Review Guidelines for FY2018 World Premier International Research Center Initiative (WPI) Application (tentative translation)

29 January 2018

WPI Program Committee

The selection of projects under the FY2018 WPI program is carried out under the following guidelines.

I. <u>Basic Screening Policy</u>

Projects are to be selected that have highly attractive research objectives and contents and that possess a high feasibility for establishing the following type of research center: Centers of a high quality that will offer strong incentive for many of the world's top researchers to want to work at them; that is, centers whose excellent research environment and extremely high research standard will make them "globally visible."

II. <u>Screening Procedure</u>

1. Procedures

In vetting applications for this program the WPI Program Committee (hereafter referred to as the Committee) carries out a three-stage process of reviews. Under the Committee, the first review is carried out by the "first-screening committee," the second review by the "second-screening committee," and the third review by the "third-screening committee." The Japanese members of the Committee will conduct the second screening and the Committee members will conduct the hearings. A quorum comprises half of the screening committee members. Decisions are made by a vote of a majority of the attending committee members.

Screening Process

<u>1st screening</u>

Based on a review of the submitted first-screening application documents (e.g. an outline of the center's project plan), this screening committee will refer up to eight applicants to the second screening committee.

<u>2nd screening</u>

The applying institutions that have been passed the first screening will submit more detailed applications (second-screening application documents) to the second-screening committee, which will, based on the result of mail reviews carried out in advance, conduct a second-document review and select up to four center projects for referral to the third-screening committee.

3rd screening

The third-screening committee will conduct hearings on the centers selected in the second round, and choose the two most qualified ones from among them and refer them to MEXT, which will make the final decision.

2. Makeup of the first screening committee
(1) Makeup of the first-screening committee and the committee member selection criteria

The committee is made up of the following:

i. About three Japanese members of the Program Committee

ii. About five individuals selected from among people with a good understanding of the factors involved in the establishment of a top world-level research center who have either of the following qualifications:

a) Have abundant experience and expertise in the management and research activities of universities, national R&D agencies or other related organizations.

b) Possess experience in research management.

(2) Committee member selection procedure

Based on (1) above, the Japanese members of the Committee will select the members of the first screening committee.

3. Procedure for carrying out the first screening
- The WPI secretariat mails the submitted first-screening application packages to the members of the first-screening committee in advance.
- Based on the application documents, the first-screening committee conducts a review of the center project proposals. The committee members deliberate and select up to eight center projects to refer to the second-screening committee. Regarding the projects that are not selected, the committee verifies the reasons for their non-selection, incorporates them into comments, and submit the comments to the secretariat.
- The secretariat speedily notifies MEXT of the first-screening results along with any comments offered by the screening committee.
- After the MEXT's confirmation of the first-screening results, the secretariat speedily informs the selected institutions of the second-screening decision and instruct them to submit their second-screening application documents to the secretariat by a specified date.
- Based on the selection report it receives from the secretariat, MEXT speedily informs the non-selected institutions of the results and forwards them the committee's comments on their center project.

4. Procedure for carrying out the second screening
(1) Conducting mail reviews
- A number of reviewers are selected to conduct a review of mailed-in documents

based on the guidelines stipulated in "Implementation of Mail Reviews" (Attachment).
- The secretariat sends the second-screening application packages submitted by the applying institutions to the reviewers.
- Based on the "Review Guidelines" and the Mail Review Form (separately prepared), the reviewers evaluate the contents of the applications and send their results to the secretariat by the specified date.

(2) Selecting candidates for the third screening
- The secretariat sends the application packages received from the centers to each member of the second-screening committee in advance.
- Based on the content of the second-screening application documents and the evaluation results of the mail reviewers, the committee members deliberate and select up to four centers, which are referred to the third-screening committee. The committee verifies the reasons for the non-selection of projects and submits its comments to the secretariat.
- The secretariat speedily notifies MEXT of the second-screening results along with any comments offered by the screening committee.
- Upon MEXT's confirmation of the second-screening results, the secretariat speedily informs the selected centers of the time and place for their third screening, which will take the form of a hearing.
- Based on the selection report it receives from the secretariat, MEXT speedily informs the non-selected centers of their results and forwards the committee's comments to them.

5. Procedure for carrying out the third screening
(1) Conducting hearings
- Documents that applicants wish to use in the hearing, other than the second-screening application documents, should be submitted to the secretariat in advance. Those not sent in advance are not allowed to be used. The secretariat sends the hearing package to each member of the third-screening committee in advance. (The documents will include the second-screening application documents, written in English.)
- The hearings are conducted based on the "Panel Review (Hearing) Guidelines" (prepared separately) with the candidate center director and the head of the host institution. Hearings are conducted in English. Questions and answers should as a rule also be in English.
- The Committee members are, based on the "Review Guidelines," to evaluate each center project and record their scores and comments on the Panel Review Form (prepared separately). The secretariat will tally the scores and report them back to the Committee.

(2) Selecting the grantees
   - Based on the hearing results, the Committee members deliberate and decide the projects to be selected. The reasons for their selection are to be noted and reported to the secretariat. At that time, if there are areas deemed to require improvement, they are also reported to the secretariat. Regarding the projects that were not selected, the reasons for their non-selection are to be noted and reported to the secretariat.
   - The secretariat speedily notifies MEXT of the third-screening results and inform it of any comments offered by the third-screening committee.
   - Based on the report received from the secretariat, MEXT makes the final decision on the selected center projects. MEXT, then, speedily notifies the host institutions of the selected centers of its decision. It also informs them of any comments offered by the screening committee on needed improvements and requests them to have the centers make those improvements.
   - Based on the report received from the secretariat, MEXT speedily informs the host institutions of the non-selected centers of the results and forwards the Committee's comments to them.

III. <u>Screening Criteria</u>

   The WPI program has four missions: Advancing research of the highest global level (Science), generating fused disciplines (Fusion), realizing an international research environment (Globalization), and making organizational reforms (Reform).
   To achieve them, the screening is to be conducted per the following points.

1. Evaluating the center projects
   (1) Overall framework of the center project
     (1)-1 Identity
      - Does the center have the clearly articulated mission and identity?
     (1)-2 Goal setting
      - Has the center set goals that will achieve the objectives of the WPI program and are the goals high enough to establish the center as a top world-level research center?

   (2) Content of research
     (2)-1 Research fields
      - While developing future key fields, can they be expected to remain relevant over the relatively long 10-year period of WPI support? Can they be expected to achieve top world-level research by perpetually and strategically challenging the creation of new domains?
      - In principle, will research fields be cutting-edge fused in ways that can be expected to create key domains in the future?

- Will advancing the research domain be of significant scientific and societal importance, and is the choice of the research domain and neighboring fields suitable in the light of research trends both in Japan and abroad?
- Are the research fields ones in which Japan's expertise can excel? Are they challenging fields that can be expected to solve world-level scientific and/or technological issues and that have international appeal?

(2)-2 Research objectives
- Are the stated research objectives achievable? If achieved, will the results be appraised as being top world level?
- Do the objectives seek to challenge and solve world-level scientific and/or technological issues? Can their achievement be expected to exert an impact on society?
- Will the concrete research plan be effective in achieving the research objectives?
- Are the objectives articulated in an easy-to-understand manner by the general public?

(2)-3 System for advancing the research (e.g. researchers and other center staff comprising the center)
- Does the center have a physical concentration (or core) of pivotal researchers on a certain scale, who possesses a high research level?
- Is the research group an appealing one? Does it have an effective strategy for inviting principal investigators?
- As required in section 5. (4) a. of the "Application Guidelines," does the center's plan provide for at least 7-10 of the world's top principal investigators (full professors, associate professors or others of comparable standing) including highly qualified foreign researchers invited from abroad, researchers within the host institution, and researchers invited from other Japanese institutions? As required in 5. (4) b. of the "Guidelines," does the center set a target for the staffing of at least 70-100 staff members including young postdoctoral researchers, research support staffs, and administrative employees? Does it have an effective plan for ultimately meeting these staffing targets according to a time schedule?
- Will at least the half of the principal investigators who form the core of the research center rank among the world's top researchers?
- If a center plans to form satellites or organic linkages with other domestic/overseas institutions to carry out collaboration and do facility/equipment sharing with such institutions in ways to strengthen and expand the center's overall capability, it will be appropriately evaluated in the screening process.

(2)-4 Securing research funding

- Based on the past records, can the center be expected to secure competitive grants and other research funding in addition to the funding provided under this program? (It is desirable that the applying institution possesses a past record of having acquired external grants in an amount equivalent to at least 80% of research funding it is expected to secure for the project.)
- Can additional resources that match or exceed the amount of this WPI project grant be secured to support the center's operations and its research activities? (They may, for example, be competitive funding obtained by the center's researchers, in-kind contributions and other forms of assistance by the host institution (including payment of salaries, provision of research space, external donations.)

(3) Interdisciplinary research
- Will it be necessary and important to fuse different research domains to achieve the center's research objectives and create scientific fields of future importance?
- Is a reasonable role for mathematics and information science indicated in efforts to create a new scientific domain and fuse research fields?
- If for reasons of advancing its research or feeding its outcomes back into society a center chooses to include, within a necessary and reasonable limit, humanities and social science domains in its research domain and to create linkage with such fields, it will be evaluated appropriately in the screening process.
- Is there an innovative and concrete strategy put in place to accelerate the advancement of fusion research and create new fields?

(4) International research environment
  (4)-1 System for advancing international research (e.g. researchers and other center staff)
  - As required in section 5. (4) a. of the "Application Guidelines," dose the center's plan provide for at least 20% of its highly qualified principal investigators invited from overseas? In accordance with section 5. (4) c., are 30% of its researchers being from overseas at all times? Does the center have an effective plan for ultimately meeting these staffing targets according to a time schedule?
  - To what degree will researcher (including postdoctoral) positions be filled through open international solicitations? (In principle, international solicitations are expected to be used.)

  (4)-2 Establishment of international research environment
  - Have steps been taken to provide adequate staff support to handle paperwork and other administrative functions so that researchers can work in an unencumbered, comfortable environment?
  - Is startup research funding provided or other measures taken to ensure that

the world's top researchers invited to the center can get a robust start on their research work?
- Is English established as the primary language for work-related communication? Are administrative personnel appointed who can facilitate the use of English in the work process?
- Are international research conferences or symposiums planned to be held regularly (at least once a year) to bring the world's top researchers together at the center?

(5) Center management and system reform

(5)-1 Project management
- Has a dedicated center director been selected who devotes him/herself to recruiting highly qualified researchers and personnel, reforming systems, and carrying out other operational functions?
- In addition to leading the research activities at the center, is the director capable over his/her 10 years tenure in this position of exercising highly effective leadership and of inviting outstanding researchers to the center from around the world as the center's "face" and the person who gives the center an attractive persona within the international community?
- Does the director have a clear and comprehensive vision of constructing the center?
- Has an administrative director been appointed and an administrative system put in place to provide the center director with strong administrative and managerial support, while consistently maintaining an environment in which researchers can comfortably advance their work?
- Does the center's operational management system have a top-down decision-making mechanism centered around the director so as to enable flexible and swift decisions?
- With the exception of final decisions on hiring and dismissing the director, does the center's system enable the director to make all operational decisions?
- Has a rigorous system been adopted for evaluating the research? Has a system for merit-based compensation (e.g. institute a merit-based annual salary system) been introduced?

(5)-2 Research environment
- Are the equipment and facilities, including laboratory space, provided appropriate to a "world premier international center"? (To make the center globally visible, a core environment should be established within it where participating researchers physically gather together to carry out research activities.)
- Are other measures taken to ensure that the researchers can comfortably devote themselves to their research within an international and competitive

environment at the center? Are necessary measures taken to include researcher participation in graduate student education?

(5)-3 Establishing an independent research center in sync with reorganizing the host institution
- Does the proposal seek to establish a new center that will achieve independence within 10 years? Can the project advance synchronization between WPI center support and reform of the host institution's existing organization?
- Are a concrete plan and schedule for achieving the center's mid- to-long-term independent operation within the host institution provided in the proposal?
- Does the plan include the adjustments that will need to be made within the host institution's existing organization for the center to operate independently and acquire external funding?

2. Evaluating the Appropriations Plan
- Is the budget and its contents appropriate and does it provide an amount of financing required to implement and achieve the center's plan?

3. Evaluating the Host institution's Commitment
- Toward achieving the center's independence by the time WPI funding ends, does the host institution clearly define the center's role within its own mid-to-long-term strategy and provide its comprehensive support from the time that the funded project starts?
- Does the host institution provide a mid-to-long-term policy for reforming the host institution's organization, and a concrete plan and schedule to carry it out? Further, is the policy sufficient to sustain and develop the center after WPI support ends, and can it be expected to be concretely and clearly implemented by the time of the center's interim evaluation?
- As required in section 6. of the "Application Guidelines," will the host institution provide sufficient support for carrying out the center's operation and research activities, including necessary personnel, financial, and system support? (The center is expected to acquire funding from other sources in an amount that is equivalent or larger than the WPI grant.)
- Will the necessary support be provided to achieve the independence of the center and sustain its research at a top world level after the WPI grant period ends?
- Will a system be provided that in practice allows the center director to make decisions in implementing the center project, including personnel and budgets?
- Will the host institution support the mobilization of researchers from its faculties to the center?
- Will the host institution guarantee the flexible applying, revising or supplementing the host institution's internal system as needed for the center to

effectively implement new management methods unfettered by conventional modes of operation (e.g. English-language environment, merit-based pay, top-down decision making, linkage to graduate school education)? Is it committed to being cooperative in this regard?

- Will the host institution secure, provide and deliver the necessary infrastructure for the center to carry out its activities (e.g. research space, facilities, land)?
- Is the host institution ready to provide other concrete support needed to establish a top world-level research center?
- Will the host institution self-evaluate the results of the system reforms achieved by the center and distribute the highly evaluated ones to all of its departments?
- If a host institution has already established a center under the WPI program, is it providing sufficient support to sustain and further develop that center as a top world-level institute? Is the host institution able to support the continuation of the existing center and fully support the new center at the same time?
- If the host institution has already established a WPI center, has it taken the initiative to spread the center's good system reform results to other departments throughout the institution and thus applied them to its own reform?

4. Overall Appraisal
- Will the implementation of the center project's plan enable the realization of a truly world-premier international research center, one capable of attracting top world-level researchers from around the world?
- Will sufficient effort be made to sustain the center as a "world-premier international research center" after project grant has ended?
- Will the center become a trailblazer in providing a model for developing a top world-level research center that can be emulated by other departments of the host institution or other institutions?

IV. Others
1. Access and disclosure
　(1) So as to ensure the sound implementation of application reviews, neither the details of reviews nor the review materials are to be publicly disclosed.
　(2) The review results and comments on each selected center are to be released by posting them on websites and by other means after the awardees are selected.
　(3) Regarding applications that lack the proper qualifications, the applicants shall be informed of why their applications were not given a document review.
　(4) Regarding applications that were reviewed but not selected, the reasons for the non-selection shall be provided to the applicants without specifying the review results of individual committee members.

2. Conflicts of interest
　If any of the below-listed elements are applicable to a committee member, s/he

shall immediately inform the secretariat of such and withdraw from participating in the review of the subject application. That is, s/he shall neither participate in the document nor panel reviews of the subject application, nor in the screening committee discussion or decision regarding that application. S/he shall leave the room when such discussion takes place.

a) If s/he is a full- or part-time employee of the host institution (or is scheduled to become one), or if s/he has been employed by the host institution within the past three years

b) If s/he is a participant in the center project

c) If s/he has a relationship with the head of host institution or the candidate center director in the following two cases:
  (1) Is a relative or has a similarly close personal relationship with them
  (2) Has a close mentor relationship with them

d) If s/he is scheduled to be a member of an evaluation committee established within the subject center

e) If s/he participated in the decision-making process involved in proposing the center project

f) If s/he is closely engaged in joint research with a person who will participate in the subject center

g) If s/he would stand to gain something from the selection or non-selection of the subject project, or is in a position of opposition or competition vis-à-vis the project

h) If s/he has any other reason that would make it difficult to conduct a neutral and fair evaluation.

3. Confidentiality

- Committee members and mail reviewers are prohibited from disclosing any personal information or review-related information learned during their participation in the review process.
- Committee members and mail reviewers are required to keep review-related information and data (including applications and documents) separate from other materials and to maintain good stewardship over them.

(Attachment)

Implementation of Mail Reviews

1.　Mail Reviewer Selection Criteria
 (1) Selection criteria
　The mail reviewers must have a good understanding of the factors involved in
　establishing top world-level research centers. They are to be selected based on either
　one of the following criteria.
　　[1] From the viewpoint of system reforms (System reviewer):
　　　- Have abundant experience and expertise in the management and research
　　　　activities of universities, national R&D agencies or other related organizations.
　　　- Possess experience in research management
　　[2] From the viewpoint of research content (Science reviewer):
　　　- Have engaged as a specialist in research in related fields; have amassed a
　　　　record of research results; and possess expert knowledge and insights
　　　- Possess a good and wide knowledge of related fields

　Reviewers are to be selected from a variety of perspectives to ensure impartiality in
　the screening process. In this regard, the following points should be borne in mind.
　　a) A balance should be made among reviewers from universities, national R&D
　　　agencies, private corporations and other organizations.
　　b) A balance should be attempted in reviewer gender, home region, and age.
　　c) The appointment of researchers from overseas universities and research
　　　institutions as reviewers should be considered so as to perform evaluations
　　　reflective of what is appealing from an overseas perspective.

 (2) Conflicts of interest
　　[1] Mail reviews may not be carried out by the head of the applying institution or
　　　center's director candidate.
　　[2] If any of the below-listed elements are applicable to a mail reviewer, s/he shall
　　　immediately inform the secretariat of such and withdraw from the review of the
　　　subject application.
　　　a) If s/he is a full- or part-time employee of the host institution (or is scheduled to
　　　　become one), or if s/he has been employed by the host institution within the past
　　　　three years
　　　b) If s/he is a participant in the center project
　　　c) If s/he has a relationship with the head of the applying institution or the
　　　　candidate center's director in the following two cases:
　　　　(1) Is a relative or has a similarly close personal relationship with them
　　　　(2) Has a close mentor relationship with them

d) If s/he is scheduled to be a member of an evaluation committee established within the subject center

e) If s/he participated in the decision-making process involved in proposing the center project

f) If s/he is closely engaged in joint research with a person who will participate in the subject center or has been so engaged within the last three years (e.g. carrying out a joint research project, co-authoring a research paper, or closely affiliated as a member of the same research group.)

g) If s/he would stand to gain something from the selection or non-selection of the subject project, or is in a position of opposition or competition vis-à-vis the project

h) If s/he has any other reason that would make it difficult to conduct a neutral and fair evaluation.

2. Mail Reviewer Selection Process

(1) System reviewer

From among the persons meeting the criteria stipulated in section 1. (1) above, the secretariat shall select six reviewers (alternates shall be invited if deemed necessary) as candidates and prepare a list of them.

It shall forward the list to each member of the second screening committee for comments, based upon which the chairperson of the Committee shall finalize the list of candidates. Then, each candidate will be sent an invitation to participate as a mail reviewer. Those who give informal consent will be chosen as the reviewers. (If candidates should decline the invitation, alternates shall be invited in order listed.) The finalized list of reviewers shall be sent to all the committee members.

(2) Science reviewers

Based on information provided by applicants in their first screening application documents (e.g. fields, key words, project summary), the secretariat shall prepare a list of (about six) candidates, who meet the criteria stipulated in the section 1. (1) above to be invited as mail reviewers. The secretariat shall, then, obtain the informal consent of each candidate and forward a list of them to the second screening committee chair for confirmation. The candidates should include individuals who are currently engaged in research at overseas universities or research institution and who have abundant work experience in those organizations.

In both the above cases (1) and (2), an explanation of the program is to be provided to the selected reviewers so that they shall conduct evaluation with a full understanding of the purpose of the program.

3. Mail Review Implementation

The reviewers selected based on the criteria stipulated in section 2 above shall be sent application screening application packages, and shall conduct mail reviews based on

them. If any of the reviewers report a conflict of interest, another reviewer will not be appointed to take his/her place. As a rule, no limit is set on how many applications one reviewer may handle. In the case of the system reviewers, to ensure uniformity, all of the same reviewers should review all the applications, in principle.