connected either with increasing the research potential of the University's employees, or improving the quality of the educational process of undergraduates and doctoral students. The financing of the action includes salaries, workshops, courses. The costs have been estimated rationally and pursue the objectives of economy, efficiency and cost-effectiveness. They are strictly connected with the accomplishment of the objective

					4.1. They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be implemented horizontally – at the university level, focusing on the needs of particular POBs. Milestones: - preparing the program of courses and workshops (including all the materials) (4-10) - promoting the knowledge regarding the courses / workshops and organizing the first recruitment (11-13) - the first cycle of courses / workshops (subsequent cycles in the following years) (14-72) - mid-term evaluation (37-42)

16	Individual Development Program	5	72	3,200,000.00	Although one of the main ideas behind the planned activities is to increase the University's research potential e.g. through creating international research teams, there is a need to implement system solutions which aim to increase the qualifications of individual employees. One of the proposed actions in this matter is the individual development program of employees, implemented within particular POBs. The action will comprise creating a fund which will finance the individual development of employees, with reference to competences connected with their position and career development. Employees will have an opportunity to apply for financing specialist workshops, obtaining certificates, taking a study trip; the funds will be allocated by means of competition, as long as the development of competences of those employees who are scientifically active within POBs, is financed first. The competition committee will take into consideration how justifiable the proposed method of developing competences is, as well as the consistence of the vision of the professional development presented by the applicant. The action will contribute to the accomplishment of the objective concerning improving the level of research and transversal competences of researchers (4.1). The financing of the action includes grants, salaries, trips, services. The costs have been estimated rationally and pursue the objectives of economy, efficiency and cost-effectiveness. They are strictly connected with the accomplishment of the objective 4.1. They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be implemented horizontally – at the university level, focusing on the needs of particular POBs. Milestones: - preparation of the rules and regulations regarding the fund (5-8) - promoting the knowledge regarding the fund and organizing the first recruitment (subsequent recruitments every 6 months) (9-12) - organizing the first and subsequent workshop/study trips (12-72) - mid-term evaluation (37-42)
					The aim of the action is to create a fund for financing several years' research programs

17	Young Labs Program	5	72	24,280,000.00	performed by young scientists. The grants will cover salaries, hiring research assistants, financing research equipment, conference and study trips, costs regarding publications as well as any other costs directly related to conducting research and promoting its results. The grants will be given by means of competition within the thematic scope of the POBs. An applicant will have an opportunity to obtain the funds for the period of 2 to 4 years. Priority will be given to interdisciplinary projects and those pursued in international cooperation, in particular with the strategic partners of the Jagiellonian University, as well as those the aim of which is to prepare the proposal of an international grant. The competition committee will evaluate firstly the quality of the presented project (on the high risk, high gain basis) and the research potential of the applicant, and secondly, the applicant's achievements. The action will comprise additional instruments such as the access to specialized workshops and mentoring. The action will contribute mainly to the accomplishment of the objectives: design and implementation of mechanisms fostering the creation of young research leaders (4.2) and, on a larger scale, also to the accomplishment of such objectives as the growth of human capital and its greater use (1.1), improving the efficiency of international fund-raising for research funding (1.3) as well as building the university brand and its international position (6.1). The financing of the action includes equipment, trips, publications, materials, licenses, salaries. The costs have been estimated rationally and pursue the objectives of economy, efficiency and cost-effectiveness. They are strictly connected with the accomplishment of the objectives 4.2, 1.1, 1.3, 6.1. They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be accomplished within POBs: Anthropocene and FutureSoc. Milestones: - preparation of the rules and regulations regarding the fund (5-8) - promoting the knowledge regarding the fund and organizing the first recruitment (subsequent recruitment in the months 18 and 30) (9-12) - accomplishment of the first and subsequent grant projects (13-72) - mid-term evaluation (37-42)

18	R2B - Research to Business	5	72	15,320,000.00	While planning comprehensive action the aim of which is the professional development of the University's employees, one should focus on the cooperation with socio-economic environment. R2B action will comprise: 1. creating a fund to finance the cooperation between teams of University scientists and business representatives. It will be possible to dedicate the resources to all the forms of cooperation with entities from the economic environment, including activities such as proof of concept (research-development works, which need to be performed in the process of the transfer of knowledge and technology), the current involvement of local and foreign experts, or else internships in companies 2. cooperation projects, i.e. preparing and running projects which are of significant socio-economic importance, with the participation of external entities. The projects may concern patent processes, accreditation of laboratories, cooperation which leads to the implementation of projects conducted with the participation of partners from the socio-economic environment. The projects may also lead to extending the range of expert action of the University's scientists, and creating think-tanks consisting of representatives from the University as well as from social environment. The action will facilitate the accomplishment of the following objectives: the expansion of the research ecosystem (1.2), design of a system enabling acquisition and fostering of competences related to cooperation with the social and economic environment (4.3) as well as the evolution of strategic partnerships with institutions from the social and economic environments (6.2) and strengthening the social impact of the University (6.3). The financing of the action includes salaries, services, patents, materials. The costs have been estimated rationally and pursue the objectives of economy, efficiency and cost-effectiveness. They are strictly connected with the accomplishment of the objectives 1.2, 4.3, 6.2, 6.3. They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be implemented horizontally – within POBs: Anthropocene, qLife, DigiWorld, SciMat, BioS, FutureSoc as well as at the

					university level. Milestones: - preparation of the rules and regulations regarding the fund (5-8) - accomplishment of the first and subsequent projects, action within FEC (9-72) - mid-term evaluation (37-42)
19	R2S - Research to Society	5	72	9,240,000.00	There is nowadays a necessity for conducting education and scientific research together with and for society. The activities within R2S will comprise: 1. creating a fund to finance the cooperation between teams of University scientists and representatives from social environment (e.g. educational programs, social programs) 2. implementation of Social Involvement Project dedicated to the preparation and running a series of projects in social environment together with strategic international partners (e.g. projects regarding information, education, information technology, social exclusion, Art&Science) 3. implementation of Science-based knowledge which refers to the use of various formats and means of communication, with a view to promoting knowledge based on science. The main idea of the program will be to show the target groups that science is an integral part of culture and is strictly connected with other aspects of social life 4. implementation of Social Responsibility Program the aim of which is to create and implement a modern, non-standard educational format, so called social projects. The program refers to the preparation and accomplishment of projects by groups of undergraduates and doctoral students dedicated to the cooperation with schools, hospitals, public benefit organizations, etc. The activities will facilitate the accomplishment of the following objectives: design of a system enabling acquisition and fostering of competences related to cooperation with the social and economic environment (4.3), evolution of strategic partnerships with institutions from the social and economic environments (6.2), and strengthening the social impact of the University (6.3). The financing of the action includes salaries, services. The costs have been estimated rationally and pursue the objectives of economy, efficiency and cost-effectiveness. They are strictly connected with the accomplishment of the objectives

					4.3, 6.2, 6.3. They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be implemented horizontally – at the university level, focusing on the needs of particular POBs. Milestones: - preparation of particular programs, preparation of the rules and regulations regarding the fund, announcing competitions (5-10) - the action of social programs, accomplishment of grant projects (11-72) - mid-term evaluation (37-42)
20	Gates - Space for science	6	72	21,600,000.00	Besides creating conditions for University employees suitable for conducting research within research teams or through research platforms, it is also necessary to create a space, in which the whole university community as well as representatives of socio-economic environment will have an opportunity to exchange ideas and experiences. Therefore, there is a need to create a new space for developing and exchanging ideas outside the traditional university structures as well as for integrating the university mission. Gates will bring together scientists, doctoral students, undergraduates and representatives of business, social institutions, cooperating on projects which combine the three missions of the University: scientific research, education and social involvement. One of the elements of Gates will be Future Entrepreneurs Centers, which will develop new forms of encouraging undergraduates and doctoral students to undertake ventures where science and business meet (centers will offer courses, acceleration programs, etc.) Gates will integrate various activities undertaken within the project, in particular R2B-Research to Business and R2S-Research to Society. The action will facilitate the accomplishment of the following objectives: improving the level of innovation, interdisciplinarity of research and the integration of University's mission (1.5), design and implementation of mechanisms for attracting and fostering talented students and doctoral students (3.4), development and implementation of modern educational formats (3.3) as well as the evolution of strategic partnerships with institutions from the social and economic environments (6.2), and strengthening the social impact of the

					University (6.3). The financing of the action includes salaries, services, materials, equipment, investments. The costs have been estimated rationally and pursue the objectives of economy, efficiency and cost-effectiveness. They are strictly connected with the accomplishment of the objectives 1.5, 3.4, 3.3, 6.2 and 6.3. They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be implemented horizontally – at the university level, focusing on the needs of particular POBs. Milestones: - establishing the terms of Gates (6-11) - activities which aim for the launch of Gates (12-20) - launching Gates action (20-22) - mid-term evaluation (37-42)
21	Labs	6	72	7,850,000.00	The action will comprise creating physical or virtual structures (excellence centers), where interdisciplinary scientific research will be conducted. One of the characteristics of Labs is the fact that although the scientific research will be the main element of their action, the structures will also deal with other aspects of University's mission, in particular education and cooperation with socio-economic environment. The educational activities of Labs will be connected with modern didactic formats such as research-based learning. Meanwhile, the Labs' cooperation with socio-economic environment will focus on commercialization activities, expertise (opinions, reports, recommendations) as well as the development of tools (benchmarks, tools supporting decision-making) which are useful for technical and social innovation. Labs will also be an instrument of integrating other activities within the project, in particular: New blood, R2R - Research to Research, Jagiellonian Fellowship Program, Jagiellonian Chairs Program, Young Labs Program. The action will facilitate the accomplishment of the following objectives: the expansion of the research ecosystem (1.2), improving the level of innovation, interdisciplinarity of research and the integration of University's mission (1.5), development and implementation of modern educational formats (3.3), evolution of strategic partnerships with institutions from the social and economic environments (6.2),

					and strengthening the social impact of the University (6.3). The financing of the action includes equipment, investments, services, materials, salaries. The costs have been estimated rationally and pursue the objectives of economy, efficiency and cost-effectiveness. They are strictly connected with the accomplishment of the objectives 1.2, 1.5, 3.3, 6.2 and 6.3. They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be implemented horizontally – at the university level, focusing on the needs of particular POBs. Milestones: - establishing the terms of Labs (6-9) - activities which aim for the launch of Labs (10-14) - launching Labs action(15) - mid-term evaluation (37-42)
22	Research Administration	6	72	9,600,000.00	Achieving success in the accomplishment of activities which aim to reach fundamental objectives of a research university requires an appropriate administrative support. While implementing a series of programs dedicated to scientists, it is necessary to remember about the need to initiate comprehensive activities aiming to develop the competences and effectiveness of employees responsible for the administrative support of the research activity. Therefore, the Research Administration program will be created, which comprises the implementation of instruments which facilitate the administration of conducting research as well as makes it more flexible. The action will particularly consist of: 1. the implementation of JU's Scientific Research Area, i.e. IT System to manage the research, 2. the implementation of mechanisms of sharing data and scientific research results through cloud technology, 3. creating a mechanism for exchanging information and needs between research groups (information sharing), 4. creating a mechanism facilitating the sharing of scientific infrastructure (infrastructure sharing), 5. the implementation of new administrative function of Project Manager, responsible for supporting the principal investigators of international grants in administrative activities and in financial matters. The action will facilitate the accomplishment of the following objectives: the growth of human

					capital and its greater use (1.1), expansion of the research ecosystem (1.2), improving the efficiency of international fund-raising for research funding (1.3), the introduction of modern university management concepts (5.2) as well as design and implementation of strategic reflection mechanisms to prepare the University for the challenges of the future (5.3). The financing of the action includes equipment, licenses, salaries, trips, services. The costs have been estimated rationally and pursue the objectives of economy, efficiency and cost-effectiveness. They are strictly connected with the accomplishment of the objectives 1.1, 1.2, 1.3, 5.2 and 5.3. They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be implemented at the university level. Milestones: - establishing the terms of the action (6-12) - actions which aim for the launch of the action (13-20) - hiring Project managers (10-72) - mid-term evaluation of the implementation of the plan (37-42)
					The action will comprise: 1. creating courses and workshops which will allow for the development of the competences of the management staff and administrative employees of the Jagiellonian University 2. creating a fund which will be used to finance external certified courses and workshops, as well as study visits and internships of the management staff and administrative employees of the Jagiellonian University The action will focus mainly on the development of management competences and administrative know-how following the latest worldwide trends, as well as on making use of the experience and developing a close cooperation with the University's international strategic partners at the level of management and administration (including networks such as: UNA EUROPA, THE GUILD, COIMBRA, as well as universities with which the JU has signed strategic agreements). The courses and workshops will be open to all the administrative employees and management staff of the JU, however, making use of the workshop-study fund will be dependent on the short- and long-term needs of the University. The action will contribute to the accomplishment

23	Skills #3	6	72	1,800,000.00	of the objectives: expanding internationalisation of the university's management process (5.1), introduction of modern university management concepts (5.2) as well as design and implementation of strategic reflection mechanisms to prepare the University for the challenges of the future (5.3). The financing of the action includes salaries, services. The costs have been estimated rationally and pursue the objectives of economy, efficiency and cost-effectiveness. They are strictly connected with the accomplishment of the objectives 5.1, 5.2, 5.3. They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be implemented horizontally – at the university level, focusing on the needs of particular POBs. Milestones: - preparing the program of all the courses and workshops (including all the materials), as well as preparing the rules and regulations of the study-workshop fund (6-12) - launching the fund (13) - promoting the knowledge regarding courses / workshops and organizing the first recruitment (13-15) - the first cycle of courses/workshops (subsequent cycles in the following years) (16-72) - mid-term evaluation (37-42)

24	Sustainable University	6	72	2,800,000.00	The action will comprise creating and implementing a Sustainable University program – the strategy of university management based on the rules of sustainable development. The strategy will refer to all the aspects of the University's mission: scientific research, education and the third mission. Standards regarding the space for conducting scientific research and educational action will be developed and implemented, online courses and workshops dedicated to sustainable development will be created, and the social projects performed by the University will focus on the enforcement of the rules of sustainable development. As part of the strategy, several years' plans regarding the development of university infrastructure will be devised (e.g. creating phone-free zones, a nursery, etc.) Within the strategy all the aspects of sustainable development, not only those which refer to environmental protection, will be taken into consideration – e.g. the needs of the disabled, mental health, etc. The action will directly contribute to the accomplishment of the following objectives: design and implementation of strategic reflection mechanisms to prepare the University for the challenges of the future (5.3), but it will also impact the accomplishment of other objectives: the expansion of the research ecosystem (1.2), the introduction of modern university management concepts (5.2) and strengthening the social impact of the University (6.3). The financing of the action includes investments, equipment, services, salaries. The costs have been estimated rationally and pursue the objectives of economy, efficiency and cost-effectiveness. They are strictly connected with the accomplishment of the objectives 5.3, 1.2, 5.2 and 6.3. They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be implemented at the university level. Milestones: - creating the program of the sustainable development of the university (6-18) - implementation of the first stages of the program (19-26) - mid-term evaluation (37-42)
					The action will comprise creating a special university entity –The Future University Lab

25	The Future Universty Lab	6	72	4,440,000.00	(FUL). FUL will be a kind of a university think-and-do tank, where ‘the university constantly re-thinks itself’. The activities of FUL will consist of: 1. reflecting on the idea of the university as such and defining the development directions of universities in the future, 2. developing new formats of university activity in all its aspects (scientific research, education, third mission, international cooperation) 3. monitoring and evaluation of the University activity 4. expert activities (preparing reports, opinions, benchmarks, legislative proposals) 5. revising and creating strategic plans for the development of the University FUL activities will involve scientists (specialists in management, economy, law, sociology, psychology, information technology, and other disciplines), as well as administrative staff, undergraduates, doctoral students, and external stakeholders. FUL will work in a close cooperation with a similar structure, which was established within an association of universities – UNA EUROPA. In the future, there is a possibility to extend the range of FUL’s cooperation with other strategic partners of the university. The action will be of significant importance to the accomplishment of the following objectives: expanding internationalisation of the university’s management process (5.1), the introduction of modern university management concepts (5.2), design and implementation of strategic reflection mechanisms to prepare the University for the challenges of the future (5.3) as well as building the university brand and its international position (6.1) and strengthening the social impact of the University (6.3). The financing of the action includes salaries, services. The costs have been estimated rationally and pursue the objectives of economy, efficiency and cost-effectiveness. They are strictly connected with the accomplishment of the objectives 5.1, 5.2, 5.3, 6.1 and 6.3. They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be implemented at the university level. Milestones: - preparing the action plan for Future University Lab (6-18) - Future University Lab action (19-72) - mid-term evaluation (37-42)

26	Management	6	72	8,500,000.00	The action will comprise creating structures of managing the activities performed within a research university and its evaluation. A steering committee headed by the chairman appointed by the Rector of the JU will be responsible for the supervision of the implementation of all the activities. The committee will additionally consist of representatives of particular POBs as well as one representative of the administrative staff of the University. The steering committee may appoint the Advisory Board, which will consist of reputable scientists from significant scientific centers. The current implementation of the project will be monitored by the Office of Institutional Analyses and Reporting of the JU, and on a long-term basis– The Future University Lab. The action will directly contribute to the accomplishment of the following objectives: expanding internationalisation of the university's management process (5.1), and introduction of modern university management concepts (5.2), but it will also be of significant importance to the accomplishment of all the objectives of the project. The financing of the action includes salaries, trips, services, licenses. The costs have been estimated rationally and pursue the objectives of economy, efficiency and cost-effectiveness. They are strictly connected with the accomplishment of the objectives 5.1 and 5.2. They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be implemented horizontally – at the university level, focusing on the needs of particular POBs. Milestones: - appointing the steering committee and councils of POBs (6-9) - appointing the Advisory Board and managers of Labs and Gates - Space for science (10-12) - launching the action of the new structures (13-16) - mid-term evaluation (37-42)

27	Visibility Strategy	6	72	1,950,000.00	The action will comprise the development and implementation of the strategy of the international development of the brand and improving the international position of the Jagiellonian University. The strategy will consist of: 1. developing new mechanisms of promoting scientific research conducted at the Jagiellonian University, as well as implementing an information program which will make the JU an attractive place of work for scientists from abroad, 2. developing new mechanisms of promoting English language programs of studies at the JU among potential students from abroad, 3. better use of the Jagiellonian University's presence in prestigious research networks, 4. better use of the JU's network of alumni, in particular those who live abroad, 5. analysis of the factors which exert influence on the position of the Jagiellonian University in worldwide university rankings, and preparing the suitable action plan, the aim of which will be to improve the position. The action will directly contribute to the accomplishment of the following objectives: building the university brand and its international position (6.1); it will also impact the accomplishment of the objectives: evolution of strategic partnerships with institutions from the social and economic environments (6.2) and strengthening the social impact of the University (6.3). The financing of the action includes salaries, services trips, equipment, licenses. The costs have been estimated rationally, according to the principles of frugality and cost-effectiveness They are strictly connected with the accomplishment of the objectives 6.1, 6.2 and 6.3. They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be implemented at the university level. Milestones: - developing the Visibility Strategy (6-18) - implementation of the Visibility Strategy (19-72) - mid-term evaluation (37-42)

D.4. METHODOLOGY OF MONITORING PROGRESS IN IMPLEMENTATION OF THE PLAN

a) Description of the methodology

Attachment no4, File: Methodology_of_monitoring.pdf

b) MANDATORY INDICATORS

Indicator 1: % Articles in Top 10% (U and P) - according to the indicated database

for a university as a whole / for each priority research area *	Reference years for base values						Reference years for target values
	2013	2014	2015	2016	2017	Value for the period 2013–2017	Value for the period 2020–2024
an indicator for a university as a whole	10.50	12.50	12.00	12.40	14.00	12.30	16.00
	A number of articles in top 10% in WoS or Scopusb in the reference years and period.					2013 - 237 articles; 2014 - 279 articles; 2015 - 301 articles; 2016 - 323 articles; 2017 - 377 articles; 2013-2017 - 1517 articles 2020-2024 - 1750 articles	
Heritage - cultural heritage (identity of individuals and entire societies, language, civilizational challenges of modern world).	4.20	2.40	2.40	5.40	2.60	3.40	3.50
	A number of articles in top 10% in WoS or Scopusb in the reference years and period.					2013 - 4 articles; 2014 - 3 articles; 2015 - 3 articles; 2016 - 8 articles; 2017 - 4 articles; 2013-2017 - 22 articles; 2020-2024 - 23 articles	
FutureSoc - interdisciplinary research on social changes caused by the development of new technologies and the cognitive sciences (politics, security, law, management, mind, communication, society).	8.80	4.80	4.90	4.80	4.40	5.30	8.00
	A number of articles in top 10% in WoS or Scopusb in the reference years and period.					2013 - 15 articles; 2014 - 10 articles; 2015 - 12 articles; 2016 - 13 articles; 2017 - 11 articles; 2013-2017 - 61 articles; 2020-2024 - 100 articles	
BioS - structural and translational biology (genomics and bioinformatics, cell biology, evolutionary biology and biodiversity).	8.50	11.00	10.40	10.90	10.30	10.30	10.82
	A number of articles in top 10% in WoS or Scopusb in the reference years and period.					2013 - 45 articles; 2014 - 60 articles; 2015 - 68 articles; 2016 - 71 articles; 2017 - 69 articles; 2013-2017 - 313 articles; 2020-2024 - 328 articles	

qLife - better research for better quality of life (translational research: civilization diseases, reproductive health, regenerative medicine; drug development: mechanisms, targets, clinical trials).	8.80	11.20	8.70	10.70	12.70	10.50	11.50
	A number of articles in top 10% in WoS or Scopusb in the reference years and period.					2013 - 98 articles; 2014 - 119 articles; 2015 - 105 articles; 2016 - 134 articles; 2017 - 167 articles; 2013-2017 - 623 articles; 2020-2024 - 650 articles	
SciMat - design of advanced materials from models and theoretical tools via synthesis and characterization to applications (nanostructures, electronics, photonics, biomaterials, energy sources).	7.40	10.40	9.50	8.00	13.60	9.80	10.50
	A number of articles in top 10% in WoS or Scopusb in the reference years and period.					2013 - 48 articles; 2014 - 65 articles; 2015 - 72 articles; 2016 - 58 articles; 2017 - 104 articles; 2013-2017 - 347 articles; 2020-2024 - 380 articles	
Anthropocene - the causes, paths and consequences of global environmental changes (human impact on environmental systems, climate, globalization, migration, circular economy, new technologies).	13.40	16.30	16.40	16.70	19.00	16.50	18.00
	A number of articles in top 10% in WoS or Scopusb in the reference years and period.					2013 - 62 articles; 2014 - 85 articles; 2015 - 105 articles; 2016 - 104 articles; 2017 - 125 articles; 2013-2017 - 481 articles; 2020-2024 - 520 articles	
DigiWorld - digital world and cyber space (innovative technologies of artificial intelligence and machine learning in interdisciplinary applications).	15.00	14.70	16.80	16.20	17.10	16.00	20.00
	A number of articles in top 10% in WoS or Scopusb in the reference years and period.					2013 - 100 articles; 2014 - 92 articles; 2015 - 119 articles; 2016 - 118 articles; 2017 - 119 articles; 2013-2017 - 548 articles; 2020-2024 - 600 articles	

Indicator 2: Normalized Citation Impact (U and P) - according to the indicated database

for a university as a whole / for each priority research area *	Reference years for base values						Reference years for target values
	2013	2014	2015	2016	2017	Value for the period 2013–2017	Value for the period 2020–2024
an indicator for a university as a whole	1.17	1.23	1.21	1.88	1.88	1.50	1.85
Heritage - cultural heritage (identity of individuals and entire societies, language, civilizational challenges of modern world).	0.66	0.49	0.43	0.77	0.78	0.64	0.66
FutureSoc - interdisciplinary research on social changes caused by the development of new technologies and the cognitive sciences (politics, security, law, management, mind, communication, society).	0.68	0.62	0.72	0.68	0.79	0.70	0.90
BioS - structural and translational biology (genomics and bioinformatics, cell biology, evolutionary biology and biodiversity).	0.95	1.03	1.05	1.18	1.10	1.07	1.12
qLife - better research for better quality of life (translational research: civilization diseases, reproductive health, regenerative medicine; drug development: mechanisms, targets, clinical trials).	1.05	1.27	1.15	2.57	2.53	1.76	2.00
SciMat - design of advanced materials from models and theoretical tools via synthesis and characterization to applications (nanostructures, electronics, photonics, biomaterials, energy sources).	0.92	1.05	1.01	0.92	1.07	1.00	1.05
DigiWorld - digital world and cyber space (innovative technologies of artificial intelligence and machine learning in interdisciplinary applications).	1.45	1.35	1.47	1.40	1.38	1.41	1.55
Anthropocene - the causes, paths and consequences of global environmental changes (human impact on environmental systems, climate, globalization, migration, circular economy, new technologies).	1.26	1.36	1.35	1.34	1.27	1.32	1.36

Indicator 3: % Articles in International Collaborations (P) - according to the indicated database

for a university as a whole / for each priority research area *	Reference years for base values						Reference years for target values
	2013	2014	2015	2016	2017	Value for the period 2013–2017	Value for the period 2020–2024
Heritage - cultural heritage (identity of individuals and entire societies, language, civilizational challenges of modern world).	13.50	10.60	11.40	18.90	16.90	14.60	14.80
FutureSoc - interdisciplinary research on social changes caused by the development of new technologies and the cognitive sciences (politics, security, law, management, mind, communication, society).	21.80	20.10	21.40	26.90	25.60	23.50	28.00
BioS - structural and translational biology (genomics and bioinformatics, cell biology, evolutionary biology and biodiversity).	36.80	37.70	39.00	41.20	41.10	39.30	47.16
qLife - better research for better quality of life (translational research: civilization diseases, reproductive health, regenerative medicine; drug development: mechanisms, targets, clinical trials).	29.50	32.40	30.20	35.00	35.10	32.60	40.00
SciMat - design of advanced materials from models and theoretical tools via synthesis and characterization to applications (nanostructures, electronics, photonics, biomaterials, energy sources).	42.70	45.90	42.50	46.00	45.90	44.60	48.00
DigiWorld - digital world and cyber space (innovative technologies of artificial intelligence and machine learning in interdisciplinary applications).	52.40	49.20	51.80	55.40	53.50	52.60	60.00
Anthropocene - the causes, paths and consequences of global environmental changes (human impact on environmental systems, climate, globalization, migration, circular economy, new technologies).	51.30	54.50	51.50	54.40	54.10	53.20	58.00

Indicator 4: Scholarly Books of Prestigious Publishers (P)

for each priority research area *	Number of scholarly books published in the years 2014–2018	Number of scholarly books published in the years 2021–2025
Heritage - cultural heritage (identity of individuals and entire societies, language, civilizational challenges of modern world).	6	9
FutureSoc - interdisciplinary research on social changes caused by the development of new technologies and the cognitive sciences (politics, security, law, management, mind, communication, society).	4	15
DigiWorld - digital world and cyber space (innovative technologies of artificial intelligence and machine learning in interdisciplinary applications).	3	4
Anthropocene - the causes, paths and consequences of global environmental changes (human impact on environmental systems, climate, globalization, migration, circular economy, new technologies).	3	4

A list of scholarly books published in the years 2014–2018, together with basic bibliographic data, including a name of publishing house.

Attachment no5, File: IDUB Scholarly Books of Prestigious Publishers ENG.pdf

Indicator 5: International Research Grants (P)

for each priority research area *	Number of grants in 2014-2018	Number of grants in 2021-2025
Heritage - cultural heritage (identity of individuals and entire societies, language, civilizational challenges of modern world).	8	3
FutureSoc - interdisciplinary research on social changes caused by the development of new technologies and the cognitive sciences (politics, security, law, management, mind, communication, society).	8	13
BioS - structural and translational biology (genomics and bioinformatics, cell biology, evolutionary biology and biodiversity).	6	10
qLife - better research for better quality of life (translational research: civilization diseases, reproductive health, regenerative medicine; drug development: mechanisms, targets, clinical trials).	3	5
SciMat - design of advanced materials from models and theoretical tools via synthesis and characterization to applications (nanostructures, electronics, photonics, biomaterials, energy sources).	7	8
DigiWorld - digital world and cyber space (innovative technologies of artificial intelligence and machine learning in interdisciplinary applications).	10	20
Anthropocene - the causes, paths and consequences of global environmental changes (human impact on environmental systems, climate, globalization, migration, circular economy, new technologies).	4	5

A list of the most important grants received in the years 2014–2018 (up to ten grants for each priority research area) which comprises a project title, name of grant funder and date of conclusion of a contract.

Heritage – cultural heritage (identity of individuals and entire societies, language, civilizational challenges of modern world).

1. (Re)constructing a Bible. A new approach to unedited Biblical manuscripts as sources for the early history of the Karaim language (GRANT ERC-2018-STG); EUROPEAN COMMISION; 04.09.2018
2. Performances of Memory: Testimonial, Reconstructive and Counterfactual Strategies in Literature and Performative Arts of the 20th and 21st Centuries; NATIONAL SCIENCE CENTRE; 24.02.2016
3. Artificial Bodies/Living Machines in a Laboratory of Performative Arts; NATIONAL SCIENCE CENTRE; 23.04.2015
4. At the meeting point of cultures and nations. Galician towns and small towns in the Josephinian Cadastre Survey; NATIONAL SCIENCE CENTRE; 11.04.2017
5. The location of the Battle of Gaugamel in the light of multidisciplinary research; NATIONAL SCIENCE CENTRE; 17.04.2018
6. Jews in Krakow's municipal self-government in the Galkician period (1866-1914): their participation and the real effects of their activities; NATIONAL SCIENCE CENTRE; 27.10.2016

7. Space-time stories: the theory and applications; NATIONAL SCIENCE CENTRE; 27.03.2017
8. Does ecotourism have ability to empower residents to overcome environmental discrimination due to Natura 2000 in Poland? An examination through the lens of Weber's theory of formal and substantive rationality.; NATIONAL SCIENCE CENTRE; 05.01.2018

FutureSoc – interdisciplinary research on social changes caused by the development of new technologies and the cognitive sciences (politics, security, law, management, mind, communication, society).

1. Deep uncertainties in bioethics: genetic research, preventive medicine, reproductive decisions (GRANT ERC-2018-STG); EUROPEAN COMMISION; 29.10.2018
2. Threat to Control and Social Norms: Conformity, Change or Formation.; NATIONAL SCIENCE CENTRE; 20.11.2015
3. Trust and Transparency in an Age of Surveillance. American, German and Polish Perspectives.; NATIONAL SCIENCE CENTRE; 04.04.2018
4. Moderators of the effects of narcissism on social outcomes; NATIONAL SCIENCE CENTRE; 03.04.2018
5. Psychological ‘Ego’ in the social world: attachment, theory of mind and the concept of ‘Ego’ in adolescence.; NATIONAL SCIENCE CENTRE; 05.05.2014
6. Cognitive and neuronal mechanisms of metacognitive awareness.; NATIONAL SCIENCE CENTRE; 23.04.2015
7. The relation between two dimensions of social perception: warmth and competence.; NATIONAL SCIENCE CENTRE; 07.04.2017
8. National identity from a relational perspective; the influence of intragroup relations on intergroup attitudes.; NATIONAL SCIENCE CENTRE; 18.05.2015

BioS – Structural and translational biology (genomics and bioinformatics, cell biology, evolutionary biology and biodiversity).

1. Proposal to establish the Strategic Development Installation Grants Special Projects - DR SEBASTIAN GLATT; EMBO; 21.01.2016
2. The role of heme oxygenase in the differentiation of cardiomyocytes from induced pluripotent stem cells (HOx-Card); NATIONAL SCIENCE CENTRE; 08.06.2015
3. DNA repair in hematopoietic stem cells: what is the role of the nuclear form of heme oxygenase-1?; NATIONAL SCIENCE CENTRE; 13.05.2016
4. Development of in vitro spectroscopic analysis of lipid drops: their biochemistry and location in relation to the biological function; NATIONAL SCIENCE CENTRE; 11.04.2017
5. Expression and role of vaspin in regulating the porcine ovary function; NATIONAL SCIENCE CENTRE; 11.04.2017
6. Characteristics of PEX5 protein with Trypanosoma cruzi, a promising molecular target in Chagas disease; NATIONAL SCIENCE CENTRE; 27.04.2018

qLife – better research for better quality of life (translational research: civilization diseases, reproductive health, regenerative medicine; drug development: mechanisms, targets, clinical trials).

1. GRAN-T-MTC: Phase I clinical trial using a novel CCK-2/gastrin receptor-localizing radiolabelled peptide probe for personalized diagnosis and therapy of patiens with progressive or metastatic medullary thyroid carcinoma; ERA-NET on Translational Cancer Research (TransCan); 20.03.2014
2. Pro Health 65+: Health Promotion and prevention of risk action for seniors; EU Health Programme; 10.10.2014
3. SHARE: Pilot study on validation of dried blood spots (DBS) in random sample of the Polish population: collection, storage, shipment and blood samples analysis. ; Survey of Health, Ageing and Retirement in Europe (SHARE) - European Research Infrastructure Consortium (ERIC); 24.09.2015

SciMat - design of advanced materials from models and theoretical tools via synthesis and characterization to applications (nanostructures, electronics, photonics, biomaterials, energy sources).

1. Experimental investigation and modelling of nanoscale solid-state reactions with high technological impact; EUROPEAN COMMISION; 21.05.2014
2. Zero and ultra-low field nuclear magnetic resonance; EUROPEAN COMMISION; 01.02.2018
3. Nonsmooth Contact Dynamics - CONMECH; EUROPEAN COMMISION; 29.10.2018
4. Synthesis and characterization of energy related nanomaterials; NATIONAL SCIENCE CENTRE; 19.04.2018
5. Theory Blind Quantum Control; NATIONAL SCIENCE CENTRE; 12.04.2018
6. Non-equilibrium dynamics in atomic systems for quantum simulations.; NATIONAL SCIENCE CENTRE; 13.04.2018
7. Quantum technologies for lattice gauge theories; NATIONAL SCIENCE CENTRE; 12.04.2018

DigiWorld – digital world and cyber space (innovative technologies of artificial intelligence and machine learning in interdisciplinary applications).

1. (Re)constructing a Bible. A new approach to unedited Biblical manuscripts as sources for the early history of the Karaim language (GRANT ERC-2018-STG); EUROPEAN COMMISION; 04.09.2018
2. Nonsmooth Contact Dynamics - CONMECH; EUROPEAN COMMISION; 29.10.2018
3. Study of proton-proton, hadron-nucleus and nucleus-nucleus relatyvistic collisions in the NA61/SHINE experiment at the CERN SPS - second stage.; NATIONAL SCIENCE CENTRE; 11.07.2016
4. Non-equilibrium dynamics in atomic systems for quantum simulations.; NATIONAL SCIENCE CENTRE; 13.04.2018
5. Uncertainty Relations and Quantum Entanglemen; NATIONAL SCIENCE CENTRE, 09.06.2016
6. Quantum technologies for lattice gauge theories; NATIONAL SCIENCE CENTRE; 12.04.2018
7. Theory Blind Quantum Control; NATIONAL SCIENCE CENTRE; 12.04.2018
8. Nanoscale Objects with Impossible Geometry. NATIONAL SCIENCE CENTRE; 7.11.2016
9. Trust and Transparency in an Age of Surveillance. American, German and Polish Perspectives; NATIONAL SCIENCE CENTRE; 04.04.2018
10. Experimental investigation and modelling of nanoscale solid-state reactions with high technological impact; EUROPEAN COMMISION; 21.05.2014

Anthropocene – the causes, paths and consequences of global environmental changes (human impact on environmental systems, climate, globalization, migration, circular economy, new technologies).

1. Synthesis and characterization of energy related nanomaterials; NATIONAL SCIENCE CENTRE; 19.04.2018
2. Does ecotourism have ability to empower residents to overcome environmental discrimination due to Natura 2000 in Poland? An examination through the lens of Weber's theory of formal and substantive rationality.; NATIONAL SCIENCE CENTRE; 05.01.2018
3. Anatomy of Disbelief: Explaining Polish Climate Scepticism; KING'S COLLEGE LONDON; 01.10.2018
4. Ichnological and sedimentological evidence of late glacial and Holocene environmental changes in the eastern part of the European Sand Belt; NATIONAL SCIENCE CENTRE; 01.09.2018

Indicator 6: Staff Policy Openness (U)

Value as of 31 December 2018 (generated automatically from POL-on system)	Value as of 31 December 2025
21.45	26.00
Indicator 7: Student-to-Staff Ratio (U)	
Value as of 31 December 2018 (generated automatically from POL-on system)	Value as of 31 December 2025
8.39	6.50

c) OPTIONAL INDICATORS
Indicator 1: Normalized Citation Impact for Internationally Co-authored Articles (P) - according to the indicated database

for each priority research area	Reference years for base values						Reference years for target values
	2013	2014	2015	2016	2017	Value for the period 2013–2017	Value for the period 2020–2024
Heritage - cultural heritage (identity of individuals and entire societies, language, civilizational challenges of modern world).	2.15	2.09	1.27	2.74	2.67	2.33	2.35
FutureSoc - interdisciplinary research on social changes caused by the development of new technologies and the cognitive sciences (politics, security, law, management, mind, communication, society).	1.81	1.67	1.73	1.32	1.62	1.59	1.90
BioS - structural and translational biology (genomics and bioinformatics, cell biology, evolutionary biology and biodiversity).	1.28	1.48	1.50	1.64	1.60	1.52	1.75
qLife - better research for better quality of life (translational research: civilization diseases, reproductive health, regenerative medicine; drug development: mechanisms, targets, clinical trials).	2.08	2.57	2.21	5.93	5.88	3.97	4.00
SciMat - design of advanced materials from models and theoretical tools via synthesis and characterization to applications (nanostructures, electronics, photonics, biomaterials, energy sources).	1.01	1.31	1.24	1.06	1.43	1.21	1.27
DigiWorld - digital world and cyber space (innovative technologies of artificial intelligence and machine learning in interdisciplinary applications).	2.17	2.03	2.25	2.03	2.05	2.11	2.20
Anthropocene - the causes, paths and consequences of global environmental changes (human impact on environmental systems, climate, globalization, migration, circular economy, new technologies).	1.75	1.83	1.91	1.88	1.79	1.84	1.86

Indicator 3: Centres of Excellence (U)

Number of centres as of the date of application submission	Number of centres as of 31 December 2025
0	2

A list of centres of excellence as of the date of application submission comprising a name of centre and competition within which the centre has been established.

N/A

Indicator 4:% of International Staff (U)

Value as of 31 December 2018 (generated automatically from POL-on system)	Value as of 31 December 2025
2.97	4.50

Indicator 7: Doctoral Students' Articles in Q1 Journals (U)

Average of values for each year in the period 2020–2024
0.08

Indicator 8:% of International Students (U)

Value as of 31 December 2018 (generated automatically from POL-on system)	Value as of 31 December 2025
8.40	15.00

Indicator 9: Number of inventions protected by foreign patents (U)

Value for the period 2014–2018	Value for the period 2021–2025
50	65

A list of the most important inventions implemented for the first time in years 2014–2018 protected by foreign patents granted to the university (up to 5 implementations) which comprises a title of invention, a patent ID, place and year of implementation, a name of implementing entity and implementation description (up to 12500 characters, including spaces, for each implementation).

Attachment no6, File: IDUB Patents 2014-2018.pdf

Indicator 12: Foreign accreditations (U)

Number of accreditations as of the date of application submission	Number as of 31 December 2025
0	10

A list of accreditations as of the date of application submission which comprises a name of accreditation institution and a date when an accreditation has been granted.
Attachment no7, File: IDUB Foreign accreditations.pdf

d) INDICATORS DETERMINED BY A UNIVERSITY			
No.	Indicator title	Reference years for base values	Reference years for target values
1.	Implementation of IT system for research management (Scientific Research Zone of the Jagiellonian University).	2019 - 0	2023 - 1
	Additional information	IT solutions currently used in the Jagiellonian University in the field of scientific research do not coincide with the scope of the implemented processes. The solution will be the implementation of a comprehensive IT system for the management of scientific research - Scientific Research Zone of the Jagiellonian University – SRZUJ.	
2.	Number of consortia formed with strategic stakeholders.	2019 - 1	2023 - 4
	Additional information	It is planned to establish stakeholder councils in three thematic areas: the humanities, life sciences and life sciences, and medicine and life sciences. Such bodies could include entrepreneurs (e.g. successful people - graduates of Jagiellonian University), representatives of local governments, cities and NGOs, heads of disciplines' councils, doctoral schools, heads of units, scientists with outstanding achievements. The councils could speak about the desired directions of education and research, key projects, propose internships for students and doctoral students and finally declare their participation in strategic ventures of the Jagiellonian University.	
3.	Number of conferences on equality and pro-equity measures implemented under educational and scientific activities.	2019 - 25	2024 - 75
	Additional information	The pillars of the University's social sustainability are equality, respect for diversity, openness to attitudes and views, and security. These elements apply to all stakeholder groups involved in the life of the University. Knowledge and awareness are the foundation for harmonious integration of these elements. Their extension can be effectively implemented through conferences, lectures, workshops, discussion panels, performances, etc.	

4.	Number of created centers improving competences of students, doctoral students and employees of the University.	2019 - 0	2024 - 2
	Additional information	The aim of establishing the centers is to provide comprehensive support to university employees in continuous improvement of entrepreneurial, research and professional competences, including transversal ones, necessary at all stages of a researcher's career, taking into account different contexts of researchers' activity, i.e. scientific, information and communication environment (Internet, social media), economic and business environment (intersectoral), cultural environment (interculturality), legal and ethical environment (research integrity, open access, open science, open education).	
5.	Number of running MOOC (Massive Open Online Course).	2019 - 40	2024 - 100
	Additional information	In the era of changing social and cultural realities, MOOC’s courses are becoming a free source of knowledge available to everyone, regardless of their place of residence or age. MOOC technologies not only offer great opportunities for education, but may also increase interest in a given scientific subject.	
6.	Number of Open Science publications.	Open access resources in Jagiellonian University Repository divided into years: 2013 - 1431; 2014 - 1486; 2015 - 1648; 2016 - 1371; 2017 - 1808; 2018 - 1828; 2019 - 224; dissertations: 2014 - 1; 2015 - 65; 2016 - 1; 2019 - 35	2020 - 2500; 2021 - 2500; 2022 - 2500; 2023 - 2500; 2024 - 2500; 2025 - 2500
	Additional information	Increasing the transparency, integrity and access to scientific research results is one of the priorities of the Jagiellonian University as a research university. Open Science provides opportunities for improved interdisciplinary research activities, which are key to solving complex research problems and societal challenges.	
7.	Number of photovoltaic cells installed.	2019 - 2270 pieces (2310 square meters)	2025 - 3720 pieces (3049 square meters)
	Additional information	Photovoltaics is a field that has a big future and is developing dynamically. Supporting renewable energy sources is an important way to fight air pollution, especially in Krakow. The use of renewable energy sources is an element of ecological sustainability of the University, developed within the EI-RU initiative.	

8.	Number of students supported by the Disability Support Service.	2014 - 677; 2015 - 653; 2016 - 619; 2017 - 644; 2018 - 665	2024 - 750
	Additional information	The mission of the Disability Support Service is to provide equal opportunities for persons with disabilities through the development and implementation of reasonable adjustments aimed at ensuring their equal treatment in access to education. Number of supported students may be thus a specific measure of the activity of the Jagiellonian University in the field of equity policy against social and educational exclusions.	

E. DESCRIPTION OF ACTIONS AIMED AT ENSURING SUSTAINABILITY OF RESULTS OF THE PLAN, PLANNED FOR 2026

No.	Title of the action	The starting date and deadline for completion of the action		Expected total costs (in PLN)	Description of the action, justification of the action and amount of costs, the impact of the action on the achievement of the objective
		Starting date	Deadline		
1	Reevaluation	1	6	1,000,000.00	The action will consist in a complex evaluation of the realization of the plan and the preparation of its new version for the years 2027-2032. The plan will be based on: 1. The outcomes of the mid-term evaluation of the implementation of the plan; 2. The experiences collected during the realization of the plan; 3. The recommendations developed by The Future University Lab; 4. The conclusions regarding the realization of the plan presented by the experts of the Ministry of Science and Higher Education; 5. The conclusions from the consultations with external partners. Within the action, there will also be prepared: 1. A SWOT analysis; 2. An evaluation of the management model of the University; 3. A report pertaining to the current (as of 2026) trends in the world science and university education. The evaluation and potential revision will pertain to: 1. The assumptions of the plan; 2. The specific objectives of the plan; 3. The set of actions which serve to fulfill the objectives. The action is directly connected to all the specific objectives. The costs of the development of the new version of the plan include, inter alia, salaries, services (e.g. the audit of the university's management model), travels. The costs have been estimated according to the principles of frugality and cost-effectiveness. They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be implemented at the university level.

2	New blood	1	12	15,000,000.00	The action will be implemented in the same form as in the years 2020-2025; however, modifications resulting from the mid-term evaluation of the plan (months 37-43), verification of research results (61-72), and the experiences gathered during the realization of the project will be adopted. The costs of the action include: salaries, equipment, materials. The costs have been estimated according to the principles of frugality and cost-effectiveness. They are directly connected to the realization of the objectives: 1.1 (The growth of human capital and its greater use); and 2.1 (Enhancing the role of young foreign researchers and experts in the activity of the University). They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be realized within POBs: Anthropocene, qLife, DigiWorld, SciMat, BioS, FutureSoc. *refers to each action: the projected costs for the year 2016 constitute only a part of outlay on the accomplishment of JU’s strategy (i.e. the amount of increased subsidy and a part of own resources). It is estimated that the total outlay of the comprehensive implementation of JU’s strategy will exceed the planned budget by roughly 200%.

3	Incentives program	1	12	6,600,000.00	The action will be implemented in the same form as in the years 2020-2025; however, modifications resulting from the mid-term evaluation of the plan (months 37-43), verification of verification of the functioning of the system, and the experiences gathered during the realization of the project will be adopted. The costs of the action include: salaries, scholarships, services, travels, materials, patents. The costs have been estimated according to the principles of frugality and cost-effectiveness. They are directly connected to the realization of the objectives: 1.1 (The growth of human capital and its greater use); 1.3 (Improving the efficiency of international fund-raising for research funding); 1.5 (Improving the level of innovation, interdisciplinarity of research and the integration of University's mission); 5.3 (Design and implementation of strategic reflection mechanisms to prepare the University for the challenges of the future). They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be realized within POBs: Anthropocene, qLife, DigiWorld, SciMat, BioS, FutureSoc, Heritage.

4	R2R-Research to Research	1	12	3,500,000.00	The action will be implemented in the same form as in the years 2020-2025; however, modifications resulting from the mid-term evaluation of the plan (months 37-43), and the experiences gathered during the realization of the project will be adopted. The costs of the action include: salaries, services, travels, materials, equipment. The costs have been estimated according to the principles of frugality and cost-effectiveness. They are directly connected to the realization of the objectives: 1.2 (Expansion of the research ecosystem); 1.5 (Improving the level of innovation, interdisciplinarity of research and the integration of University's mission); 2.1 (Enhancing the role of young foreign researchers and experts in the activity of the University); 2.2 (Enhanced participation of researchers from the Jagiellonian University in international research cooperation); 2.3 (Building sustainable and mutually beneficial research partnerships). They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be realized within POBs: Anthropocene, DigiWorld, SciMat, BioS, FutureSoc, Heritage.
5	Open access	1	12	6,000,000.00	The action will be implemented in the same form as in the years 2020-2025; however, modifications resulting from the mid-term evaluation of the plan (months 37-43), and the experiences gathered during the realization of the project will be adopted. The costs of the action include: licenses, subscriptions, salaries, services. The costs have been estimated according to the principles of frugality and cost-effectiveness. They are directly connected to the realization of the objective: 1.4 (Improving the openness of research and maximizing access to research results). They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be realized horizontally at the university level, focusing on the needs of particular POBs.

6	Strategic research infrastructure #1	1	12	2,400,000.00	The action will be implemented in the same form as in the years 2020-2025; however, modifications resulting from the mid-term evaluation of the plan (months 37-43), and the experiences gathered during the realization of the project, as well as the current needs, will be adopted. The costs of the action include: equipment, materials. The costs have been estimated according to the principles of frugality and cost-effectiveness. They are directly connected to the realization of the objective: 1.2 (Expansion of the research ecosystem). They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be realized in particular within the POBs: Anthropocene, qLife, BioS.
7	Strategic research infrastructure #2	1	12	2,400,000.00	The action will be implemented in the same form as in the years 2020-2025; however, modifications resulting from the mid-term evaluation of the plan (months 37-43), and the experiences gathered during the realization of the project, as well as the current needs, will be adopted. The costs of the action include: equipment, materials. The costs have been estimated according to the principles of frugality and cost-effectiveness. They are directly connected to the realization of the objective: 1.2 (Expansion of the research ecosystem); 2.2 (Enhanced participation of researchers from the Jagiellonian University in international research cooperation); 2.3 (Building sustainable and mutually beneficial research partnerships). They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be realized in particular within the POBs: qLife, FutureSoc, Heritage.

8	Jagiellonian Fellowship Program	1	12	5,500,000.00	The action will be implemented in the same form as in the years 2020-2025; however, modifications resulting from the mid-term evaluation of the plan (months 37-43), and the experiences gathered during the realization of the project, will be adopted. The costs of the action include: salaries, travels, accommodation. The costs have been estimated according to the principles of frugality and cost-effectiveness. They are directly connected to the realization of the objective: 2.1 (Enhancing the role of young foreign researchers and experts in the activity of the University); 2.2 (Enhanced participation of researchers from the Jagiellonian University in international research cooperation); 2.3 (Building sustainable and mutually beneficial research partnerships); 3.2 (Expanding the internationality of educational programmes); and 6.1 (Building the university brand and its international position). They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be realized within the POBs: Anthropocene, qLife, DigiWorld, SciMat, BioS, FutureSoc, Heritage.
9	Jagiellonian Chairs Program	1	12	800,000.00	The action will be implemented in the same form as in the years 2020-2025; however, modifications resulting from the mid-term evaluation of the plan (months 37-43), and the experiences gathered during the realization of the project, will be adopted. The costs of the action include: salaries, travels, accommodation. The costs have been estimated according to the principles of frugality and cost-effectiveness. They are directly connected to the realization of the objective: 2.1 (Enhancing the role of young foreign researchers and experts in the activity of the University); 2.3 (Building sustainable and mutually beneficial research partnerships); and 6.1 (Building the university brand and its international position). They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be realized within the POBs: DigiWorld, FutureSoc.

10	Conferences & Seminars	1	12	2,000,000.00	The action will be implemented in the same form as in the years 2020-2025; however, modifications resulting from the mid-term evaluation of the plan (months 37-43), and the experiences gathered during the realization of the project, will be adopted. The costs of the action include: travels, accommodation, organizational costs. The costs have been estimated according to the principles of frugality and cost-effectiveness. They are directly connected to the realization of the objective: 2.1 (Enhancing the role of young foreign researchers and experts in the activity of the University); 2.2 (Enhanced participation of researchers from the Jagiellonian University in international research cooperation); and 2.3 (Building sustainable and mutually beneficial research partnerships). They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be realized within the POBs: Anthropocene, qLife, DigiWorld, SciMat, BioS, FutureSoc, Heritage.
11	Outgoing Fund	1	12	10,000,000.00	The action will be implemented in the same form as in the years 2020-2025; however, modifications resulting from the mid-term evaluation of the plan (months 37-43), and the experiences gathered during the realization of the project, will be adopted. The costs of the action include: travels, accommodation, salaries, scholarships. The costs have been estimated according to the principles of frugality and cost-effectiveness. They are directly connected to the realization of the objective: 2.2 (Enhanced participation of researchers from the Jagiellonian University in international research cooperation); 2.3 (Building sustainable and mutually beneficial research partnerships); and 6.1 (Building the university brand and its international position). They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be realized within the POBs: Anthropocene, qLife, DigiWorld, SciMat, BioS, FutureSoc, Heritage.

12	EduPrograms for the Future	1	12	2,200,000.00	The action will be implemented in the same form as in the years 2020-2025; however, modifications resulting from the mid-term evaluation of the plan (months 37-43), and the experiences gathered during the realization of the project, will be adopted. The costs of the action include: salaries, scholarships, travels, services, licenses, equipment. The costs have been estimated according to the principles of frugality and cost-effectiveness. They are directly connected to the realization of the objective: 3.1 (Expanding the interdisciplinarity of educational programmes); 3.2 (Expanding the internationality of educational programmes); 3.3 (Development and implementation of modern educational formats); 1.5 (Improving the level of innovation, interdisciplinarity of research and the integration of University's mission); and 2.2 (Enhanced participation of researchers from the Jagiellonian University in international research cooperation). They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be realized horizontally within particular POBs: Anthropocene, qLife, DigiWorld, BioS, FutureSoc, Heritage, as well as at the university level.

13	EduTools	1	12	900,000.00	The action will be implemented in the same form as in the years 2020-2025; however, modifications resulting from the mid-term evaluation of the plan (months 37-43), evaluation of the influence of innovative educational tools on the didactic process (61-72), and the experiences gathered during the realization of the project, will be adopted. The costs of the action include: equipment, salaries, services. The costs have been estimated according to the principles of frugality and cost-effectiveness. They are directly connected to the realization of the objective: 3.1 (Expanding the interdisciplinarity of educational programmes); 3.3 (Development and implementation of modern educational formats); and 6.3 (Strengthening the social impact of the University). They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be realized horizontally, at the university level, with focus on the needs of particular POBs.
14	Skills #1	1	12	800,000.00	The action will be implemented in the same form as in the years 2020-2025; however, modifications resulting from the mid-term evaluation of the plan (months 37-43), and the experiences gathered during the realization of the project, will be adopted. The costs of the action include: salaries, services, conferences, courses. The costs have been estimated according to the principles of frugality and cost-effectiveness. They are directly connected to the realization of the objective: 3.4 (Design and implementation of mechanisms for attracting and fostering talented students and doctoral students). They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be realized horizontally, at the university level, with focus on the needs of particular POBs.

15	Talent management	1	12	11,000,000.00	The action will be implemented in the same form as in the years 2020-2025; however, modifications resulting from the mid-term evaluation of the plan (months 37-43), and the experiences gathered during the realization of the project, will be adopted. The costs of the action include: scholarships, salaries, travels, services. The costs have been estimated according to the principles of frugality and cost-effectiveness. They are directly connected to the realization of the objective: 3.4 (Design and implementation of mechanisms for attracting and fostering talented students and doctoral students). They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be realized horizontally within particular POBs: Anthropocene, qLife, DigiWorld, SciMat, BioS, FutureSoc, Heritage, as well as at the university level.
16	Skills #2	1	12	1,100,000.00	The action will be implemented in the same form as in the years 2020-2025; however, modifications resulting from the mid-term evaluation of the plan (months 37-43), and the experiences gathered during the realization of the project, will be adopted. The costs of the action include: salaries, services, conferences, courses. The costs have been estimated according to the principles of frugality and cost-effectiveness. They are directly connected to the realization of the objective: 4.1 (Improving the level of research and transversal competences of researchers). They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be realized horizontally, at the university level, with focus on the needs of particular POBs.

17	Individual Development Program	1	12	3,200,000.00	The action will be implemented in the same form as in the years 2020-2025; however, modifications resulting from the mid-term evaluation of the plan (months 37-43), and the experiences gathered during the realization of the project, will be adopted. The costs of the action include: scholarships, salaries, travels, services. The costs have been estimated according to the principles of frugality and cost-effectiveness. They are directly connected to the realization of the objective: 4.1 (Improving the level of research and transversal competences of researchers). They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be realized horizontally, at the university level, with focus on the needs of particular POBs.
18	Young Labs Program	1	12	7,200,000.00	The action will be implemented in the same form as in the years 2020-2025; however, modifications resulting from the mid-term evaluation of the plan (months 37-43), and the experiences gathered during the realization of the project, will be adopted. The costs of the action include: equipment, travels, publications, materials, licenses, salaries. The costs have been estimated according to the principles of frugality and cost-effectiveness. They are directly connected to the realization of the objective: 4.2 (Developing the mechanisms for creating new scientific leaders); 1.1 (The growth of human capital and its greater use); 1.3 (Improving the efficiency of international fund-raising for research funding); and 6.1 (Building the university brand and its international position). They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be realized within the POBs: Anthropocene, FutureSoc.

19	R2B-Research to Business	1	12	3,100,000.00	The action will be implemented in the same form as in the years 2020-2025; however, modifications resulting from the mid-term evaluation of the plan (months 37-43), and the experiences gathered during the realization of the project, will be adopted. The costs of the action include: salaries, services, patents, materials. The costs have been estimated according to the principles of frugality and cost-effectiveness. They are directly connected to the realization of the objective: 1.2 (Expansion of the research ecosystem); 4.3 (Design of a system enabling acquisition and fostering of competences related to cooperation with the social and economic environment); 6.2 (Evolution of strategic partnerships with institutions from the social and economic environments); and 6.3 (Strengthening the social impact of the University). They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be realized horizontally within particular POBs: Anthropocene, qLife, DigiWorld, SciMat, BioS, FutureSoc, as well as at the university level.
20	R2S-Research to Society	1	12	2,000,000.00	The action will be implemented in the same form as in the years 2020-2025; however, modifications resulting from the mid-term evaluation of the plan (months 37-43), and the experiences gathered during the realization of the project, will be adopted. The costs of the action include: salaries, services. The costs have been estimated according to the principles of frugality and cost-effectiveness. They are directly connected to the realization of the objective: 4.3 (Design of a system enabling acquisition and fostering of competences related to cooperation with the social and economic environment); 6.2 (Evolution of strategic partnerships with institutions from the social and economic environments); and 6.3 (Strengthening the social impact of the University). They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be realized horizontally, at the university level, with focus on the needs of particular POBs.

21	Gates - Space for science	1	12	3,600,000.00	The action will be implemented in the same form as in the years 2020-2025; however, modifications resulting from the mid-term evaluation of the plan (months 37-43), and the experiences gathered during the realization of the project, will be adopted. The costs of the action include: salaries, services, materials, equipment, investments. The costs have been estimated according to the principles of frugality and cost-effectiveness. They are directly connected to the realization of the objective: 1.5 (Improving the level of innovation, interdisciplinarity of research and the integration of University's mission); 3.4 (Design and implementation of mechanisms for attracting and fostering talented students and doctoral students); 3.3 (Development and implementation of modern educational formats); 6.2 (Evolution of strategic partnerships with institutions from the social and economic environments); and 6.3 (Strengthening the social impact of the University). They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be realized horizontally, at the university level, with focus on the needs of particular POBs.

22	Labs	1	12	1,500,000.00	The action will be implemented in the same form as in the years 2020-2025; however, modifications resulting from the mid-term evaluation of the plan (months 37-43), and the experiences gathered during the realization of the project, will be adopted. The costs of the action include: equipment, investments, services, materials, salaries. The costs have been estimated according to the principles of frugality and cost-effectiveness. They are directly connected to the realization of the objective: 1.2 (Expansion of the research ecosystem); 1.5 (Improving the level of innovation, interdisciplinarity of research and the integration of University's mission); 3.3 (Development and implementation of modern educational formats); 6.2 (Evolution of strategic partnerships with institutions from the social and economic environments); and 6.3 (Strengthening the social impact of the University). They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be realized horizontally, at the university level, with focus on the needs of particular POBs.
23	Research Administration	1	12	1,800,000.00	The action will be implemented in the same form as in the years 2020-2025; however, modifications resulting from the mid-term evaluation of the plan (months 37-43), and the experiences gathered during the realization of the project, as well as the analysis of the current needs, will be adopted. The costs of the action include: equipment, licenses, salaries, travels, services. The costs have been estimated according to the principles of frugality and cost-effectiveness. They are directly connected to the realization of the objective: 1.1 (The growth of human capital and its greater use); 1.2 (Expansion of the research ecosystem); 1.3 (Improving the efficiency of international fund-raising for research funding); 5.2 (Introduction of modern university management concepts); and 5.3 (Design and implementation of strategic reflection mechanisms to prepare the University for the challenges of the future).They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be realized at the university level.

24	Skills #3	1	12	300,000.00	The action will be implemented in the same form as in the years 2020-2025; however, modifications resulting from the mid-term evaluation of the plan (months 37-43), and the experiences gathered during the realization of the project, will be adopted. The costs of the action include: salaries, services. The costs have been estimated according to the principles of frugality and cost-effectiveness. They are directly connected to the realization of the objective: 5.1 (Expanding internationalisation of the university's management process); 5.2 (Introduction of modern university management concepts); and 5.3 (Design and implementation of strategic reflection mechanisms to prepare the University for the challenges of the future).They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be realized horizontally, at the university level, with focus on the needs of particular POBs.
25	Sustainable University	1	12	700,000.00	The action will be implemented in the same form as in the years 2020-2025; however, modifications resulting from the mid-term evaluation of the plan (months 37-43), and the experiences gathered during the realization of the project, will be adopted. The costs of the action include: investments, equipment, services, salaries. The costs have been estimated according to the principles of frugality and cost-effectiveness. They are directly connected to the realization of the objective: 5.3 (Design and implementation of strategic reflection mechanisms to prepare the University for the challenges of the future); 1.2 (Expansion of the research ecosystem); 5.2 (Introduction of modern university management concepts); and 6.3 (Strengthening the social impact of the University).They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be realized at the university level.

26	The Future Universty Lab	1	12	740,000.00	The action will be implemented in the same form as in the years 2020-2025; however, modifications resulting from the mid-term evaluation of the plan (months 37-43), and the experiences gathered during the realization of the project, will be adopted. The costs of the action include: salaries, services. The costs have been estimated according to the principles of frugality and cost-effectiveness. They are directly connected to the realization of the objective: 5.3 (Design and implementation of strategic reflection mechanisms to prepare the University for the challenges of the future); 5.1 (Expanding internationalisation of the university's management process); 5.2 (Introduction of modern university management concepts); 6.1 (Building the university brand and its international position); and 6.3 (Strengthening the social impact of the University).They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be realized at the university level.
27	Management	1	12	1,500,000.00	The action will be implemented in the same form as in the years 2020-2025; however, modifications resulting from the mid-term evaluation of the plan (months 37-43), and the experiences gathered during the realization of the project, will be adopted. The costs of the action include: salaries, travels, services, licenses. The costs have been estimated according to the principles of frugality and cost-effectiveness. They are directly connected to the realization of the objective: 5.1 (Expanding internationalisation of the university's management process); and 5.2 (Introduction of modern university management concepts). They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be realized horizontally, at the university level, with focus on the needs of particular POBs.

28	Visibility Strategy	1	12	500,000.00	The action will be implemented in the same form as in the years 2020-2025; however, modifications resulting from the mid-term evaluation of the plan (months 37-43), and the experiences gathered during the realization of the project, as well as current needs, will be adopted. The costs of the action include: salaries, services, travels, equipment, licenses. The costs have been estimated according to the principles of frugality and cost-effectiveness. They are directly connected to the realization of the objective: 6.1 (Building the university brand and its international position); 6.2 (Evolution of strategic partnerships with institutions from the social and economic environments); and 6.3 (Strengthening the social impact of the University). They will be qualified in accordance with the binding law as well as internal JU regulations. The action will be realized at the university level.

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THE METHODOLOGY OF MONITORING PROGRESS IN THE IMPLEMENTATION OF THE PLAN

Introduction

The strategy outlined in this application aims to improve the quality of scientific activity and the level of education as well as extend the international significance and recognition of the Jagiellonian University. It is a long-term plan to establish the JU as a research university. The specific objectives and related actions defined in the strategy are shaped around the concept of a sustainable university based on the Principle of four Is – interdisciplinarity, internationalization, integration and innovation. The SWOT analysis revealed seven priority research areas (POBs) connected with the key scientific areas of science worldwide and fostering social and civilizational development.
The implementation of the strategy will proceed through the fulfillment of the actions described in this application, for which the schedule and the milestones have been determined. The achievement of fundamental and specific objectives is dependent on the development and implementation of a system for monitoring the progress of the execution of the plan. This system will allows identification of the outcomes described in the action plan, their evaluation, observation of development trends, as well as introduction of preventive measures in cases of low action efficiency or when there is a risk that an objective is not achieved.
The system of progress monitoring will be based on far-ranging and systematically collected data and evidence reflecting the status of the implementation of objectives and actions. The methodology presented here allows monitoring of the progress of the implementation of the plan. The role of the monitoring process and its scope, responsible entities for monitoring and related tasks, data sources and monitoring tools will be defined.

The role of monitoring of the progress of the implementation of the plan

The essential function of the process of monitoring of the implementation of the plan is regular and targeted collection, processing and analysis of data, as well as reporting and transfer of information on the implementation status and the outcomes of actions defined in the plan. Furthermore, the influence of these actions on the achievement of mandatory, optional and university-determined indicators will be observed both on the level of the entire university and within the POBs (priority research areas).
The monitoring process will also fulfill additional functions, also essential for the successful execution of the plan and for the achievement of the specific and strategic objectives. Among these functions are:

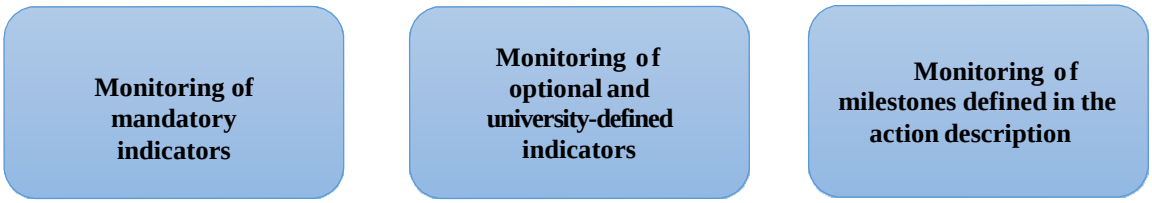
- Identification of delays in the implementation of the plan, including recommendation of actions that could prevent such delays,

- Early detection of risks and intervention areas in the implementation of the plan and providing support for the decision makers to adequately respond to such challenges,
- Providing the key stakeholders with updated information on the progress in the implementation of the plan,
- Providing support for management decisions at every decision-making level at the university,
- Identification of emerging opportunities for improving the quality of scientific activity and the quality of education and for increasing the international significance and recognition of the University which could not be identified at the stage of creating the plan.

The scope of monitoring

The scope of monitoring is determined by the scope of the specific objectives and of their respective actions, both on the level of the entire university and within the POBs (priority research areas). The monitoring process focuses on the following issues: the impact of the university's scientific activity on the development of science worldwide, international research cooperation with highly-respected research institutions, interdisciplinarity and internationalization of educational programs, professional development of university employees, and university management and its international recognition.

Fig. 1 The scope of monitoring



Source: own elaboration

Entities responsible for the monitoring

The fundamental entity responsible for the monitoring will be the Steering Committee, headed by the person responsible for the implementation of the plan (point F of the application). The Committee will consist of representatives of the POBs (priority research areas) and representatives of the University's administration.

Within each of the POBs (priority research areas), the entities responsible for the monitoring will be the councils of those areas, consisting of a POB (priority research area) coordinator, representatives of the University's units that are part of the POB, representatives of doctoral schools, and administration members.

The Office for Institutional Analysis and Reporting (BAIiR) of the JU, under the authority of the Rector of the JU will be responsible for data collection, analysis of indicators, and reporting. BAIiR reports will provide support in the decision-making processes for the councils of the POBs (priority research areas) and the Steering Committee.

Support for management decisions

Based on the data collected and processed as a part of the monitoring activities, management dashboards will be assembled. Management dashboards are visualization/decision-making tools presenting the status of the most important indicators related to the implementation of the plan in a coherent and concise graphic form. Professionally prepared management dashboards will allow the decision making members of the Steering Committee and of the councils of the POBs (priority research areas) to rapidly respond to any changes within the University and in its environment. To ensure effective implementation of the dashboard system, dedicated workshops for the University's managerial staff will be organized.

The data sources

The following resources will be used to provide data for monitoring of the progress in the implementation of the plan:

- Scopus database together with the SciVal tool,
- Web of Science,
- University Study-Oriented System (USOS) – integrated information system for management of information on undergraduate and doctoral students, and study programs,
- The Integrated System of Information on Science and Higher Education POL-on – integrated nationwide information system for management of information on science, scientific employees, undergraduate and doctoral students, fields of study. This system consists of nearly 40 modules allowing access to various types of data
- The SAP system – integrated information system for management of human resources and finances of the University
- Repository of the JU – information system which collects metadata on the publications of the JU employees, undergraduate and doctoral students full texts of some of these publications.

Additional data will be collected in a systematic and targeted manner from units fulfilling specific organizational functions (such as international cooperation or promotional activities). The data collected from all of these sources will be analyzed qualitatively and quantitatively.

Tools and instruments for monitoring of the progress in the implementation of the plan

Performance indicators

Specific performance indicators are relevant to the entire University and the POBs (priority research areas). These indicators can be quantitative or qualitative in nature, refer to specific objectives and are informative of the products as well as the outcomes of the action plan.

The application form lists seven mandatory indicators. Additionally, seven further indicators have been selected from the list of optional indicators:

1. Normalized Citation Impact for Internationally Co-authored Articles (P) – according to the **Scopus** database**,**
2. Centres of Excellence (U)
3. % of International Staff (U),
4. Doctoral Students' Articles in Q1 Journals (U) – according to the **Scopus** database**,**
5. % of International Students (U)
6. Number of inventions protected by foreign patents (U)
7. Foreign accreditations (U).

The University has also determined eight individual performance indicators:

1. Implementation of IT system for research management (Scientific Research Zone of the Jagiellonian University),
2. Number of consortia formed with strategic stakeholders,
3. Number of conferences on equality and pro-equity measures implemented under educational and scientific activities,
4. Number of created centers improving competences of students, doctoral students and employees of the University,
5. Number of running MOOC (Massive Open Online Course),
6. Number of Open Science publications,
7. Number of photovoltaic cells installed,
8. Number of students supported by the Disability Support Service.

Scorecards

Scorecards will be the key tool in the process of monitoring of the progress in the implementation of the plan. They will have a form of tables and will be used for the operational monitoring of the implementation of the plan, for reporting purposes and for assembly of the management dashboards for decision makers.

Table 1 Standard setup of a scorecard for the monitoring of indicators

Main objective	Specific objective	Indicator*	Year		Sources of data	Responsible entity	Percentage change [base year/monitored year]	Trend	Conclusions/Interpretation/Recommendations
			base	monitored					

*The status of the indicator should be marked: 1 – mandatory, 2 – optional, 3 – university-determined

Table 2 Standard setup of a scorecard for the monitoring of actions

Main objective	Specific objective	Action	Milestone	Evaluation date	Responsible for evaluation (who?)	Addressees of evaluation (for whom?)	Sources of data	Evaluation result planned/achieved	Conclusions/Interpretation/Recommendations

Monitoring reports

The scheduled monitoring reports will be annual self-evaluation reports, for the internal monitoring of the implementation of the plan. They will consist of:

1) reports on the completion status of actions undertaken within the specific POBs (priority research areas) as well as at the entire university,
2) reports on the progress in achieving indicators of products and outcomes within the specific POBs (priority research areas) as well as at the entire university,
3) conclusions on the status of the implementations of the plan.

At the request of the Steering Committee, *ad hoc* reports can be assembled when necessary.

Additionally, two monitoring reports will be compiled, for the external evaluation purposes, at a time and according to guidelines determined in the statement of the Minister of Science and Higher Education from 26 March 2019 and in the regulations of the first competition organized as part of the „Initiative for ~~of~~ Excellence – a Research University" program.

The 1st monitoring report will be a self-evaluation report and will provide the basis for the mid-term evaluation in 2023. This report, in accordance with the requirements defined in the statement, will consist of:

1) a report on the status of completion of actions, for which the start date was planned between the years 2020-2022, including ~~-~~quality-focused organizational changes,
2) an assessment of the extent to which the undertaken actions have contributed to the fulfillment of the objectives defined in the plan,
3) conclusions on the implementation of the plan in the remaining period.

The 2nd monitoring report will be a self-evaluation report and will provide the basis for the final evaluation in 2026. This report, in accordance with the requirements defined in the statement, will consist of:

1) a report on the status of completion of actions, for which the start date was planned between the years 2020-2025,
2) an assessment of the extent to which the undertaken actions have contributed to the achievement of the objectives defined in the plan, together with the current values of the indicators listed in the application, in the section on the methodology of monitoring of the progress in the implementation of the plan.

Compatibility with the Development Strategy of the Jagiellonian University

The system of monitoring of the progress in the implementation of the plan will be integrated with the already successfully implemented system of monitoring of the completion of the objectives of the Development Strategy of the Jagiellonian University. This system is already based on a system of strategic scorecards and has been created after consultations with the representatives of the entire JU academic community. Within each of the strategic objectives of the JU, measurable indicators are assigned providing information on the completion status of the objectives, and, consequently, fulfillment of the vision for and mission of the Jagiellonian University.

Risks associated with the monitoring of the progress in the implementation of the plan

There are a number of risks associated with the monitoring of the progress in the implementation of the plan. Risk here is defined as a probability of the occurrence of circumstances potentially harmful for the undertaken activity. Below are presented the risks most likely to occur and bearing the most profound consequences on the monitoring process. Remedial activities are also proposed:

- **Inconsistency in the types of data between among the information systems of the JU.** Given

the rapid development of independently operating systems of data management and reporting at the JU, it is likely that some of the data relevant for the same areas will have a different format. In order to address this risk, it is necessary to recognize and characterize the challenge in detail, and design compatibility table for the data formats collected within the particular systems.

- **Lack of coordination and redundancies between units responsible for generating data.** Within particular areas of data gathering, there is a risk that several systems at the university collect similar data at the same time, creating unnecessary redundancies. In such ~~a~~ cases, a remedial action will be to assemble a list of all the data being collected for all the indicators and to eliminate the requirement to collect overlapping data.
- **Low data reliability.** The quality of data on the teaching and publication activity depends on the information provided by academic teachers. There is a risk that some of these data will be incomplete. The remedial action ~~here~~ will be implementation of control of the data submitted by university employees as part of their teaching and publication activity.
- **Lack of proper use of data by decision makers.** While monitoring the completion of actions undertaken for the implementation of the plan is the responsibility of the monitoring entity, making use of the same data by decision makers depends on multiple factors, such as the systems already in use and the institutional/departamental decision-making habits. In this case, the remedial action will consist of organizing workshops and consulting sessions for decision makers on how to make use of the management dashboards.

POB	Heritage – cultural heritage (identity of individuals and entire societies, language, civilizational challenges of modern world).

1. Huber, S., 2014. Einführung in die Geschichte der polnischen Sozialphilosophie: ausgewählte Probleme aus sechs Jahrhunderten, Wiesbaden: Harrassowitz Verlag.
2. Kamieński, Ł., 2016. Shooting up: a short history of drugs and war, New York: Oxford University Press.
3. Choiński, M., 2016. The Rhetoric of the revival: the langauge of the Great Awakening preachers, Göttingen: Vandenhoeck & Ruprecht Verlag.
4. Ruda, M., 2017. On the syntax of missing objects: a study with special reference to English, Polish, and Hungarian, Amsterdam||Philadelphia: John Benjamins Publishing Company.
5. Szwedo, P., 2017. Cross-border water trade under international law, Warszawa: Uniwersytet Kardynała Stefana Wyszyńskiego w Warszawie.
6. Załuski, W., 2018. Law and evil: the evolutionary perspective, Cheltenham||Northampton, MA: Edward Elgar Publishing.

POB	FutureSoc – interdisciplinary research on social changes caused by the development of new technologies and the cognitive sciences (politics, security, law, management, mind, communication, society).

1. Huber, S., 2014. Einführung in die Geschichte der polnischen Sozialphilosophie: ausgewählte Probleme aus sechs Jahrhunderten, Wiesbaden: Harrassowitz Verlag.
2. Kamieński, Ł., 2016. Shooting up: a short history of drugs and war, New York: Oxford University Press.
3. Szwedo, P., 2017. Cross-border water trade under international law, Warszawa: Uniwersytet Kardynała Stefana Wyszyńskiego w Warszawie.
4. Załuski, W., 2018. Law and evil: the evolutionary perspective, Cheltenham||Northampton, MA: Edward Elgar Publishing.

POB	DigiWorld – digital world and cyber space (innovative technologies of artificial intelligence and machine learning in interdisciplinary applications).

1. Huber, S., 2014. Einführung in die Geschichte der polnischen Sozialphilosophie: ausgewählte Probleme aus sechs Jahrhunderten, Wiesbaden: Harrassowitz Verlag.
2. Choiński, M., 2016. The Rhetoric of the revival: the langauge of the Great Awakening preachers, Göttingen: Vandenhoeck & Ruprecht Verlag.
3. Bengtsson, I; Życzkowski, K., 2017. Geometry of quantum states: An introduction to quantum entanglement, Cambridge Univ. Press

POB	Anthropocene – the causes, paths and consequences of global environmental changes (human impact on environmental systems, climate, globalization, migration, circular economy, new technologies).

1. Huber, S., 2014. Einführung in die Geschichte der polnischen Sozialphilosophie: ausgewählte Probleme aus sechs Jahrhunderten, Wiesbaden: Harrassowitz Verlag.
2. Szwedo, P., 2017. Cross-border water trade under international law, Warszawa: Uniwersytet Kardynała Stefana Wyszyńskiego w Warszawie.
3. Załuski, W., 2018. Law and evil: the evolutionary perspective, Cheltenham||Northampton, MA: Edward Elgar Publishing.

Title of the invention	List of inventors	Patent number	Granting office	Patent granted	Link to webpage
Pipecolic linker and its use for chemistry on solid support	Paweł Zajdel, Maciej Pawłowski; Jean Martinez, Gilles Subra	JP 5670332	Japan Patent Office	26.12.2014	https://patents.google.com/patent/JP5670332B2/ja
The method of reducing excessive growth of filamentous bacteria in activated sludge, the process of reducing the bulking of activated sludge and use of naturally occurring organisms in the activated sludge to prevent its bulking	Edyta Fiałkowska, Agnieszka Pajdak-Stós	EP 2212255	European Patent Office	07.08.2014	https://register.epo.org/application?number=EP08848179&lng=en&tab=main
Method and apparatus for monitoring storm activity on the earth's surface in real time	Andrzej Kułak, Jerzy Kubisz, Stanisław Micek, Adam Michalec, Zenon Nieckarz, Michał Ostrowski, Stanisław Zięba	KR 1357434	Korean Patent Office	23.01.2014	https://patents.google.com/patent/KR101357434B1/en?oq=KR101357434
Derivatives of aminoalkanols, method of obtaining of aminoalkanols and their use	Katarzyna Kieć-Kononowicz, Henryk Marona, Anna Maria Waszkielewicz	US 8,633,251	United States Patent and Trademark Office	21.01.2014	http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=%2Fnetahtml%2FPTO%2Fsrchnum.htm&r=1&f=G&l=50&s1=8,633,251.PN.&OS=PN/8,633,251&RS=PN/8,633,251
Method of making a conductive carbon layer on the powder support	Marcin Molenda, Roman Dziembaj, Andrzej Kochanowski, Edgar Bortel, Marek Drozdek, Zofia Piwowarska	JP 5476383	Japan Patent Office	14.02.2014	https://patents.google.com/patent/JP5476383/ja
Hybrid photocatalysts, the method of their synthesis and use	Maria Nowakowska, Krzysztof Szczubiałka, Dominik Drozd	EP 2401070	European Patent Office	12.04.2016	https://worldwide.espacenet.com/publicationDetails/biblio?CC=EP&NR=2401070A2&KC=A2&FT=D&ND=3&date=20120104&DB=&locale=en_EP#
Strain of Salmonella enterica s. typhimurium, its use and a method to obtain a therapeutic vaccine vector	Michał Bereta, Paulina Chorobik	US 8,916,372	United States Patent and Trademark Office	23.12.2014	http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=%2Fnetahtml%2FPTO%2Fsrchnum.htm&r=1&f=G&l=50&s1=8,916,372.PN.&OS=PN/8,916,372&RS=PN/8,916,372
Nanocrystalline photocatalytic colloid, a method of producing it and its use	Grażyna Stochel, Piotr Heczko, Wojciech Macyk, Magdalena Strus, Przemysław Łabuz, Justyna Derdzińska	US 9,040,489	United States Patent and Trademark Office	26.05.2015	http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=%2Fnetahtml%2FPTO%2Fsrchnum.htm&r=1&f=G&l=50&s1=9,040,489.PN.&OS=PN/9,040,489&RS=PN/9,040,489
Matrix device and method for determining the location and time of reaction of the gamma quanta and the use of the device to determine the location and time of reaction of the gamma quanta in positron emission tomography	Paweł Moskal	EP 2454611	European Patent Office	04.07.2014	https://worldwide.espacenet.com/publicationDetails/biblio?II=1&ND=3&adjacent=true&locale=en_EP&FT=D&date=20120523&CC=EP&NR=2454611A2&KC=A2#
Use of piracetam for treating diabetic nephropathy	Rafał Olszanecki, Beata Bujak-Giżycka, Ryszard Korbut, Mariusz Gajda	US 8,686,037	United States Patent and Trademark Office	01.04.2014	http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=%2Fnetahtml%2FPTO%2Fsrchnum.htm&r=1&f=G&l=50&s1=8,686,037.PN.&OS=PN/8,686,037&RS=PN/8,686,037
Use of quaternary pyridinium salts for inhibiting cancer metastases	Stefan Chłopicki, Jerzy Gębicki, Andrzej Marcinek	EP 2211858	European Patent Office	26.02.2015	https://worldwide.espacenet.com/publicationDetails/biblio?II=0&ND=3&adjacent=true&locale=en_EP&FT=D&date=20100804&CC=EP&NR=2211858A2&KC=A2#
Composition in form of solution for contact lenses and medical materials	Grażyna Stochel, Piotr Heczko, Wojciech Macyk, Magdalena Strus, Przemysław Łabuz	RU 2581827	Russian Patent Office	10.11.2015	https://worldwide.espacenet.com/publicationDetails/biblio?CC=RU&NR=2581827&KC=&locale=en_EP&FT=E#
Strip device and method for determining the location and time of reaction of the gamma quanta and the use of the device to determine the location and time of reaction of the gamma quanta in positron emission tomography	Paweł Moskal	EP 2454612	European Patent Office	06.05.2014	https://worldwide.espacenet.com/publicationDetails/biblio?II=1&ND=3&adjacent=true&locale=en_EP&FT=D&date=20120523&CC=EP&NR=2454612A2&KC=A2#
System for measuring electrical charge	Zbigniew Sosin, Maciej Sosin, Marek Adamczyk	US 9,103,860	United States Patent and Trademark Office	11.08.2015	http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=%2Fnetahtml%2FPTO%2Fsrchnum.htm&r=1&f=G&l=50&s1=9,103,860.PN.&OS=PN/9,103,860&RS=PN/9,103,860
Multilayered protective coating for protecting metallic surfaces of implant materials and use thereof	Andrzej Kotarba, Monika Cieślik, Klas Engvall, Annika Lindström	EP 2590692	European Patent Office	11.10.2016	https://worldwide.espacenet.com/publicationDetails/biblio?II=1&ND=3&adjacent=true&locale=en_EP&FT=D&date=20130515&CC=EP&NR=2590692A1&KC=A1#
Use of the modified polysaccharides for heparin neutralization	Maria Nowakowska, Krzysztof Szczubiałka, Kamil Kamiński	US 9,504,707	United States Patent and Trademark Office	29.11.2016	http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=%2Fnetahtml%2FPTO%2Fsrchnum.htm&r=1&f=G&l=50&s1=9,504,707.PN.&OS=PN/9,504,707&RS=PN/9,504,707
The use of chitosan polymer in the treatment and prevention of infections caused by coronaviruses	Maria Nowakowska, Krzysztof Szczubiałka, Kamil Kamiński; Krzysztof Pyrć, Aleksandra Milewska	EP 2849763	European Patent Office	31.05.2017	https://worldwide.espacenet.com/publicationDetails/biblio?II=0&ND=3&adjacent=true&locale=en_EP&FT=D&date=20180115&CC=DK&NR=2849763T3&KC=T3#

Direct decomposition of nitrogen oxides and a process for producing a catalyst for the catalyst	Mieczysława Najbar, Jarosław Dutkiewicz, Iga Nazarczuk, Mateusz Kozicki, Stanisław Janiga, Paweł Kornelak, Aleksandra Wesełucha, Józef Camra, Wiesław Łasocha, Alicja Łasocha	CN103140275	State Intellectual Property Office of China (SIPO)	23.09.2015	https://patents.google.com/patent/CN103140275B/en?oq=CN103140275
Simultaneous removal and no carbon particles and inorganic dust from the flue gases and the catalytic reactor for removing carbon particles and inorganic and no dust from the flue gases	Mieczysława Najbar, Ryszard Lech, Marek Danielewski, Janusz Budzioch	CN104185502	State Intellectual Property Office of China (SIPO)	05.09.2016	https://patents.google.com/patent/CN104185502B/en?oq=CN104185502B
Method of synthesis of CMK-3-type carbon replica	Piotr Kuśtrowski, Rafał Janus, Paula Janus	US 9,302,252	United States Patent and Trademark Office	29.12.2015	http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=%2Fnetahtml%2FPTO%2Fsrchnum.htm&r=1&f=G&l=50&s1=9,302,252.PN.&OS=PN/9,302,252&RS=PN/9,302,252
Method for obtaining oxide catalysts on the base of exfoliated layered aluminosilicates	Piotr Kuśtrowski, Piotr Natkański, Anna Białas, Paula Janus	US 9,636,661	United States Patent and Trademark Office	02.05.2017	http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=%2Fnetahtml%2FPTO%2Fsrchnum.htm&r=1&f=G&l=50&s1=9,636,661.PN.&OS=PN/9,636,661&RS=PN/9,636,661
Method for efficient isolation of microbial dna from blood	Tomasz Gosiewski, Monika Brzychczy-Włoch	EP 2888364	European Patent Office	13.06.2017	https://worldwide.espacenet.com/publicationDetails/biblio?II=1&ND=3&adjacent=true&locale=en_EP&FT=D&date=20150701&CC=EP&NR=2888364A1&KC=A1#
Photocatalytic TiO2 coatings on the polymer surfaces activated with visible light, method of their preparation and use thereof	Wojciech Macyk, Sadowski Rafał, Przemysław Łabuz, Marta Buchalska	EP 2892349	European Patent Office	03.11.2016	https://worldwide.espacenet.com/publicationDetails/biblio?II=1&ND=3&adjacent=true&locale=en_EP&FT=D&date=20150715&CC=EP&NR=2892349A1&KC=A1#
Pyrroloquinoline derivatives as 5-HT6 antagonists, preparation method and use thereof	Paweł Zajdel, Katarzyna Grychowska, Maciej Pawłowski, Anna Partyka, Anna Wesołowska, Grzegorz Satała, Andrzej J. Bojarski, Tomasz Kos, Piotr Popik, Frederic Lamaty, Evelina Colacino, Xavier Bantreil, Jean Martinez, , Gilles Subra	US 9,676,772	United States Patent and Trademark Office	13.06.2017	http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=%2Fnetahtml%2FPTO%2Fsrchnum.htm&r=1&f=G&l=50&s1=9,676,772.PN.&OS=PN/9,676,772&RS=PN/9,676,772
DNA aptamers binding the histidine tag and their application	Filip Bartnicki, Ewa Kowalska, Katarzyna Pels, Wojciech Strzałka	US 10,023,870	United States Patent and Trademark Office	22.01.2018	http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=%2Fnetahtml%2FPTO%2Fsrchnum.htm&r=1&f=G&l=50&s1=10,023,870.PN.&OS=PN/10,023,870&RS=PN/10,023,870
A method of mass culture of lecane rotifers	Agnieszka Pajdak - Stós, Edyta Fiałkowska, Janusz Fyda, Wioleta Kocerba-Soroka, Mateusz Sobczyk	EP 2993978	European Patent Office	04.05.2017	https://worldwide.espacenet.com/publicationDetails/biblio?II=0&ND=3&adjacent=true&locale=en_EP&FT=D&date=20160316&CC=EP&NR=2993978A1&KC=A1#
Method for simultaneous detection of bacteria and fungi in a biological preparation by pcr, primers as well as bacteria and fungi detection kit	Tomasz Gosiewski, Monika Brzychczy-Włoch, Agata Pietrzyk, Małgorzata Bulanda	EP 2999798	European Patent Office	01.12.2016	https://worldwide.espacenet.com/publicationDetails/biblio?II=1&ND=3&adjacent=true&locale=en_EP&FT=D&date=20170731&CC=PL&NR=2999798T3&KC=T3#
A diagnostic test of streptococcus agalactiae infections	Monika Brzychczy-Włoch, Piotr Heczko, Sabina Górska-Frączek, Ewa Brzozowska, Andrzej Gamian	EP 3014276	European Patent Office	21.12.2017	https://worldwide.espacenet.com/publicationDetails/biblio?II=0&ND=3&adjacent=true&locale=en_EP&FT=D&date=20190131&CC=PL&NR=3014276T3&KC=T3#
System for acquisition of tomographic measurement data	Grzegorz Korcyl, Paweł Moskal, Marcin Kajetanowicz, Marek Pałka	US 10,007,011	United States Patent and Trademark Office	23.04.2018	http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=%2Fnetahtml%2FPTO%2Fsrchnum.htm&r=1&f=G&l=50&s1=10,007,011.PN.&OS=PN/10,007,011&RS=PN/10,007,011
Method and a device for measuring parameters of an analog signal	Marek Pałka, Paweł Moskal	US 9,804,206	United States Patent and Trademark Office	26.09.2017	http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=%2Fnetahtml%2FPTO%2Fsrchnum.htm&r=1&f=G&l=50&s1=9,804,206.PN.&OS=PN/9,804,206&RS=PN/9,804,206
Method for determining parameters of a reaction of a gamma quantum within a scintillator of a PET scanner	Paweł Moskal	US 9,804,279	United States Patent and Trademark Office	25.09.2017	http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=%2Fnetahtml%2FPTO%2Fsrchnum.htm&r=1&f=G&l=50&s1=9,804,279.PN.&OS=PN/9,804,279&RS=PN/9,804,279
Mof-type layered coordination polymers of manganese, method of their preparation, modification and use thereof	Dariusz Matoga	US 9,884,307	United States Patent and Trademark Office	04.12.2017	http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=%2Fnetahtml%2FPTO%2Fsrchnum.htm&r=1&f=G&l=50&s1=9,884,307.PN.&OS=PN/9,884,307&RS=PN/9,884,307
Hybrid TOF-PET/CT tomograph comprising polymer strips made of scintillator material	Paweł Moskal	US 9,804,274	United States Patent and Trademark Office	26.09.2017	http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=%2Fnetahtml%2FPTO%2Fsrchnum.htm&r=1&f=G&l=50&s1=9,804,274.PN.&OS=PN/9,804,274&RS=PN/9,804,274
Method for calibration of TOF-PET detectors using cosmic radiation	Eryk Czerwiński, Paweł Moskal, Michał Silarski	US 9,798,021	United States Patent and Trademark Office	13.09.2017	http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=%2Fnetahtml%2FPTO%2Fsrchnum.htm&r=1&f=G&l=50&s1=9,798,021.PN.&OS=PN/9,798,021&RS=PN/9,798,021

Direct decomposition of nitrogen oxides and a process for producing a catalyst for the catalyst	Mieczysława Najbar, Jarosław Dutkiewicz, Aleksandra Wesełucha-Birczyńska, Józef Camra, Tomasz Wilkosz, Elżbieta Bielańska, Janusz Danko, Jakub Bartyzel	CN 103140275	State Intellectual Property Office of China (SIPO)	11.09.2018	https://patents.google.com/patent/CN103140275B/en?oq=CN103140275
TOF-PET tomograph and a method of imaging using a TOF-PET tomograph, based on a probability of production and lifetime of a positronium	Paweł Moskal, Ines Moskal, Gabriel Moskal	US 9,851,456	United States Patent and Trademark Office	25.10.2017	http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=%2Fnetahtml%2FPTO%2Fsrchnum.htm&r=1&f=G&l=50&s1=9,851,456.PN.&OS=PN/9,851,456&RS=PN/9,851,456
Urządzenie detekcyjne do wyznaczania miejsca reakcji kwantów gamma oraz sposób wyznaczania miejsca reakcji kwantów gamma w emsyjnej tomografii pozytonowej.	Paweł Moskal, Jerzy Smyrski	US 10,042,058	United States Patent and Trademark Office	20.06.2018	http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=%2Fnetahtml%2FPTO%2Fsrchnum.htm&r=1&f=G&l=50&s1=10,042,058.PN.&OS=PN/10,042,058&RS=PN/10,042,058
A visible-light-activated multilayered photocatalyst and the method of its preparation	Wojciech Macyk, Marta Buchalska, Mateusz Trochowski, Przemysław Łabuz	EP 3089818	European Patent Office	19.12.2017	https://worldwide.espacenet.com/publicationDetails/biblio?II=0&ND=3&adjacent=true&locale=en_EP&FT=D&date=20161109&CC=EP&NR=3089818A2&KC=A2#
Method and a system for determining parameters of reactions of gamma quanta within scintillation detectors of PET scanners	Paweł Moskal	US 10,088,581	United States Patent and Trademark Office	12.07.2018	http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=%2Fnetahtml%2FPTO%2Fsrchnum.htm&r=1&f=G&l=50&s1=10,088,581.PN.&OS=PN/10,088,581&RS=PN/10,088,581
A method for producing a multilayer polymeric protective coating for implant materials with the function of the controlled release of drugs	Monika Brzychczy-Włoch, Monika Gołda-Cępa, Andrzej Kotarba, Katarzyna Gębarowska, Janusz Kasperczyk, Monika Musiał-Kulik	DE 112014005909	German Patent and Trade Mark Office	14.03.2017	https://register.dpma.de/DPMAregister/pat/register?AKZ=1120140059099&CURSOR=0
System and method for accumulating and measuring a slowly varying electrical charge	Zbigniew Sosin, Maciej Sosin, Marek Adamczyk, Paweł Lasko	US 9,784,778	United States Patent and Trademark Office	05.06.2017	http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=%2Fnetahtml%2FPTO%2Fsrchnum.htm&r=1&f=G&l=50&s1=9,784,778.PN.&OS=PN/9,784,778&RS=PN/9,784,778
Device and method for non-invasive detection of hazardous materials in the aquatic environment	Michał Silarski, Paweł Moskal	US 10,126,257	United States Patent and Trademark Office	13.11.2018	http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=%2Fnetahtml%2FPTO%2Fsrchnum.htm&r=1&f=G&l=50&s1=10,126,257.PN.&OS=PN/10,126,257&RS=PN/10,126,257
Dna aptamer recognising arginine tag and use thereof	Wojciech Strzałka, Filip Bartnicki, Katarzyna Pels, Ewa Kowalska	EP 3164490	European Patent Office	24.04.2018	https://worldwide.espacenet.com/publicationDetails/biblio?II=1&ND=3&adjacent=true&locale=en_EP&FT=D&date=20170510&CC=EP&NR=3164490A1&KC=A1#
Cobalt porphyrins for the treatment of blood-related disorders	Agata Szade, Krzysztof Szade, Alicja Józkowicz, Józef Dulak	US 10,010,557	United States Patent and Trademark Office	03.07.2018	http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=%2Fnetahtml%2FPTO%2Fsrchnum.htm&r=1&f=G&l=50&s1=10,010,557.PN.&OS=PN/10,010,557&RS=PN/10,010,557
Dna aptamer recognising human pcna protein and use thereof	Wojciech Strzałka, Ewa Kowalska, Filip Bartnicki	EP 3234142	European Patent Office	15.02.2018	https://worldwide.espacenet.com/publicationDetails/biblio?II=0&ND=3&adjacent=true&locale=en_EP&FT=D&date=20171025&CC=EP&NR=3234142A1&KC=A1#
Anionically modified polyallylamine derivative, use of anionically modified polyallylamine derivative as medicine, particularly for propylaxis and treatment of infections of respiratory tract caused by human metapneumovirus (hMPV), human rhinoviruses (HRV), and infection by influenza virus type A (IAV) and pharmaceutical composition comprising the anionically modified polyallylamine derivative	Maria Nowakowska, Krzysztof Szczubiałka, Krzysztof Pyrć, Justyna Ciejka	US 9,925,215	United States Patent and Trademark Office	27.03.2018	http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=%2Fnetahtml%2FPTO%2Fsrchnum.htm&r=1&f=G&l=50&s1=9,925,215.PN.&OS=PN/9,925,215&RS=PN/9,925,215
Modified nanocomposite material, method for its production and its application	Joanna Łojewska, Tomasz Łojewski, Jacob L. Thomas, Roman J. Jędrzejczyk, Dominika Pawcenis,Barbara Gil, Jakub M. Milczarek, Katarzyna Turnau, Andrzej Kołodziej	EP 3140456	European Patent Office	17.01.2018	https://worldwide.espacenet.com/publicationDetails/biblio?II=0&ND=3&adjacent=true&locale=en_EP&FT=D&date=20170315&CC=EP&NR=3140456A1&KC=A1#
Use of a block polymer comprising a block of poly(3-(methacryloylamino)propyltrimethylammonium chloride) (PMAPTAC) for the neutralization of heparin	Krzysztof Szczubiałka, Maria Nowakowska, Kamil Kamiński, Andrzej Mogielnicki, Bartłomiej Kałaska, Dariusz Pawlak, Emilia Sokołowska	US 10,052,347	United States Patent and Trademark Office	22.05.2018	http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=%2Fnetahtml%2FPTO%2Fsrchnum.htm&r=1&f=G&l=50&s1=10,052,347.PN.&OS=PN/10,052,347&RS=PN/10,052,347
Mobile tof-pet insert	Bartosz Głowacz, Marcin Zieliński, Paweł Moskal	EP 3323001	European Patent Office	07.08.2018	https://worldwide.espacenet.com/publicationDetails/biblio?II=0&ND=3&adjacent=true&locale=en_EP&FT=D&date=20180523&CC=EP&NR=3323001A1&KC=A1#
5-(5-(2,6-dioxyphenyl)tetrazole containing polymer, membrane containing the same, electrochemical device including the membrane and method for preparing the same	Artur Michalak, Mateusz Brela, Karol Dyduch	US 9,954,240	United States Patent and Trademark Office	24.04.2018	http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=%2Fnetahtml%2FPTO%2Fsrchnum.htm&r=1&f=G&l=50&s1=9,954,240.PN.&OS=PN/9,954,240&RS=PN/9,954,240

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