# Chapter 2 CREST Program

#### 2.1 CREST

#### 2.1.1 CREST Overview

Key points and characteristics of CREST are discussed below.

- a. CREST promotes goal-oriented basic research that is unique and among the most advanced of its kind in the world, in order to accomplish strategic objectives designated by the national government. CREST supports research undertaken by research teams aiming to produce outstanding results that will contribute greatly to future science and technology innovation.
- b. Research Areas of CREST is overseen by the Research Supervisor, who manages Research Directors at industrial, academic, or government institutions. A Research Supervisor manages a Research Area as a virtual research institute.

The Research Supervisor, in his/her role as director of a virtual research institute, enlists the cooperation of Research Area Advisors and others in managing his/her Research Area through the following activities.

- Specification of a management direction for his/her Research Area
- Research projects selection
- Refinement and approval of research plans (including research costs and assembly of the research team)
- Participating in the research area meetings at which Research Directors report on their research progress and have their results discussed, visiting labs where research is being performed, and taking other opportunities as well to communicate with Research Directors and provide them with advice and guidance on their efforts.
- Research project evaluation
- Other necessary activities
- c. A Research Director can bring multiple researchers together in a team optimal for pursuing the Research Director's proposed research initiative. A Research Director advances research that will contribute to the overall purposes of the Research Area, while bearing full responsibility for the research project he/she is leading.

#### 2.1.2 Program Scheme of CREST

# (1) Research Budgets

The budget for one research team basically ranges from 150 million yen to 500 million yen (for entire research periods up to five and a half years). In some cases the Research Areas may have independently established budget ranges, so make sure to refer to "Chapter 6 Research Areas Calling for Proposals" for details. In addition, JST, under contract research agreements, pays research institutions funds up to 30% of the research budget (direct cost) to cover overhead (indirect cost).

Proposed research budgets are examined as part of the selection process. Actual research budgets are determined through examination and approval of research project planning. For more details, please refer to "5.2 Common subject matters of after Selection: Proceeding with Research Work".

#### (2) Research Period

The research period will be five and a half years or less, starting in October 2017 and ending in March 2023 (i.e. at end of FY2022) or earlier.

Actual research periods depend on research project plans. For more details, please refer to "5.2 Common subject matters of after Selection: Proceeding with Research Work".

#### (3) Research Team Organization

A Research Director can bring together multiple researchers into an optimum research team.

- a. The person proposing a research project, a Research Director, can organize a research team Research Director's Group consisting of only people from his/her research lab. Alternatively, when pursuing a research initiative requires it, a research team including a group ("joint research group") of researchers or other personnel from unrelated research labs or research institutions may also be organized.
- b. Among researchers comprising a research team, those representing a "joint research group" are referred to as "Lead Joint Researcher."
- c. When necessary for the pursuit of research, researcher staff, research assistants, and other personnel can be employed within the research budget and allowed to participate as members of the research team.
- \* For more details on research team organization requirements, please refer to "2.2.4 Proposal Submission Requirements".

#### 2.1.3 Program Flow of CREST

#### (1) Solicitation and Selection of Proposals

JST solicits research proposals for individual Research Areas specified among the Strategic Objectives designated by the national government. Selection of proposals is made by the Research Supervisor, with the cooperation of Research Area Advisors and others, for individual Research Areas.

\* For more details, please refer to "2.2 Solicitation and Selection of Proposals".

# (2) Research Plan Preparation

Once a proposal has been selected, the Research Director prepares an overall research plan covering the entire period of the research project. The Research Director also prepares annual research plans for each year of the project.

Research plans cover budgets and research team composition.

For more details, please refer to "5.2.1 Preparing a Research Plan".

#### (3) Agreements

Once a research proposal has been accepted, JST will enter into contract research agreements with the research institutions with which the Research Director and Lead Joint Researchers are associated.

For more details, please refer to "5.2.2 Research Agreements".

#### (4) Research Work

Research work is to be performed in a five and a half year period or shorter duration that starts in October 2017 and ends in March 2023 (i.e. at the end of FY2022) or earlier.

#### (5) Evaluation

The Research Supervisor will familiarize himself/herself with the status and results of individual research projects and, with the cooperation of Research Area Advisors and others, produce interim and post-completion evaluations. In addition to research project evaluations, Research Area evaluations are performed to examine Research Areas and the Research Supervisor. Research Area evaluations are performed on an interim and post-completion basis.

\* For more details, please refer to "5.2.7 Project Evaluations" and "5.2.8 Research Area Evaluations".

#### 2.2 Solicitation and Selection of Proposals

#### 2.2.1 Eligible Research Proposals

- (1) Research proposals are solicited for the 11 Research Areas mentioned in the section, "1.2 Research Areas for which Proposals will be Solicited" in Chapter 1.
- (2) Carefully read the "Research Area Outline" for each of the Research Areas mentioned in "Chapter 6 Research Areas calling for Proposals" and the "Research Supervisor's Policy on Calls for Application, Selection and Management of the Research Area" before proposing research appropriate for one of the Research Areas.
- (3) Be certain to confirm important common items described in "Error! The source of reference is not found."

#### 2.2.2 Solicitation Period

Wednesday, April 12 to 12:00 P.M. on Tuesday, June 6, 2017 (No exceptions).

For information on schedules for briefings, calls for proposals, etc., please refer to "1.3 Solicitation and Selection Schedule".

No proposal for which the application procedure has not been completed via e-Rad by the deadline is subject to examination for any reason.

## 2.2.3 Numbers of Research Projects

Three to eight research projects shall be selected for each Research Area. (The number for any particular Research Area will vary depending on research intent, conditions with regard to research proposals, and budget limitations.)

#### 2.2.4 Proposal Submission Requirements

Proposal submission requirements are as presented below in items 1), 2) and 3)...

Please make sure that you understand these requirements for your submission.

- In principle, if the determination has been made that a submission will not fulfill the requirements by the time of selection, the research proposal will either not be accepted or selected.
- If a submission has been selected, the research project must maintain its qualified status per the submission requirements for the entire duration of the period of research. If the research project fails to meet the requirements during the research period, the research project will in principle be completely or partially suspended (i.e. be terminated early).

When submitting a proposal, please do so based on an understanding of the points under (1) through (3) below, and discussed in "Chapter 8 Key Points in Submitting Proposals" and "Chapter 9 Limitations on the Overlap of Proposals within the Strategic Basic Research Programs".

#### (1) Requirements for Research Project Applicants

- a. Research project applicants, who will be the Research Director, must be affiliated with a domestic Japanese research institution, where they will organize and pursue the proposed research (The nationalities of research project applicants are not considered.)
  - \* The following types of people may also submit research project proposals.
    - Researchers who have foreign citizenship, but are associated with a domestic Japanese research institution.
    - Researchers who are not currently affiliated with a research institution, or are affiliated with an overseas
      research institution, and, if selected as a Research Director, would be able to organize and pursue
      research as a researcher affiliated with a domestic Japanese research institution. (Nationality will not be
      considered.)
  - \* This also covers those affiliated to private sector companies and other non-university research institutions.
- b. Researchers who are able to bear overall responsibility for a research project as the party responsible for the research team throughout the entirety of the research period.

- \* For more details, please refer to "5.2.5 Responsibilities of Research Director, Lead Joint Researchers and Individual Researchers after approval".
  - c. The applicant must either: Have already completed the educational program for research integrity at his/her affiliated research institution; or complete the JST-provided educational program by the application deadline.
    - For details, refer to "8.1 Enrolling in and Completing the Educational Program for Research Integrity."
  - d. The applicant must pledge following four items upon submission.
    - Understand and comply with "Guidelines for Responding to Misconduct in Research Activities"
       (decided by the Minister of Education, Culture, Sports, Science and Technology on August 26, 2014).
    - Understand and comply with "Guidelines on Management and Audit of the Public Research Expenses
      in Research Institutions (Implementation standards)" (decided by the Minister of Education, Culture,
      Sports, Science and Technology on February 15, 2007; revised February 18, 2014).
    - If the research proposal is accepted, the Research Director and research participants must not engage in misconduct in their research (fabrication, falsification, and plagiarism) nor in inappropriate usage unlawful use of research funds.
    - No misconduct in research was made in the past research results mentioned in the submitted research proposal. 

      The above information will be confirmed in the submission process through the e-Rad.

#### (2) Requirements for Organizing a Research Project

The following requirements must be met. Please refer to item d in "5.1.3 Selection Perspective".

- a. A research team is the optimal organizational approach for pursuing the research initiatives of the research project applicant, who will be the Research Director.
- b. When a joint research group is organized to work with the research team, the joint research group is essential for pursuing research initiatives and can contribute greatly to achievement of the research objectives.
- c. Participation of an overseas research institution research group (where a researcher affiliated with an overseas research institution participates as a Lead Joint Researcher) in a research project is contingent on whether the research concept can only be achieved with the participation of the selected overseas institution (and requires Research Supervisor approval). The deliverables of such collaboration, including intellectual property rights, must be traceable.
- When it is desired that one or more overseas research institutions be included in a research team, please note on the research proposal (CREST Form 12) the reasons why the participation of research collaborator affiliated with overseas research institutions is required. Please refer (2) in "5.2.6 Responsibilities of Research Institutions".

d. Researchers who are presently PRESTO researchers cannot function as Lead Joint Researcher (Except in cases in which PRESTO research work will be concluded in FY2017.)

# (3) Research Institutions Requirements

Research Institutions must fully recognize that the research funds are public funding, ensure compliance with related law, and make efforts to implement the research effectively. Research institutes that cannot accomplish the tasks described in "5.2.6 Responsibilities of Research Institutions" will not be enjoined to implement research; thus, when applying, a prior consent of the research institute at which the implementation of research is planned, shall definitively be obtained.

### 2.3 Research Proposal (Form) Completion Requirements

A list of documentation to submit is shown below. Prepare research proposals by following the research proposal completion requirements beginning on the following page. Please use the Research Proposal Form of FY2017.

Some research areas require to use their original proposal forms. Please use the proposal form of the research area to which you are planning to apply. Please refer to "Chapter 6. Research Supervisor's Policy on Calls for Application, Selection and Management of the Research Area".

| Form No. | Document   |
|----------|--|
| 1        | Research Proposal  |
| 2        | Research Proposal Overview and Major Achievements of the Research Director   |
| 3        | Research Initiative  |
| 4        | Research Project Organization 1  |
| 5        | Research Project Organization 2  |
| 6        | Research Budget  |
| 7        | List of Achievements (Research Director) / Ex-Post Evaluation Results        |
|          | (Research Director)  |
| 8        | List of Achievements (Lead Joint Researcher(s))                              |
| 9        | List of Patents (Research Director & Lead Joint Researcher)                  |
| 10       | Other Support  |
| 11       | Measures for Protecting Civil Rights and Complying with Laws and Regulations |
| 12       | Other Special Remarks  |

- File sizes should not exceed 3MB in total.
- Please read "5.1.1 Conflicts of Interest involving Research Project Applicants and the Research Supervisor" or the (CREST -- Attachment) Pre-Submission Check Sheet "Relationships with the Research Supervisor." If there is even one item for which a judgment cannot be made, download and fill the Inquiry Form below and send it to the Contact before submitting a research proposal.

Inquiry Form: http://senryaku.jst.go.jp/teian/en/koubo/h29youkou\_form-en.doc

Contact: <a href="mailto:rp-info@jst.go.jp">rp-info@jst.go.jp</a>

For more information on how to submit a research proposal, please refer to "Chapter 10 Recruiting via the Crossministerial R&D Management System (e-Rad)".

Prior to submitting a research proposal, please confirm understanding of "Chapter 8 Key Points in Submitting Proposals" and "Chapter 9 Limitations on the Overlap of Proposals within the Strategic Basic Research Programs".

# Proposal Preparation Checklist

(CREST – Attachment)

O Please give yourself plenty of time to go complete this checklist.

| Chec | k   | Reference Material                 |      |  |  |
|------|---|------------------------------------|------|--|--|
| Have | you completed e-Rad researcher registration?  | Chapter 10                         |      |  |  |
| Have | Have you completed the educational program on research integrity? Section 8.1   |                                    |      |  |  |
| Conf | lict of interests with the Research Supervisor:*  | Section 5.1.1                      |      |  |  |
| a    | The research project applicant is a relative of the Research Super  | ervisor.                           | No □ |  |  |
| b    | The research project applicant and the Research Supervisor are organizational unit (e.g. same research lab) of a university, national funded research and experiment institution. Or, the research prosupervisor are affiliated with the same company.  | onal or other national government- | No 🗆 |  |  |
| c    | The research project applicant and the Research Supervisor are presently working in close cooperation on the same joint research project. Or, have done so within the past five years.  (Existence of close cooperation will be judged by the facts that, for example, the research project applicant and the Research Supervisor are working together on the same research project, are performing different parts of the same research project, or are co-authors of a research paper. If you have any questions, please contact JST) |                                    |      |  |  |
| d    | The research project applicant and the Research Supervisor wer relationship for a total of more than 10 years (not necessarily comployer-employee relationship. "Close teacher-student relation research project applicant and the Research Supervisor were afficases in which the Research Supervisor, though affiliated with a functioned as a research advisor for the research project applications."   | No 🗆                               |      |  |  |

<sup>\*</sup> When it is unclear whether any of the above conditions apply, please download and fill the Inquiry Form (http://senryaku.jst.go.jp/teian/en/koubo/H29youkou\_form-en.doc) and send it via email to rp-info@jst.go.jp.

## O Deadline for submission

Immediately before the deadline, e-Rad may suffer high system burden. As a result, the application may take a long time, and troubles, including the failure to complete the application, may occur. Try to complete the application well in advance.

#### O Forms

Check the proposal documents for possible omissions before submission. A proposal application may not be accepted if relevant forms have been filled out incorrectly.

|         | Items  | Check point  |  |
|---------|--|--|--|
|         | Input of general information on the applicant to e-Rad | All necessary information is provided.                         |  |
| Form 1  | Information on the applicant                           | All necessary information is provided.                         |  |
|         |  | Information is matched with e-Rad data.                        |  |
|         | Research Proposal Overview and                         | When converted to PDF format: Is Item 1 no more than two pages |  |
| Form 2  | Major Achievements of the                              | long? Is Item 2 within one page?                               |  |
|         | Research Director                                      | long: Is item 2 within one page:                               |  |
| Form 3  | Project Description                                    | Form 3 must fit in 6 sheets                                    |  |
| Form 4  | Research Project Organization 1                        | All necessary information is given (Particularly, effort is    |  |
| 1 om    | research roject organization r                         | provided).   |  |
| Form 5  | Research Project Organization 2                        | All necessary information is given (Particularly, Institution  |  |
| 1 om 3  | research roject organization 2                         | Code, Researcher ID No. and effort are provided).              |  |
| Form 6  | Budget Plan  | Total Sum is matched with the research budget given in Form 1. |  |
|         | List of Achievements (Research                         |  |  |
| Form 7  | Director) / Ex-Post Evaluation                         | List a maximum of 20 principal papers.                         |  |
|         | Results (Research Director)                            |  |  |
| Form 8  | List of Achievements (Lead Joint                       | Do not exceed 10 papers for each Lead Joint Researcher.        |  |
| Tomio   | Researcher(s))   | bo not exceed to pupers for each Lead some resement.           |  |
| Form 9  | Patent List (Research Director,                        | Form 9 must fit in 1 sheet or less.                            |  |
| FOIII 9 | Lead Joint Researcher(s))                              | Form 9 must fit in 1 sheet of less.                            |  |
| Form 10 | Information on Other Supports                          | All necessary information is given.                            |  |
|         | Protection of Human Rights and                         |  |  |
| Form 11 | Compliance with Laws and                               | Even when this is not applicable, please indicate that.        |  |
|         | Regulations  |  |  |
| E 10    | References and   | F 12 (5: 2.44 )  |  |
| Form 12 | Additional Statement                                   | Form 12 must fit in 2 A4 sheets                                |  |
|         |  |  |  |

# Instruction for research proposal preparation

(CREST-Form 1)



# **FY 2017 Application CREST Research Proposals**

| Research Area                       |  |
|-------------------------------------|--|
| Title of proposed research          |  |
| project                             |  |
| Name of Research Director           |  |
| Affiliated Institution, Section,    |  |
| Title                               |  |
| Researcher ID No.                   | Enter the 8-digit "e-Rad" login ID which is provided by registering researcher information on the e-Rad system ( <a href="http://www.e-rad.go.jp/">http://www.e-rad.go.jp/</a> ).  |
| Academic Background                 | List the applicant's undergraduate and graduate education as indicated below:  Year: Undergraduate Institution, Major Degree, Supervisor  Year: Graduate Institution, Major Degree, Supervisor   |
| Professional Appointments           | List, in chronological order, all academic/professional appointments of the applicant finishing with the current appointment. Include the name of a project leader or a supervisor who had/has been at a mentoring position for the given appointment. |
| Information of Research<br>Director | URL:  Please indicate URL if there are any websites where the information of the Research  Director is available (such as a website of his/her laboratory or researchmap webpage, etc.).   |
| Research Period                     | [mm. yy] – [mm. yy]  |
| Effort of this FY                   |  |
| Total Research Budget               | Total Budget: million yen  |

Do not exceed one A4-size sheet (no exceptions)

# Notes for the preparation of Form 1

#### - Proposed Research Area

Only one application may be submitted across all the Research Areas in CREST, PRESTO and ACT-I.

#### - Researcher ID No.

Proposals must be submitted via the e-Rad system. Those who do not have Kakenhi ID or e-Rad login ID should contact their affiliated Research Institution personnel or the e-Rad Helpdesk immediately to obtain the e-Rad ID. See Chapter 10 in this guideline.

#### - Academic Background & Professional Appointments

Make sure to list the names of the supervisor / the head of the affiliated research laboratory.

#### - Research period

The ending time period of research projects can be set to an arbitrary date prior to March 31, 2023 (default).

#### -Efforts in this fiscal year

Describe the relative ratio (%) of time necessary to undertake the research, assuming the total work time (including research-, educational-, and medical-related activities) for the year is 100%, as defined by the General Science and Technology Innovation Conference. Do not include efforts , such as grants, that are being applied or planned. Include only efforts, such as grants that are being received or to be received in case the proposal is adopted for CREST. The sum of the ratios of efforts involved in CREST and the grant presently received must not exceed 100%.

Please delete this page at the time of suggestion

(CREST-Form 2)

### Research Proposal Overview and Major Achievements of the Research Director

#### 1. Outline of Research Project

- Provide an overall description of the research proposal in less than two A4-size sheets (no exceptions). Use 10.5 point or larger font size (If these instructions are not followed, the research proposal might not be accepted).
- Form 2 chiefly covers material that is critical for documentation-based selection. It will be evaluated from the perspectives
- a) Is it aligned with the goals of the solicited Research Area? (Can the proposal be expected to contribute to fulfilling the purpose of the Research Area? Mainly, does the proposal correspond to items a. and b. in "(1) Selection Standards (Preliminary Evaluation Standards)" in Section 5.1.3, "Selection Perspective")
- b) Is it aligned with the goals of the CREST Program (Mainly, does the proposal correspond to the goal noted in c. in "(1) Selection Standards (Preliminary Evaluation Standards)" in Section 5.1.3, "Selection Perspective" for "Basic research that is unique, highly appreciated internationally, and expected to produce outstanding results that contribute greatly to science and technology innovation?")?

Therefore, in this form, provide a brief description that focuses on the details corresponding to Item 1, "Target and Objectives," of CREST Form 3 (Project Description), and provide the minimum explanation (corresponding to Items 2 to 6 of Form 3) required to understand your description above.

(The scientific/technical evaluation of the validity and feasibility of the Project Description will be considered mainly with CREST Form 3)

- A preliminary selection entailing a documentation-based selection for each Research Area may be held from the perspectives of a) and b) above.

Insert figures and tables (in color) appropriately to be undertaken clearly.

Do not exceed two A4-size sheets (no exceptions)

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| 2  | I | ict  | Λf | nrinci | nal | research    | naners / | invited | lectures |
|----|---|------|----|--------|-----|-------------|----------|---------|----------|
| 4. | L | 115t | UI | princi | Jai | i escai cii | papers/  | mvitcu  | icciuics |

- On no more than one A4-size sheet (no exceptions), list your principal research papers and invited lectures (If these instructions are not followed, the research proposal might not be accepted).
- Adjustment to font size and line spacing is acceptable.
- Do not include in your list works by Lead Joint Researcher(s).

#### (1) List of principal research papers

- From CREST Form 7, Item 1, select a maximum of 10 principal research papers by the research project applicant who will become the Research Director and list them here (Use the same description and format as from CREST Form 7, Item 1).
- Sequentially number each item with a number at the beginning of each title.

#### (2) List of principal invited lectures

- List a maximum of 10 principal invited lectures by the research project applicant who will become the Research Director.
- Sequentially number each item with a number at the beginning of each title.

Do not exceed one A4-size sheet (no exceptions)

(CREST-Form 3)

#### **Project Description**

- Clearly state the work to be undertaken. Figures and tables (in color) may be included if necessary.
- Do not exceed six A4-size sheets (no exceptions). Use 10.5 point or larger font size (If these instructions are not followed, the research proposal might not be accepted).
- In the Project Description, make effective references to the descriptions of achievements listed in Forms 7 and 8 to clarify the relationship between the achievement and the research being proposed by the research project applicant.

## 1. Target and Objectives

Describe specifically:

- Objectives and goals of the proposed research project (expected achievements), and
- Significance in terms of the impact on the advancement of science and technology, potential benefits to society and creation of innovation resulting directly from above mentioned achievement.

#### 2. Background

Describe scientific and technological needs, social demand and requests from economic and industrial interests, including the trends of the related fields to illustrate the importance and necessity of the proposed research project.

#### 3. Research Plans and Approach

Describe the plans of the proposed research project.

- Show the outline of the time schedule to demonstrate your vision and plan specifically, how to attain "1. Target and Objectives", while indicating milestones of research toward "1. Target and Objectives." Also, show clearly the goal to be achieved after 3 years from research start. This is one of the evaluation basis.
- Include probable challenges in accomplishing the objectives and goals and solutions for them.
- Questions and their solutions likely to be addressed for the achievement of "1. Target and Objectives." should be contained.
- It is possible to describe them per every research subject.
- Strategy to acquire intellectual property rights. Describe relevant intellectual property rights that the proposers own.

(Continued on the next page)

#### (CREST-Form 3 cont.)

(Continued from the previous page)

#### 4. Research infrastructure and preparation

Describe research background and achievements of the Research Director and other participants that are relevant to implement the proposed research project including the following information;

- Relevant projects conducted in the past and achievements of your own research efforts (and those of other research participants, if necessary)
- Other preliminary knowledge, data, etc. (if any)
- Measures taken to the item "d" in "2.2.7 Selection Perspective"

#### 5. Originality and novelty of the proposed research and comparison to current state of similar studies

Take into account the situation and trends of research in relevant fields, present originality and novelty of the proposed research project, and its advantages over others.

#### 6. Future Prospect of Research

Describe expected creation of science and technology innovation, creation of new industry, acquirement and enforcement of intellectual properties, contribution to society, etc., which are likely realized in the future, by success of the achievement of the "1. Target and Objectives" in the Project Description

Do not exceed six A4-size sheets (no exceptions)

(CREST-Form 4)

#### **Research Project Organization 1**

(Research framework at Research Director's Group)

#### Research Director's Group (example)

| Research<br>Director                  | Research Institution 1)                                   | Title        | Effort <sup>2)</sup> |
|---------------------------------------|---|--------------|----------------------|
| 00 00                                 | Department of ***, Graduate School of ***, *** University | Professor    | 40%                  |
| Research Participants <sup>3,4)</sup> | Affiliation (Omit if the same as above) <sup>5)</sup>     | Title        |                      |
| 00 00                                 |   | Professor    |                      |
| 00 00                                 |   | Associate Pr | ofessor              |
| 00 00                                 |   | Lecturer     |                      |
| ×× ××                                 | *** Laboratory, *** Co., Ltd.                             | Principal Re | searcher             |

- 1) If your research project is selected, but you will be performing the research at a facility different from your current affiliated institution, provide the name of the institution at which the research will be conducted. Also please provide us with information on the situation in the Note section below.
- 2) "Effort" indicates the percentage of time required by a researcher to engage in the research when his/her total annual work hours is 100%. "Total work hours" refers to the overall substantial work time including education, medical care and other activities and not only the time spent for research activities.
- 3) Provide sufficient consideration to the roles played by the members of your Research group.-
- 4) Add additional lines for research participants as necessary. If the research staff has not been finalized at the time of the proposal, a note like "Research staff of n persons" will suffice.
- 5) If the same research items must be performed at multiple organizations, feel free to add the members from the other organizations as research participants (Refer also to the Q&A).

#### Note

- When special duties (managerial positions, such as the dean, chairperson of an academic society, etc.) take working hours (effort), explain the situation and reason.

Research subjects and overview \*This item is prepared at the upper limit on page 2.

- · Title of research subjects in charge
- Overview

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Describe briefly an overview of the research subjects that the Research Director's Group will be in charge of.

# Role in the entire research project

Describe the role which the Research Director's group plays in realizing the proposed research project.

#### (CREST-Form 5)

# **Research Project Organization 2**

# (Research framework at the Joint Research Group)

- If a joint research group (joint research institution) other than the Research Director's affiliated institutions is required, list them in Form 5 (this form) per joint research institution.
- The joint research groups from various institutions such as industries, governments, and academia can be included in Research Director's team.
- Although there is no maximum limit of the number of the joint research groups, compose a necessary and sufficient number of groups for execution of Research Director's research idea. If Research Director does not play a leading role, or if assigned tasks of the joint research groups are not clear, the framework of team is inappropriate.
- Add or delete rows to/from the table as necessary for the number of groups.
- It is not mandatory to have joint research groups to the research team.
- Describe measures taken to the item "d" in "5.1.3 Selection Perspective"

# Joint Research Group (1)

# (Example)

| Lead Joint<br>Researcher                 | Joint Research Institution 1)                                | Title         | Effort <sup>2)</sup> |
|--|--|---------------|----------------------|
| 00 00                                    | *** Team, *** Department, *** Laboratory                     | Team          | 10%                  |
| Researcher ID No. 6 Institution Code 7): | 5).  | Leader        |                      |
| Research Participants <sup>3,4)</sup>    | <b>Affiliation</b> (Omit if the same as above) <sup>5)</sup> | Title         |                      |
| 00 00                                    |  | Principal Res | searcher             |
| 00 00                                    |  | Researcher    |                      |
| Will hire 2<br>research<br>participants  |  | Research Fel  | low                  |
| ×× ××                                    | *** Laboratory, *** Co., Ltd.                                | Principal Res | searcher             |

For 1) to 5), refer to the previous page.

- 6) Lead Joint Researchers shall write in ID number provided by Grant-in-Aid for Scientific Research <Kakenhi> or the e-Rad system, if any.
- 7) Lead Joint Researchers shall write in Institution No. of the e-Rad system, if any.

| <b>Research subjects and overview</b> *This item is prepared at the upper limit on page 2 | Research sub | jects and overview | *This item is | prepared at the up | pper limit on page 2 |
|---|--------------|--------------------|---------------|--------------------|----------------------|
|---|--------------|--------------------|---------------|--------------------|----------------------|

• Title of research subjects in charge

# • Overview

Describe briefly an overview of the research subjects that this joint research group will be in charge of.

# • Role in the entire research project and necessity

Describe the role which this joint research group plays in realizing the proposed research project.

(CREST-Form 6)

#### **Budget Plan**

- Prepare the budget plan and sort it by items and by groups for each year.
- A more detailed budget plan will be requested when the proposal proceeds to the interview.
- The budget plan, after adopted, may be revised during the research period according to the state of the project, Research Area policy, and project evaluation, etc.
- Organize an optimal research team with necessary and sufficient number of groups. Appropriateness of the budget allocations to the joint research groups, and cost performance will be an important consideration as a part of the selection process.
- Describe measures taken to the item "d" in "5.1.3 Selection Perspective"

# Research Budget plan by item (entire team)

#### (Example)

|                         | 1st Year | 2 <sup>nd</sup> Year | 3 <sup>rd</sup> Year | 4 <sup>th</sup> Year | 5 <sup>th</sup> Year | Final Year | Total    |
|-------------------------|----------|----------------------|----------------------|----------------------|----------------------|------------|----------|
|                         | (2017.10 | (2018.4              | (2019.4              | (2020.4-             | (2021.4-             | (2022.4-   | (Million |
|                         | -2018.3) | -2019.3)             | -2020.3)             | 2021.3)              | 2022.3)              | 2023.3)    | Yen)     |
| Equipment               | 20       | 40                   | 0                    | 0                    | 0                    | 0          | 60       |
| Materials /Consumables  | 20       | 40                   | 30                   | 30                   | 20                   | 20         | 160      |
| Travel                  | 1        | 2                    | 2                    | 2                    | 2                    | 1          | 10       |
| Personnel and Services  | 6        | 12                   | 12                   | 12                   | 12                   | 6          | (0)      |
| (Number of Researchers) | (2)      | (2)                  | (2)                  | (2)                  | (2)                  | (1)        | 60       |
| Other                   | 10       | 0                    | 0                    | 0                    | 0                    | 0          | 10       |
| Total (Million Yen)     | 57       | 94                   | 44                   | 44                   | 34                   | 27         | 300      |

Budgeted costs are itemized as follows:

Equipment: Cost for tangible properties with relatively expensive

Materials / Consumables: Cost for purchasing materials and consumables

Travel: Travel expenses of the Research Director or participants.

Personnel and Services: Personnel expenses and compensation for postdoctoral researchers, technicians, research assistants  $(RA^*)$ , etc.

\*As for RA, please refer to "5.2.4 Research Costs" and Q&A.

(Numbers of researchers): The number of researchers, technicians, and research assistants who are newly employed for the proposed research project

Other: Costs other than the above (e.g., printing, equipment lease, freight costs, etc.)

Please refer to "Q & A" regarding transferring sums to other budget item categories.

#### Note

- Be thoughtful in your budget allocation to optimize each item and ratios.
- When "Personnel and Services" exceeds 50% of the total budget, or when either of "Material/ Consumables" or "Travel" exceeds 30%, justify it by providing detailed cost estimation and additional information herein.
- If the total requested budget exceeds 500 million yen, describe the "needs for large budget" herein.

(Continued on the next page)

(CREST-Form 6 cont.)

(Continued from the previous page)

# Research Budget plan by group

Propose a most suitable research team that is necessary and adequate for bringing the research idea of the research representative into reality. When a joint research group is organized, the group must be necessary and essential for bringing a research idea into reality, and be able to make great contributions to achieving the research objectives.

|                      | 1st Year | 2 <sup>nd</sup> Year | 3 <sup>rd</sup> Year | 4 <sup>th</sup> Year | 5 <sup>th</sup> Year | Final Year | Total    |
|----------------------|----------|----------------------|----------------------|----------------------|----------------------|------------|----------|
|                      | (2017.10 | (2018.4              | (2019.4              | (2020.4-             | (2021.4-             | (2022.4-   | (Million |
|                      | -2018.3) | -2019.3)             | -2020.3)             | 2021.3)              | 2022.3)              | 2023.3)    | Yen)     |
| Research Director    |          |                      |                      |                      |                      |            |          |
| Group                | 20       | 40                   | 25                   | 25                   | 20                   | 15         | 145      |
| *** University       |          |                      |                      |                      |                      |            |          |
| Joint Research Group |          |                      |                      |                      |                      |            |          |
| (1)                  | 20       | 30                   | 10                   | 10                   | 5                    | 5          | 80       |
| *** University       |          |                      |                      |                      |                      |            |          |
| Joint Research Group |          |                      |                      |                      |                      |            |          |
| (2)                  | 17       | 24                   | 9                    | 9                    | 9                    | 7          | 75       |
| *** Laboratory       |          |                      |                      |                      |                      |            |          |
| Total (Million Yen)  | 57       | 94                   | 44                   | 44                   | 34                   | 27         | 300      |

# List of major equipment costing 5 million yen or more (item, estimated cost)

XXXXXX

(Example)

\*\*\* Group

XXXXXX 15 M Yen (Million Yen)
XXXXXX 5 M Yen
XXXXXX 10 M Yen

XXXXXX 7 M Yen

10 M Yen

\*\*\* Group

(CREST-Form 7)

#### List of Achievements (Research Director) / Ex-Post Evaluation Results (Research Director)

#### 1. Principal papers, books, and other publications related to this research proposal

- List a maximum of 20 principal papers, books, and other publications related to this research proposal, starting from the most recent to the past in reverse sequence of year of publication.
- Follow the format below when listing research papers (For books, adhere to this format). Item sequence is not fixed.

Place an asterisk (\*) at the beginning of the title of the papers referred in the Form 3.

Author(s) (all authors), title, title of journal/book, volume and page numbers, and published year.

#### 2. Research papers/publications other than the above

- In addition to 1 above, list a maximum of 20 principal papers, books, and other publications of the Research Director, starting from the most recent to the past in reverse sequence of year of publication.
- Follow the format below when listing research papers (For books, adhere to this format). Item sequence is not fixed.

Author(s) (all authors), title, title of journal/book, volume and page numbers, and published year.

- 3. Results of Post Evaluations of Research Project served as Principal Investigator of competitive research funding programs and so on (only those which were open to public after FY2012.)
  - Names of competitive research funding programs and so on, name of research projects and URLs of Post Evaluations

(CREST-Form 8)

# List of Achievements (Lead Joint Researcher(s))

- List selected publications of the Lead Joint Researcher, in reverse-chronological order, which are mainly considered to be relevant to the proposed research project and published in recent years. Do not exceed 10 papers for each Lead Joint Researcher.
- Follow the format below when listing research papers (For books, adhere to this format). Item sequence is not fixed.

Author(s) (all authors), title, title of journal/book, volume and page numbers, and published year.

| Chapter2_CREST |
|----------------|
| (CREST-Form 9) |

#### Patent list

# (Research Director and Lead Joint Researcher(s))



Application number, inventor, title of invention, applicant, and date of application

List important patent applications of recent years that are considered to be related to this proposal. Do not exceed one page.

· Research Director

• Lead Joint Researcher(s)

(CREST-Form 10)

#### Information on Other Supports

List grants from the government competitive research funds (including CREST, PRESTO and ACT-I) and any other research subsidies (including private foundations and overseas institutions) that the Research Director and/or Lead Joint Researchers are <u>currently receiving</u>, applying for, or planning to apply for by program name, indicating the title of project, research period, roles, amount of annual budget, and effort. Refer also to Section 8.3 "Measures against Unreasonable Duplication and Excessive Concentration."

#### (Note)

- Your entitlement to the JST funds may be cancelled at a later date even if you have been selected should your presentation fail to be accurate.
- If the results of applications for research grants become known, or if there are other changes in circumstances during the research proposal selection process that require that the information provided in this form be updated, please prepare a revised version of this form and send a message to the email address provided at the end of these requirements.
- Should you be selected for participation in the interview portion of the selection process, you may be asked to provide information on applications, plans, etc. submitted to other programs.

# (Example)

Research Director (Proposer): Name:

| Program   | Status    | Title of Project (Name of principal investigator) | Research<br>Period | Role (Principal Investigator or co-Principal Investigator) | (1) Allocated Budget<br>(For entire period)<br>(2) FY 2018 (planned)<br>(3) FY 2017 (planned)<br>(4) FY 2016 | Effort<br>(%) |
|---|-----------|---|--------------------|--|--|---------------|
| ALCA, JST Strategic Basic Research Programs                                 | Submitted | Achieving high performance in X by Y (** **)      | 2017.4 -<br>2023.3 | Co-Principal<br>Investigator                               | (1) 140 M yen<br>(2) 35 M yen<br>(3) 8 M yen<br>(4)  | 25            |
| Grants-in-Aid<br>for Scientific<br>Research,<br>Fundamental<br>research (S) | Awarded   | Creating W by V (** **)                           | 2014.4 -<br>2018.3 | PI   | (1) 100 M yen<br>(2) 25 M yen<br>(3) 25 M yen<br>(4) 5 M yen   | 20            |
|   |           |   |                    |  |  |               |

- List grants that the proposer is currently receiving, or selected, in descending order of amount of allocated budget (for the entire period). Then list those the proposer is currently applying for or planning to apply for (specify "submitted" or "preparing" in the column "Program").
- Type "Awarded" if it is currently awarded or decided to be awarded, and type "Submitted" for other status.
- Describe directorship or allocated work as "Role."
- Enter the amount of allocated budget (direct cost)."
- Enter "Effort" value of "Awarded" grants. <u>Describe effort for grants the proposer is currently receiving assuming that the CREST proposal is selected.</u>
- "Effort" indicates the percentage of time required by a researcher to engage in the research when his/her total annual work hours is 100%. "Total work hours" refers to the overall substantial work time including education, medical care and other activities and not only the time spent for research activities. (According to the definition set by Council for Science, Technology and Innovation).

  Do not enter efforts of the programs applying for, or planning to apply for. Enter only the efforts which is receiving or planning to receive on the assumption that only the CREST program is selected.
- Add rows if needed.

(Continued from the previous page)

| Lead Joint Researcher (1 | l): Name: |
|--------------------------|-----------|
|--------------------------|-----------|

| Program                                    | Status  | Title of Project (Name of principal investigator) | Research<br>Period | Role (Principal Investigator or co-Principal Investigator) | (1) Allocated Budget<br>(For entire period)<br>(2) FY 2018 (planned)<br>(3) FY 2017 (planned)<br>(4) FY 2016 | Effort (%) |
|--|---------|---|--------------------|--|--|------------|
| Health and Labuor Sciences Research Grants | Awarded | Real world research for Z development (** **)     | 2015.4 -<br>2019.3 | PI   | (1) 50 M yen<br>(2) 20 M yen<br>(3) 20 M yen<br>(4) 5 M yen  | 10         |
|  |         |   |                    |  | (1)<br>(2)<br>(3)<br>(4)   |            |

# Lead Joint Researcher (2): Name: \_\_\_\_\_

| Program                          | Status  | Title of Project (Name of principal investigator) | Research<br>Period<br>(fiscal<br>year) | Role (Principal Investigator or co-Principal Investigator) | (1) Allocated Budget<br>(For entire period)<br>(2) FY 2018 (planned)<br>(3) FY 2017 (planned)<br>(4) FY 2016 | Effort (%) |
|----------------------------------|---------|---|--|--|--|------------|
| X Foundation/Y<br>Research grant | Awarded | Aggressive research in the field of Y (** **)     | 2016.4 –<br>2019.3                     | PI   | (1) 2 M yen<br>(2) 0 yen<br>(3) 1 M yen<br>(4) 1 M yeb   | 15         |
|                                  |         |   |  |  | (1)<br>(2)<br>(3)<br>(4)   |            |

(CREST-Form 11)

#### Protection of Human Rights and Compliance with Laws and Regulations

- Describe the measures and actions that you will take if your research involves compliance with the related laws and regulations (e.g. research requiring the consent and the cooperation of the other party when implementing the research plan, research requiring consideration for the handling of personal information and research requiring efforts regarding bioethics and safety measures).
- This applies to surveys, research, experiments which require an approval procedure in an ethics committee inside and outside the research institution, such as for example questionnaire surveys in which personal information is involved, interview surveys, the use of provided samples, analysis study of the human genome, recombinant DNA experiments, experiments on animals, etc.
- Please indicate where this is not applicable.

(CREST-Form 12)

#### **References and Additional Statement**

#### · References

Provide the names of two (2) individuals who have good knowledge of your Research Project (non-Japanese person(s) are acceptable). Provide names of the reference person, institution and contact information (phone numbers and e-mail address). The evaluators (Research Supervisor and Research Area Advisors) may contact them regarding the research proposal during the screening process. Providing this reference information is not mandatory.

#### · Additional Statement

- In case this proposal is the second or the third one to the same research area, please state points of difference from the previous proposal.
- If participation of overseas joint research group(s) is planned, describe reasons and necessities (please refer to "2.2.4 Proposal Submission Requirements").
- Write why you are applying to the Strategic Basic Research Programs, your ambitions in your research, special awards that should be noted, plans to transfer and the reasons, and other information freely and as necessary. Do not exceed two A4-size sheets.

### 2.4 Interview participant documents completion requirements

Those selected for the interview phase will be asked to prepare these documents (selection interview/supplementary material). Interview participants will be notified with requests for the submission and information regarding the submission deadline.

After receiving the notice, please prepare the documents according to the completion requirements outlined in the following pages under "Selection interview/supplementary material."

\* The "Selection interview/supplementary material" section in the following pages may have different formatting depending on the research field. Please keep in mind that it is just an example.

#### Selection interview/supplementary material

- 1. Outline of research proposal
- 2. Research budget
- 3. Other support (Research Director, Joint Researcher)
- 4. Support in the past five years (Research Director, Lead Joint Researcher)
- 5. Research environment
- 6. Relationship with Research Supervisor
- 7. Overseas contract research
- 8. Concerning the effective utilization of the existing research facilities and equipment for the promotion of effective research and development

# Strategic Basic Research Program (CREST) 2017 Selection interview/supplementary material (example)

| Research Director name:  ***  *** | Affiliation/title: Professor, Department of ***, School of ***, *** University | Project ID: ****** |
|-----------------------------------|--|--------------------|
| Project name: *******             |  |                    |

# 1. Outline of research proposal

\* Please enter a summary of your research proposal, strictly within 200 characters, in language that could be understood by readers without expertise in the subject. In addition, please also prepare one slide with the summary including figures and photographs (slide font size approximately 12 pt). If selected, this summary will be used as reference material for the press release.

| 2  | Research     | hud | get |
|----|--------------|-----|-----|
| 4. | 1 COSCUI CII | Uuu | ΞUL |

- (1) Research period: October 2017– (Y) (M) (years)
  - The research period should be within five and a half years. Please note that the end of the research period could be stated as the end of the final fiscal year (if you have selected a five-year research period for this fiscal year, the research period could end, at the latest, on March 31, 2023).
- (2) Total research budget:
- research budget: million yen

  \* If the total research budget is over 500 million yen, please state the reasons and necessity behind the
  - \* If selected, you will not necessarily conduct research under the budget entered here.
- (3) Research budget by research group
  - Research Director Group

Research Director name (affiliation/title): \*\*\* \*\*\* (Department of \*\*\*, \*\*\*University)

| Tresearen Birecto                          | descared Director name (armation/title). (Department of , Oniversity |                                    |                                   |                            | 5103)                     |                                   |                           |
|--|--|------------------------------------|-----------------------------------|----------------------------|---------------------------|-----------------------------------|---------------------------|
|  | First FY (Oct.2017–3. 2018)  | <b>Second FY</b> (4.2018– 3. 2019) | <b>Third FY</b> (4.2019– 3. 2020) | Fourth FY (4.2020–3. 2021) | Fifth FY (4.2021–3. 2022) | Final FY<br>(4.2022 –<br>3. 2023) | Total<br>(By JPY<br>1000) |
| Equipment                                  |  |                                    |                                   |                            |                           |                                   |                           |
| Materials,<br>Consumables                  |  |                                    |                                   |                            |                           |                                   |                           |
| Travel<br>Expenses                         |  |                                    |                                   |                            |                           |                                   |                           |
| Personnel Expenses (number of researchers) | 0  | 0                                  | 0                                 | 0                          | 0                         | 0                                 |                           |
| Other<br>Expenses                          |  |                                    |                                   |                            |                           |                                   |                           |
| Total (by JPY 1000)                        |  |                                    |                                   |                            |                           | _                                 |                           |

# • Joint Researcher group (1)

Lead Joint Researcher name (affiliation/role): \*\*\* \*\*\* (\*\*\*Laboratory \*\*\* Center)

| Lead John Resear                           | onor name (a)                      | minution, role) | • (                               | Laboratory                  | Center                    |                                   |                           |
|--|------------------------------------|-----------------|-----------------------------------|-----------------------------|---------------------------|-----------------------------------|---------------------------|
|  | First FY<br>(Oct.2017–<br>3. 2018) |                 | <b>Third FY</b> (4.2019– 3. 2020) | Fourth FY (4.2020– 3. 2021) | Fifth FY (4.2021–3. 2022) | Final FY<br>(4.2022 –<br>3. 2023) | Total<br>(By JPY<br>1000) |
| Equipment                                  |                                    |                 |                                   |                             |                           |                                   |                           |
| Materials,<br>Consumables                  |                                    |                 |                                   |                             |                           |                                   |                           |
| Travel<br>Expenses                         |                                    |                 |                                   |                             |                           |                                   |                           |
| Personnel Expenses (number of researchers) | 0                                  | 0               | 0                                 | 0                           | 0                         | 0                                 |                           |
| Other<br>Expenses                          |                                    |                 |                                   |                             |                           |                                   |                           |
| Total (by JPY 1000)                        |                                    |                 |                                   |                             |                           |                                   |                           |

## • Joint Researcher group (2)

Lead Joint Researcher name (affiliation/role): \*\*\* \*\*\* (\*\*\* Laboratory, \*\*\*Co., Ltd.)

|  | First FY (Oct.2017–3. 2018) |   | <b>Third FY</b> (4.2019– 3. 2020) | Fourth FY (4.2020– 3. 2021) | Fifth FY (4.2021–3. 2022) | Final FY<br>(4.2022 –<br>3. 2023) | Total<br>(By JPY<br>1000) |
|--|-----------------------------|---|-----------------------------------|-----------------------------|---------------------------|-----------------------------------|---------------------------|
| Equipment                                  |                             |   |                                   |                             |                           |                                   |                           |
| Materials,<br>Consumables                  |                             |   |                                   |                             |                           |                                   |                           |
| Travel<br>Expenses                         |                             |   |                                   |                             |                           |                                   |                           |
| Personnel Expenses (number of researchers) | 0                           | 0 | 0                                 | 0                           | 0                         | 0                                 |                           |
| Other<br>Expenses                          |                             |   |                                   |                             |                           |                                   |                           |
| Total (by JPY 1000)                        |                             |   |                                   |                             |                           |                                   |                           |

## (4) About the research equipment/instruments

Please make sure to consider the shared use of research equipment and instruments at your institution, such as the "shared research equipment and instruments use program by research organization" (shared equipment use program), to be implemented under the "Shared use program of new research equipment/instruments merged with the research organization management" (November 2015, Science and Technology/Academic Evaluation Advanced Research Core Group). In particular, research equipment/instruments at universities or national research and development agencies with relatively large size and high versatility may be used according to the shared use programs of the applicable research institution/organization.

In light of the above,

1. Regarding the research equipment/instruments that are planned for purchase as indicated below, the individual submitting the research proposal should confirm that there is no overlap with usable equipment/instruments

(including shared use equipment/instruments) at the affiliated research institution (department, specialization, laboratory, research center, etc.).

2. At the beginning of the research (conclusion of contract research agreement), it is necessary to obtain prior written consent from those responsible for the equipment shared use program regarding the appropriateness of the equipment/instrument purchase plan in terms of shared equipment use at each affiliated institution. If no equipment sharing program is being implemented, please note that prior written consent is necessary from the individual responsible for the applicable contract research agreement.

| $\square$ I affirm that I have reviewed item 1.   |  |
|---|--|
| ☐ I affirm that I have read and understood item 2.  * Please check if you have reviewed and consent to the items above. |  |

Reference: 2.3.9 (3) Note

# (a) Major equipment planned for purchase (Over JPY 2M per item, equipment name, pricing (estimate))

| Equipment name | Pricing (unit; 1,000 JPY) | Installation location                | Planned purchase date |
|----------------|---------------------------|--------------------------------------|-----------------------|
| 000000         | 15,000                    | Department of ***,  ***University    | ****(Y) **(M)         |
| 000000         | 5,000                     | Department of ***, ***Univ ersity    |                       |
| 00000          | 10,000                    | ***Laboratory, ***Research<br>Center |                       |
|                |                           |                                      |                       |

(b) Appropriateness and necessity of planned purchases of equipment over JPY 10M per item

| Equipment name | Pricing (unit: 1,000 JPY) | Shared/<br>exclusive<br>use | Appropriateness, necessity, etc. (Note 1) |
|----------------|---------------------------|-----------------------------|---|
| 000000         | 15,000                    | Shared use                  | 000000                                    |
| 000000         | 10,000                    | Shared use                  | 000000                                    |
|                |                           |                             |   |

Note 1) Please detail why the specification and capacity of the equipment are necessary in relation to the research purpose/proposal. In the case of exclusive use, please add a detailed explanation of why the use of shared equipment/instruments or shared use with others is difficult.

<sup>\*</sup>Note: If affiliated with a research organization without existing equipment sharing programs, please coordinate with the research strategy officers or equipment and facilities departments at the university or research organization headquarters to introduce sharing programs.

Major equipment that can be used without new purchases

| Equipment name | Installation location              | Exclusive/shared use | Installed<br>FY | Notes |
|----------------|------------------------------------|----------------------|-----------------|-------|
| 000000         | Department of ***,  ***University  |                      |                 |       |
| 00000          | Department of ***, ***U niversity  |                      |                 |       |
| 000000         | ***Laboratory,  ***Research Center |                      |                 |       |
| 00000          | ***Laboratory,  ***Research Center |                      |                 |       |
|                |                                    |                      |                 |       |

(5) About researchers, etc.

Number of researchers, etc., to newly hire

|                        | No. of<br>People | Affiliated Institution  |
|------------------------|------------------|---|
| Researchers Note       | people           | 2 from Department of ***, ***University, 1 from ***Laboratory, ***Research Center |
| Technicians            | people           | 1 from Department of ***, ***University,  |
| Research<br>Assistants | people           | 1 from *** Laboratory, *** Co., Ltd.  |

Note 1) Please enter (6) below.

(6) Please enter the career path of the researchers that will be hired for this research after the conclusion of this research. Regarding young postdoctoral researchers, please describe the "activity plans for supporting diverse career paths," and refer to relevant sections in the application guidelines.

See relevant parts of the invitation information in 5.2.5(8) and 5.2.10(1)(2).

(7) Other

<sup>\*</sup> Please specify if spaces other than existing laboratories will be newly furnished and used.

- 3. Other support (Research Director, Lead Joint Researcher)
  - \* Please enter the research topic, time period, role, amount of grant funding received, difference and relation with proposed topic, efforts, etc., for each program, regarding the <u>national competitive aid programs (CREST/PRESTO included)</u> or other research grants (including private foundations and overseas institutions) that the Research Director and Lead Joint Researcher are <u>currently receiving or requesting/planning to request</u>. You may be asked to submit applications and research plans for other research grants. If the stated content differs from the actual situation, it is possible for the selected proposals to be cancelled at a later date.

<If there are any changes to the content from the time of creating Research Proposal CREST—Form 10, including acceptance decisions of research grant applications in progress, please update the content to reflect the most recent information.>

Research Director (Research Project Applicant): \*\*\* \*\*\*

| Name of the Program <sup>1)</sup>                                     | Status <sup>2)</sup> | Title of project<br>(name of principal<br>investigator) | Research<br>period   | Role 3) (princi pal investi gator or co- princip al investi gator) | (1) Allocated budget <sup>4)</sup> (for entire period) (2) " (FY 2018, planned) (3) " (FY 2017, planned) (4) " (FY 2016, results) | Difference/relation with proposed topic | Effort (%) <sup>5)</sup> |
|---|----------------------|---|----------------------|--|---|---|--------------------------|
| CREST Proposal Topic (*Please do not delete) 6)                       |                      |   | 10.2017–<br>3.2023   | Princip<br>al<br>Investi<br>gator                                  | (1) JPY 300M<br>(2) JPY 50M<br>(3) JPY 10M<br>(4) –   | _                                       | 20                       |
| Grants-in-Aid for Scientific<br>Research, Fundamental<br>research (S) | Awarde<br>d          | Creation of X by Y (****)                               | 4.2016–<br>3.2020    | Princip<br>al<br>Investi<br>gator                                  | (1) JPY 100M<br>(2) JPY 50M<br>(3) JPY 25M<br>(4) JPY 5M  | 000000000000000000000000000000000000000 | 10                       |
| ALCA, JST<br>Strategic Basic<br>Research<br>Programs                  | Submitt<br>ed        | Enhanced functionality of X by Y (****)                 | 10.2017 –<br>3. 2023 | Co-<br>Princip<br>al<br>Investi<br>gator                           | (1) JPY 140M<br>(2) JPY 35M<br>(3) JPY 8M<br>(4) -  | 000000000000000000000000000000000000000 |                          |
| 6)  |                      |   |                      | -  |   |   |                          |

## Chapter2 CREST

- 1) List grants that the proposer is currently receiving, or has been selected to receive, in descending order of amount in allocated budget (for the entire period). Then list those the proposer is currently applying for or is planning to apply for.
- 2) Type "Awarded" if it is currently awarded or decided to be awarded, and type "Submitted" for other status.
- 3) For "Role," please enter Principal Investigator or Co-Principal Investigator.
- 4) For "Allocated Budget," enter the amount of allocated budget (direct cost).
- 5) "Effort" indicates the percentage of time required by a researcher to engage in the research when his/her total annual work hours is 100%. "Total work hours" refers to the overall substantial work time including education, medical care, and other activities and not only the time spent on research activities (according to the definition set by Council for Science, Technology and Innovation). Do not enter efforts of the programs applied for, or planned to apply for. Enter only the efforts for which you are receiving or planning to receive on the assumption that only the CREST program is selected. Please ensure that the total CREST efforts, and any efforts such as grants currently being awarded, do not exceed 100%.
- 6) Add rows if needed.

Lead Joint Researcher (1): \*\*\* \*\*\*

| Name of the Program 1)                                  | Status <sup>2)</sup> | Title of project<br>(name of principal<br>Investigator) | Research<br>period      | Role 3) (princi pal investi gator or co- princip al investi gator) | (1) Allocated budget <sup>4)</sup> (for entire period) (2) " (FY 2018, planned) (3) " (FY 2017, planned) (4) " (FY 2016, results) | Difference/relation with proposed topic | Effort (%) <sup>5)</sup> |
|---|----------------------|---|-------------------------|--|---|---|--------------------------|
| CREST Proposal Topic (*Please do not delete) 6)         |                      |   | H10.<br>2017–<br>3.2023 | Co-<br>Princip<br>al<br>Investi<br>gator                           | (1) JPY 45M<br>(2) JPY 10M<br>(3) JPY 5M<br>(4) –   | _                                       | 10                       |
| Health and Labor Sciences Research Grants <sup>6)</sup> | Awarde<br>d          | Practical research for Z development (** **)            | 5.2016–<br>3.2020       | Princip<br>al<br>Investi<br>gator                                  | (1) JPY 50M<br>(2) JPY 20M<br>(3) JPY 20M<br>(4) JPY 5M   | ************                            | 35                       |

For Notes 1) to 6), please refer to the Research Director section on the previous page.

Lead Joint Researcher (2): \*\*\* \*\*\*

| Name of the Program <sup>1)</sup> | Status <sup>2)</sup> | Title of project<br>(name of principal<br>Investigator) | Research<br>period | Role 3) (princi pal investi gator or co- princip al investi gator) | (1) Allocated budget <sup>4)</sup> (for entire period) (2) " (FY 2018, planned) (3) " (FY 2017, planned) (4) " (FY 2016, results) | Difference/relation with proposed topic | Effort (%) <sup>5)</sup> |  |
|-----------------------------------|----------------------|---|--------------------|--|---|---|--------------------------|--|
|-----------------------------------|----------------------|---|--------------------|--|---|---|--------------------------|--|

# Chapter2\_CREST

| CREST Proposal Topic (*Please do not delete) 6) |             |  | H10. 2017<br>-3.2023 | Co-<br>Princip<br>al<br>Investi<br>gator | (1)<br>(2)<br>(3)<br>(4) | JPY 45M<br>JPY 10M<br>JPY 5M         | _                                      | 10 |
|---|-------------|--|----------------------|--|--------------------------|--------------------------------------|--|----|
| X Foundation/Y<br>Research grant                | Awarde<br>d | An ambitious research into field X (***) | 4.2016 –<br>3.2018   | Princip<br>al<br>Investi<br>gator        | (1)<br>(2)<br>(3)<br>(4) | JPY 2M<br>JPY 0M<br>JPY 1M<br>JPY 1M | ************************************** | 35 |
| 6)  |             |  |                      |  |                          |                                      |  |    |

For Notes 1) to 6), please refer to the Research Director section on the previous page.

4. Support in the past five years (Research Director, Lead Joint Researcher)

indicate grants that have completed between April 2012 and March 2017.

\*Please specify the research topic, time period, role, amount of grant funding received, etc., for each <u>national competitive aid program or grants from other</u>
research grant programs that the Research Director and Lead Joint Researcher <u>have received in the past five years with a research budget of over JPY 50M (for the entire period).</u> If the stated content is falsified, it is possible for the selected proposals to be cancelled at a later date.

The national competitive aid program or grants from other research grant programs refer to awards given prior to grants listed in "3. Other Support" and

Research Director (Research Project Applicant):

|  |                  |           |                                   | Role <sup>3)</sup> (principal | Recipient           |
|--|------------------|-----------|-----------------------------------|-------------------------------|---------------------|
|  | Title of Project | Research  | Allocated budget                  | investigator                  |                     |
| Program 1)                             |                  | period    | (for entire period) <sup>2)</sup> | or                            |                     |
|  |                  |           |                                   | co-principal                  |                     |
|  |                  |           |                                   | investigator)                 |                     |
| Grants-in-Aid for Scientific Research, |                  | 2009–2013 | JPY 100M                          | Principal                     |                     |
| Fundamental research (S)               |                  | 2009-2013 | J1 1 1001VI                       | Investigator                  | (Research Director) |
| Grants-in-Aid for Scientific Research, |                  | 2010–2014 | JPY 52M                           | Co-Principal                  | IJ                  |
| Fundamental research (A)               |                  | 2010–2014 | J1 1 321VI                        | Investigator                  |                     |
| Health and Labor Sciences Research     |                  | 2009–2014 | JPY 50M                           | Principal                     | (Lead Joint         |
| Grants                                 |                  | 2009-2014 | J1 1 J01V1                        | Investigator                  | Researcher)         |
| Promotion of Science and Technology    |                  | 2010–2015 | JPY 50M                           | Co-Principal                  | (Lead Joint         |
| Adjustment Cost                        |                  | 2010-2013 | J1 1 JUIVI                        | Investigator                  | Researcher)         |

- 1) List grants that were awarded in the past five years in descending order of amount of allocated budget (for the entire period).
- 2) Regarding "Allocated Budget (for entire period)," enter the amount that was awarded to the recipient.
- 3) For "Role," please enter Principal Investigator or Co-Principal Investigator.

# 5. Research environment (Research Director)

\* Please include all personnel who are affiliated with the <u>same</u> place of research (lecture, laboratory, research group, etc.) <u>as the Research Director.</u>

| Title 1)                        | Number of personnel | Number of research participants |
|---------------------------------|---------------------|---------------------------------|
| Professor                       |                     |                                 |
| Associate Professor             |                     |                                 |
| Assistant Professor             |                     |                                 |
| Researcher (Postdoctoral, etc.) |                     |                                 |
| Technician                      |                     |                                 |
| Research Assistant              |                     |                                 |
| Graduate Students (Doctoral)    |                     |                                 |
| Graduate Students (Master)      |                     |                                 |
| Undergraduate Students          |                     |                                 |
| Other (Visiting, etc.)          |                     |                                 |

<sup>1)</sup> Please enter the title according to the affiliated personnel organization. In addition, please include the number of affiliated students.

# 6. Relationship with Research Supervisor

Although we have already received confirmation on the relationship with the Research Supervisor during the proposal submission process, please double-check that the relationships below do not exist.

If there is even one item among items a–d below that seems ambiguous, please contact us beforehand. Contact: rp-info@jst.go.jp

| Item | Content  | Items to check |
|------|--|----------------|
| a    | The Research Supervisor is a relative.   | N/A □          |
| b    | The research project applicant and the Research Supervisor are both affiliated with (1) the same smallest organizational unit (e.g., same research lab) of a national university or other national government-funded research and experiment institution or (2) the same company.  | N/A □          |
| С    | The research project applicant and the Research Supervisor (1) are presently working in close cooperation on the same joint research project or (2) have done so within the past five years.  (For example, the research project applicant and the Research Supervisor are working together on the same research project, are performing different parts of the same research project, or are coauthors of a research paper. This is determined on a case-by-case basis, so please contact us if there is anything ambiguous.)                                       | N/A □          |
| d    | The research project applicant and the Research Supervisor were in a close teacher–student relationship for a total of more than ten years (not necessarily continuous) or were in a direct employer–employee relationship. "Close teacher–student relationship" refers to cases in which the research project applicant and the Research Supervisor were affiliated with the same research lab and cases in which the Research Supervisor, though affiliated with a different lab, essentially functioned as a research advisor for the research project applicant. | N/A □          |

#### 7. Overseas contract research

If the research team will include overseas research institutions, please confirm that the overseas institution fulfills the requirements below, due to contractual reasons (as a general rule, no contract will be concluded if these requirements cannot be accepted). Please review the requirements below, and take the appropriate measures to provide a prior explanation and receive prior agreement from the overseas institution.

If no "agreement" is acquired at the time of submission of this "Supplemental Document," it is possible that changes to the research plan may be requested on the day of the interview or at the time you become a candidate for selection.

| Contractual requirements that must be confirmed beforehand   | Application requirements | Contract template (*1) DRAFT version    | Check<br>box |
|--|--------------------------|---|--------------|
| In principle, the overseas research institution can enter into agreements in forms specified by JST. | 5.2.6(2)a                | All Articles<br>(including<br>APPENDIX) | Agree        |

| The overseas research institution is required to transfer, free of charge, intellectual property rights to JST. (Article 19 of the Industrial Technology Enhancement Act (Japanese version of the Bayh–Dole Act) does not apply to overseas research institutions). | 5.2.6(2)c  | Article 9.1                 | Agree |
|---|------------|-----------------------------|-------|
| Payments to the overseas research institution for overhead costs (indirect costs) are not to exceed 30% of the research budget.   | 5.2.6 (2)a | Article 5.3                 | Agree |
| The overseas institution must be able to properly execute the budget according to JST's budget execution policy if such a policy has been specified by JST.   | 5.2.6 (2)b | Articles 4–6,<br>APPENDIX 5 | Agree |
| The overseas institution must be able to submit to JST a detailed statement of research expenses prepared in English.   | 5.2.6 (2)b | Articles 6.2.1,<br>APPENDIX | Agree |
| Report to JST swiftly (within 10 workdays) when an invention qualified for intellectual property right is achieved.   | 5.2.6 (2)c | Articles 9.2,<br>APPENDIX6  | Agree |

- o Application requirements—http://www.senryaku.jst.go.jp/teian/koubo/h29youkou.pdf
- Application requirements (English)—http://www.senryaku.jst.go.jp/teian/en/koubo/h29youkou\_en.pdf
- Joint research contract JST format—http://www.jst.go.jp/kisoken/presto/en/2017presto/index.html

# 8. Efficient promotion of research and development through effective use of currently available research facilities and equipment

The Ministry of Education, Culture, Sports, Science and Technology is promoting the development of the grounds for sharing research institutes and facilities and integrating different research fields in accordance with the Act on the Promotion of Public Utilization of the Specific Advanced Large Research Facilities (Act No. 78, 1994); the Act on Enhancement of Research and Development Capacity and Efficient Promotion, etc., of Research and Development, etc., by Advancement of Research and Development System Reform (Act No. 63, 2008); and other laws. If the uses and purchases of research facilities and equipment are being considered upon the application, please consider actively using facilities and equipment owned by universities and national research and development agencies and made available to others and opportunities for cooperation among industries, academia, and the government from the perspective of effective promotion of consigned research in this program; effective use of already available facilities and equipment; and removing overlaps in purchasing facilities and equipment.

In addition, universities etc. are requested to actively promote sharing research facilities in research projects funded by competitive research funds. Please refer to 5.2.10 (3) in the application guidelines for details.

## < Reference: Examples of shared facilities and equipment>

Facilities covered in the Act on the Promotion of Public Utilization of the Specific Advanced Large Research Facilities (Please refer to the instructions from each facility for schedule of project proposal and other information related to utilization)

SPring-8, the large synchrotron radiation facility (Applications are accepted around May and November every year.)

http://user.spring8.or.jp/?lang=en

SACLA, an X-ray free-electron laser facility (Applications are accepted around May and November every year.) http://sacla.xfel.jp/?lang=en J-PARC, a large intensity proton accelerator (Applications are accepted around May and October every year.) http://is.j-parc.jp/uo/index e.html

High Performance Computing Infrastructure (HPCI) including the K computer

http://www.hpci-office.jp/folders/english

Projects for promoting the sharing of advanced research facilities

\*See URL below for information on this project, which started in the 2016 fiscal year. See also the URL below for information on "Platform Formation Project for a Joint Use of Base Technologies in Advanced Research," which was completed in the 2015 fiscal year.

http://www.mext.go.jp/a\_menu/kagaku/shisetsu/index.htm

Nano technology platform

http://nanonet.mext.go.jp/english/

Development of research base network toward the construction of a low-carbon society

http://www.nims.go.jp/lcnet/

Tsukuba Innovation Arena for Nanotechnology (TIA-nano)

https://www.tia-nano.jp/en/index.html

Project for Platform for Drug Discovery, Informatics, and Structural Life Science (four bases)

http://pford.jp/

National BioResource Project

http://www.nbrp.jp/

Japanese Experiment Module (KIBO) / International Space Station (ISS)

http://iss.jaxa.jp/kiboexp/participation/