Request for Proposal (RFP)

Project Title: Korea-US Collaborative Research Project

1. Background

1.1. Project Background

- Bioscience, including the four national strategic bioscience technologies of Korea*, is a key for future innovation cultivating the growth of Korea and the United States (US).

  *Synthetic biology, infectious disease vaccines and treatments, gene and cell therapy, digital health data analysis and utilization, etc.

- The recent acceleration of innovation through the integration of digital technologies, such as big data and artificial intelligence (AI), has enhanced technological development and provided new industrial opportunities.

- The current Korea-US Collaborative Research Project/Fund aims to promote collaborative research in the advanced bioscience sector between competent research groups from Korea and the US. This will assist in the acquisition of the world's first and best core innovations in the advanced bioscience sector.

1.2. Key Focus of the Plans

- To foster research in the advanced bioscience sector by establishing collaborative research consortia between competent research groups from both Korea and the US.

- The program is divided into two separate types of research:

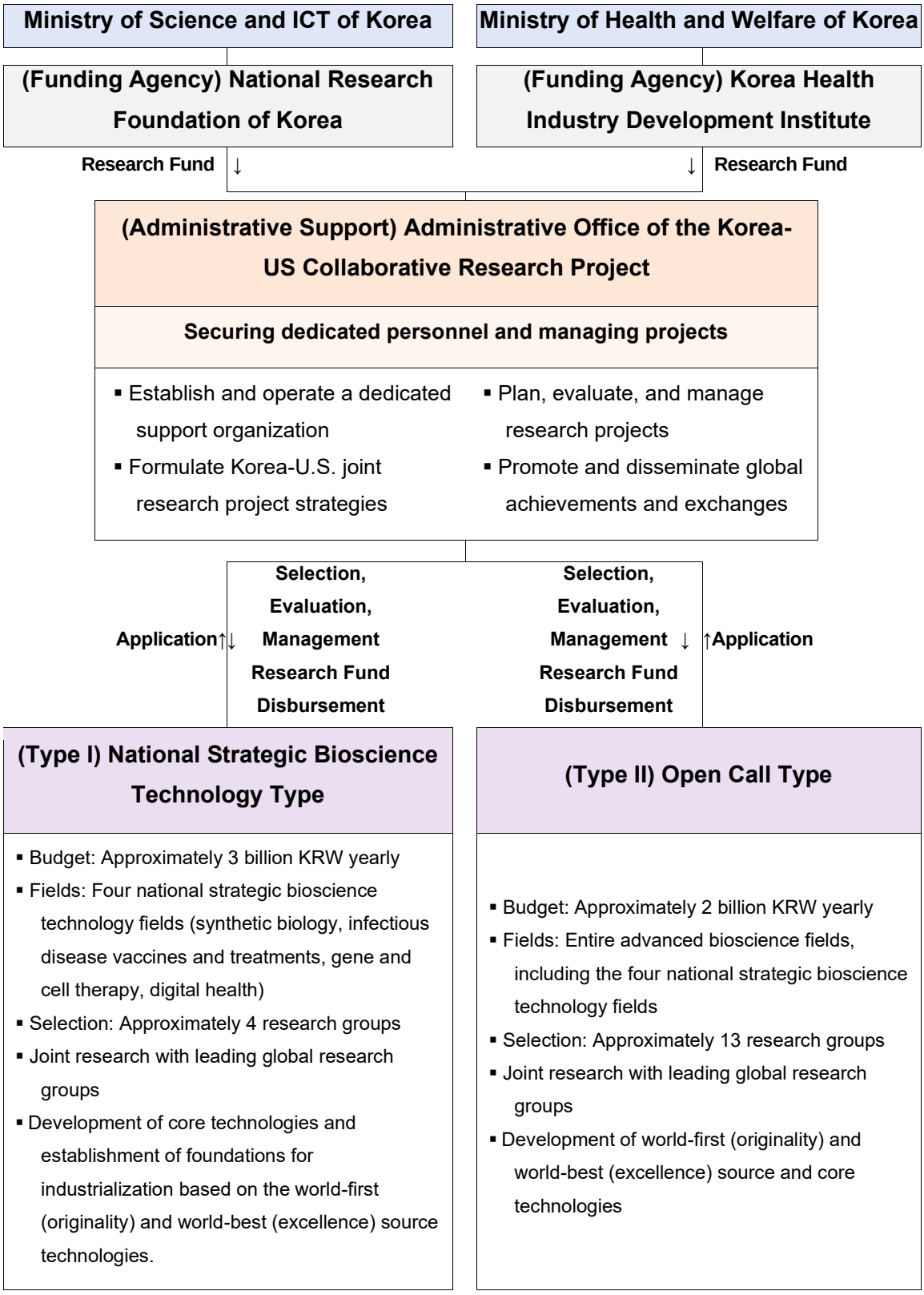
  (i) National Strategic Bioscience Technology Type: Research on the pre-designated disciplines of the four national strategic bioscience technologies of Korea (Synthetic biology, infectious disease vaccines and treatments, gene and cell therapy, digital health data analysis and utilization)

  (ii) Open Call Type: Research conducted in the interest of individual researchers/groups

- There will be no limit in the technology readiness level (TLR) eligible to the current proposal. Only the technology fields eligible will be designated for the research.

- An administrative office of the current Korea-US Collaborative Research Project/Fund will open to select and support research consortia. Investigators are encouraged to consult the administrative office homepage (http://kucrf.org).

< 'Korea-US Collaborative Research Project' System >



2. Research and Development Goals

2.1. Final Goal

To secure the world-first (originality) and world-best (excellence) source and core technologies in the advanced bioscience sector through joint international research

2.2. Goals of the Projects by Phase

- Phase I (‘24~’25): Establishment of a foundation for international joint research in the advanced bioscience sector
  - A. Identify the world-first research topics in advanced bioscience.
  - B. Establishment of a foundation for Korea-US joint research, exchange of technology, and dissemination of results.
- Phase II (‘26~’27): Ensure excellence in international joint research for advanced bioscience
  - A. Secure the world-first and world-best research outcomes in the advanced bioscience sector.
  - B. Acquire the global leading source and core technologies through the foundation of Korea-US joint research.

3. Contents of Research and Development and Performance Goals

3.1. Research content

Conduct international collaborative research in advanced bioscience between competent research groups* from Korea and the United States

*Teams that have secured world-class excellence in the advanced bioscience field.

[Type I: National Strategic Bioscience Technology Type] Joint international research in the four national strategic bioscience technologies of Korea

- Conduct joint international research based on a cooperative system where roles and responsibilities are shared between the Korean and US research groups (institutions) in advanced bioscience and establish a foundation for industrialization.
- (Designated fields) Research in the following four core technology areas: synthetic biology, infectious disease vaccines and treatments, gene and cell therapies, and digital health data analysis and utilization.
- One research group will be selected for each four technology fields, but there may be no selection depending on the results of evaluation.

[Overview and Scope of the Four Major National Strategic Bioscience Fields]

Synthetic Biology	- Bio-manufacturing source technology that introduces engineering perspectives into life sciences with the overall aim to design and synthesize artificial life components and systems. - (Scope) Bio-part and circuit design and production, nucleic acid and protein material redesign, artificial cells and systems, bio-foundries, bio-manufacturing processes and scale-up, etc.
Infectious Disease Vaccines and Treatments	- Base technology for developing vaccines and treatments that can prevent and respond to new, variant, and unresolved infectious diseases. - (Scope) Infectious disease vaccines and treatments, (base technology) antigen libraries, emerging infectious disease prediction, antigen optimization technology, quality, safety, and efficacy evaluation, etc.
Gene and Cell Therapies	- Development and production technology for gene therapies that complement defective genes and cell therapies that directly inject cells to restore cell and tissue functions into patients. - (Scope) Gene therapies, cell therapies, (base technology) next-generation gene editing, gene delivery technologies, next-generation RNA-based therapies, next-generation CAR-based cell and gene therapies, cell-derived material therapies, organoid-based therapies, etc.
Digital Health Data Analysis and Utilization	- Technology for integrating and analyzing bio-medical data to utilize it in personalized diagnosis, precision medicine, treatment, prevention, and health management, etc. - (Scope) Bio-medical big data analysis technology, large-scale genome-based precision medicine technology, AI-based medical imaging diagnostics, AI drug development in bio-medicine, smart health management, etc.

*(Source) Extracted from "National Strategic Technology Advanced Bioscience Mission-Oriented Strategy Roadmap" from Korea

[Type II: Open Call Type] Joint international research on core bioscience technologies based on on-site needs of individual researchers.

Conduct joint research with originality and excellence in core bioscience technology fields based on a cooperative system where roles and responsibilities are shared between Korean and US research groups (institutions).

3.2. Performance Goals

[Type I: National Strategic Bioscience Technology Type]

Phase I ('24~'25)	- [Common] Procure signed international agreements between the Korean and US research institutions. - [Mandatory Performance Indicators] At least 5 performance indicators that can verify the achievement of phase performance goals, to be presented by the individual teams applying for the project.
Phase II ('26~'27)	- [Common] Publish at least 3 papers in the top 10% of JCR fields. - [Common] Achieve joint international patent applications or registrations between Korea and the US - [Mandatory Performance Indicators] At least 5 indicators that confirm the achievement of world-first (originality) and world-best (excellence) level source and core technologies, to be presented by the individual teams applying for the project.

*Each project should meet all of the above performance goals by each phase.

[Type II: Open Call Type]

Phase I ('24~'25)	- [Common] Procure international agreements between the Korean and US research institutions. - [Mandatory Performance Indicators] At least 3 performance indicators that can verify the achievement of phase performance goals, to be presented by the individual teams applying for the project.
Phase II ('26~'27)	- [Common] Publish at least 2 papers in the top 10% of JCR fields. - [Common] Achieve joint international patent applications or registrations between Korea and the US - [Mandatory Performance Indicators] At least 3 indicators that confirm the achievement of world-first (originality) and world-best (excellence) level source and core technologies, to be presented by the individual teams applying for the project.

*Each project should meet all of the above performance goals by each phase.

*Note: For publication outcomes, both the Korean and US principal investigators must be included as authors, with at least one serving as the corresponding author (Review papers will not be recognized as performance outcomes.).

**Note: Mandatory performance indicators will be reflected as one of the evaluation criteria during the initial selection assessment and the assessment between phase I and II.

4. Special Notes

4.1. Participation and Cooperation in the Execution of R&D

- The total period of R&D is four years (42 months), with the first-year R&D period being six months.
- The research director must cooperate with the administrative office of the Korea-US Collaborative Research Project with regards to the evaluation and performance management.

4.2. Application Conditions

- Projects must be applied for by establishing joint research teams between the Korean domestic and US researchers. Multi- and interdisciplinary teams* are highly recommended.

  *Research groups combining multiple academic disciplines and research fields to ensure originality and excellence in joint global research planning and execution.

- The research content to be performed by the overseas institution (including technical cooperation, role distribution, and research fund utilization plan) must be included in the project application. The following should be included on initial submission of the application.

  *Proof of the intent to participate from the overseas institution research director(s) (such as a Letter of Intent, LOI).

  *Details about the research resources, institutional support, and available expertise from the overseas institution.

- Research grant(s) to be awarded for projects or subprojects may be adjusted in the process of evaluation. The entire period of research, budgets, and content may change according to the Korean government budget conditions, legal or regulatory amendments, or changes in the policies.

4.3. Participation Format

- Joint research projects must be conducted at the level of the primary research institution, with prior internal agreements established for R&D participation between the Korean domestic R&D institutions (primary institutions) and overseas institutions (overseas researchers).

  *Eligible range of overseas institutions for this project: Hospitals, research institutes, and universities with main offices and research facilities located in the US (for-profit companies are not eligible).

  *Overseas joint researchers must be primarily affiliated with research institutions located in the US. Researchers from Korean domestic institutions who are temporarily stationed or on sabbatical leave in the US partner institutions will not be considered as a member of the US institution.

- The Korean domestic R&D institution is responsible for the inability to proceed with the project if joint research with the overseas partner institution is withdrawn after the project begins.
- All projects must be executed as the 'Joint Institution' type, according to the National Research Development and Innovation Act of Korea. The 'Joint Institution' type of joint research means that an agreement between administrative office of the Korea-US Collaborative Research Project and

the overseas institution is required, and the overseas institution are recommended to suggest the research resources, institutional support, and available expertise for the current proposal (refer to the International Joint R&D Manual by the Ministry of Science and ICT of Korea, written in Korean).

*A standard project agreement form between the administrative office of the Korea-US Collaborative Research Project and the overseas research institution will be attached at the time of RFP announcement. After the finalization of the selection process, this agreement will be finalized with the relevant overseas research institution. Additionally, the administrative office of the Korea-US Collaborative Research Project will support the conclusion of contracts between the research institutions regarding the ownership and attribution of R&D outcomes.

4.4. Application and Execution Restrictions

The research director(s) of the primary or joint research institutions can submit only ONE proposal. Submitting two proposals will result in disqualification of both (applies equally to Korean and US researchers).

4.5. Ownership and Attribution of R&D Outcomes

It is recommended to refer to the 'International Joint R&D Manual by the Ministry of Science and ICT of Korea (written in Korean)' for specific details regarding the joint research in national R&D projects of Korea.

[Intellectual Property Policy]

- Although intellectual property policies vary by country and the R&D institution, the current joint research conducted under the Korean national R&D projects must adhere to the Korean regulations.
- Specific details can be determined between the participating institutions according to the characteristics of the joint research project and the R&D institutions. These details must be specified in the international contract between the primary domestic research institution in Korea and the overseas research institution (the administrative group will support the conclusion of international contracts).

[Ownership of Joint Research R&D Outcomes]

- For projects conducted under the 'Joint Institution' type, the ownership of R&D outcomes will be attributed to all parties who jointly performed the research. Each party's ownership share shall be proportional to their contribution.
- If it is difficult to accurately quantify the degree of contribution by each researcher (institution), the contract can stipulate that all participating parties own equal shares, or allow the participating parties to determine the shares through consultation after the completion of the joint R&D.

5. Research and Development Period and Budget

5.1. Total Research Period

2024 - 2027 (total 4 years)

*Research period for 2024 is 6 months, and 12 months per year from 2025 onwards.

5.2. Research Budget for 2024 per Project

- (Type I) National Strategic Bioscience Technology Type: 3 billion KRW
- (Type II) Open Call Type: 2 billion KRW
- The annual budget composition per project is as follows:

Period	(Type I) National Strategic Bioscience Technology Type	(Type II) Open Call Type	Total Budget
1st Year (6 months)	**1.5 billion KRW**	**1 billion KRW**	**19 billion KRW**
2nd Year (12 months)	**3 billon KRW**	**2 billion KRW**	**38 billion KRW**
3rd Year (12 months)	**3 billion KRW**	**2 billion KRW**	**38 billion KRW**
4th Year (12 months)*	**1.5 billion KRW**	**1 billion KRW**	**19 billion KRW**
Total per Project	**9 billion KRW**	**6 billion KRW**	**114 billion KRW**

*Although the 4th year research is for 12 months, the budget is provided for 6 months for closing of the awards.

- The amount of research grant paid to overseas institutions is to be determined by the project team based on the overseas institution's role and the degree of contribution to the joint research plan. However, indirect costs paid to overseas institutions must not exceed 38% of the entire direct costs.

5.3. Number of Projects Selected for 2024

- National Strategic Bioscience Technology Type (Type I): Approximately 4 projects
- Open Call Type (Type II): Approximately 13 projects
- The number of projects selected may vary by the competition rates and evaluation results.

6. Selection & Evaluation Criteria

Evaluation Category		Subcategory	Points
Research Innovation (35)	**Research Field & Goals**	✓ Clarity and appropriateness of research goals and directions ✓ Alignment with the project's purpose (considering the RFP)	10

Evaluation Category		Subcategory	Points
	Research Content	✓ Alignment to the world-first (originality) and world-best (excellence) research ✓ Synergy effects from Korea-US joint research (appropriateness of merging and utilizing each institution's strengths) ✓ Necessity of international joint research	15
	Research Method & Plan	✓ Specificity (comprehensiveness) and feasibility of the international joint research plan ✓ Appropriateness of the research execution plan (schedule and budget estimation)	10
Research Capability (35)	**Research Network**	✓ Degree of pre-cooperation foundation established between Korea and US institutions ✓ Appropriateness of role sharing between each groups/institutions	15
	Research Personnel	✓ Excellence of the research capabilities of the Korea-US research leaders and participating researchers ✓ Appropriateness of the research team organization ✓ Research performance of Korean domestic institutions and researchers in the relevant field ✓ Research performance of overseas institutions and researchers in the relevant field ✓ Commitment to cooperative participation and execution plans of joint research by Korea-US research institutions	20
Achievement and Expected Impact (30)	**Excellence of Results**	✓ Excellence of performance goals and validity of performance indicators ✓ Feasibility of achieving performance goals ✓ Future impact of research results ✓ Potential for growth in researcher capabilities	20
	Plan for Utilization of Results	✓ Specificity and validity of the plan to secure results ✓ Value of research outcomes for creating results ✓ Appropriateness of strategies for generating results (presentation of roadmaps related to intellectual property, technology transfer, and commercialization) ✓ Specificity and excellence of plans for utilization and feedback of results	10

Evaluation Category	Subcategory	Points
	✓ Potential for linking research results domestically ✓ Appropriateness of plans for sharing and utilizing research and development outcomes with US research groups	
	Total	**100**

*Note: Some evaluation categories and point allocations may change during the establishment of the selection and evaluation plan. The accurate schedules of evaluation will be posted in the upcoming announcement with the possibility of oral presentation.