

# **KAKENHI Writing Seminar**

Telling your research story effectively

KAKENHI overview and evaluation system

Writing tips for early-stage researchers



## Organizers & audience of this program

### WPI-ASHBi & WPI-iCeMS

both part of the WPI Institutions in Kyoto University







# This seminar is open to Kyoto University members & non-Kyoto University members

WPI requires the WPI institutions to share their knowledge with other Japanese institutions

### Research Acceleration Unit at WPI-ASHBi

We aim to support research acceleration of early-stage researchers in Japan



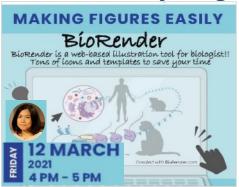
Tadashi Ogawa Professor



Tomoki Shimizu (center)
Junior Associate Professor

Makoto Shida (left) University Research Administrator

**Hiromi Inoue** (right) Research Coordinator



Mar 12, 2021
Illustration
Introduction of useful tool
for making figures in biology



Jun 25, 2021 Press Release

How to make & share your research achievements globally

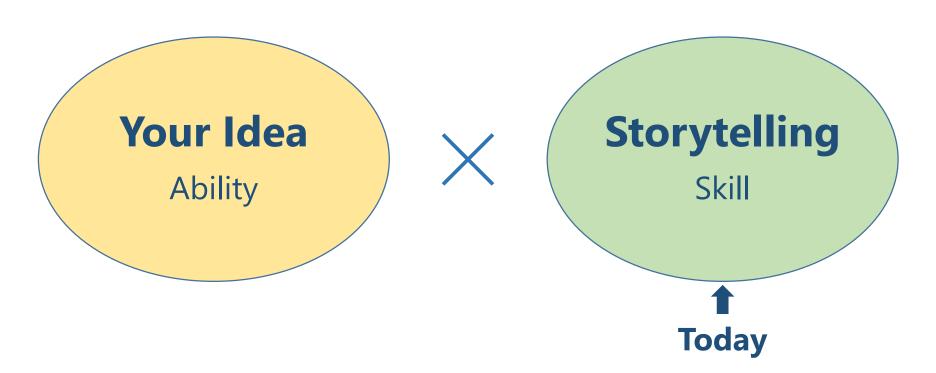


Jul 30, 2021 (today) **Grant Writing** 

How to tell your research effectively in your grant proposal

# [Key message] Convincing your research plan to the reviewers!

### Important factors of proposal



# KAKENHI Writing Seminar

Partl



KAKENHI overview & evaluation system

Part 2



Writing tips for early-stage researchers

# Agenda: KAKENHI Writing Seminar

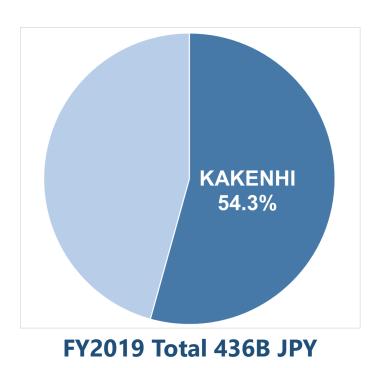
- 1. Overview & Proposal Format
- 2. Evaluation System (Kiban C & Wakate)
- 3. Preparing an Effective Proposal

# Agenda: KAKENHI Writing Seminar

- 1. Overview & Proposal Format
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### KAKENHI is your main research funding in Japan

# Government Research Funding



White Paper on Science and Technology 2019, MEXT

### **KAKENHI** Kiban Categories

Category	Duration	Grant Size
Kiban S	5Y	JPY 50 – 200M
Kiban A	3 – 5Y	JPY 20 – 50M
Kiban B	3 – 5Y	JPY 5 – 20M
Kiban C	3 – 5Y	≦JPY 5M
Wakate (Early Career)	2 – 5Y	≦JPY 5M

+ other special categories

KAKENHI web: https://www.jsps.go.jp/english/e-grants/grants01.html

## Category suitable for Early-Career Scientists

Category	<b>Kiban C</b> (Scientific Research C)	<b>Wakate</b> (Early Career)
Eligibility	None	< 8 years after PhD acquisition
Project duration	3 – 5 Y	2 – 5 Y
Grant size (total amount)	≦JPY 5M	≦JPY 5M
Allocation Rate (% of proposed amount)	FY2019 <b>66.9</b> %	fy2019 <b>64.9</b> %
Success rate (FY2019)	FY2020 28.4% FY2019 28.2%	FY 2020 40.1% FY2019 40.0%

### Application Format: Kiban C & Wakate

#### Note: The format below is FY2021. See next page for the new format!

Part 1
Executive Summary,
Objectives, Method,
"Key Scientific Question", etc.



Part 2
Research history, research field trends, etc.

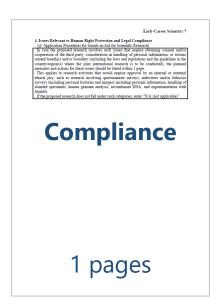


Part 3
Past achievements/honors, research environment, team,



Part 4

Human Right Protection, Legal Compliance etc.

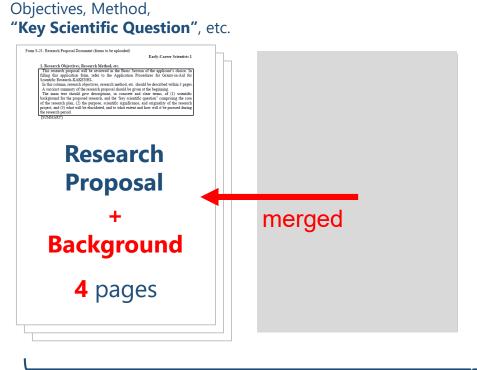


Total 7 pages

We will mention about "Key Scientific Question" in chapter 3

### [NEW] FY2022 Application Format: Kiban C & Wakate

#### The contents for Part 2 in the past has been merged to Part 1 in FY2022!



Part 1

Executive Summary,

#### Part 2

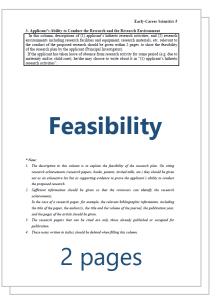
Past achievements/honors, research environment, team,

etc.

#### Part 3

Human Right Protection, Legal Compliance etc.

Early-Career Scientists





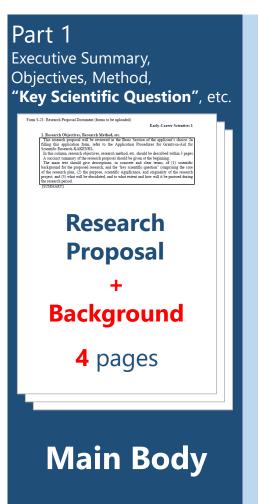
1 pages

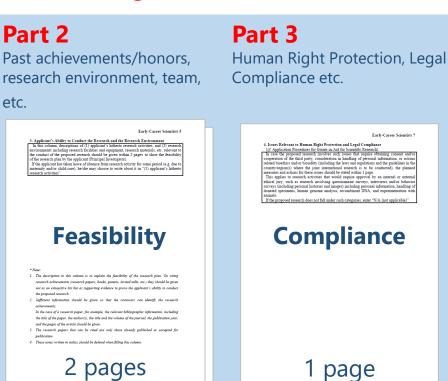
Total 7 pages

We will mention about "Key Scientific Question" in chapter 3

### [NEW] FY2022 Application Format: Kiban C & Wakate

The contents for Part 2 in the past has been merged to Part 1 in FY2022!





**Supporting Evidences** 

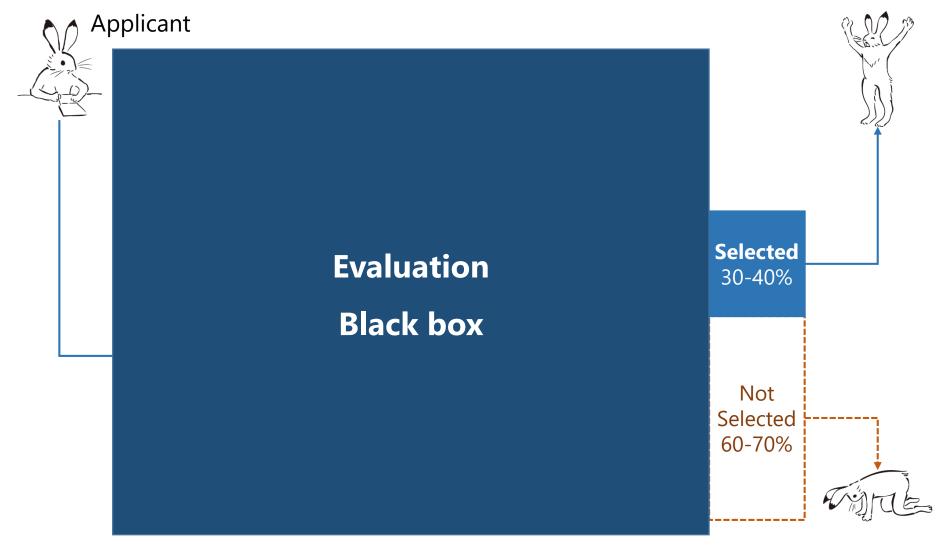
# Agenda: KAKENHI Writing Seminar

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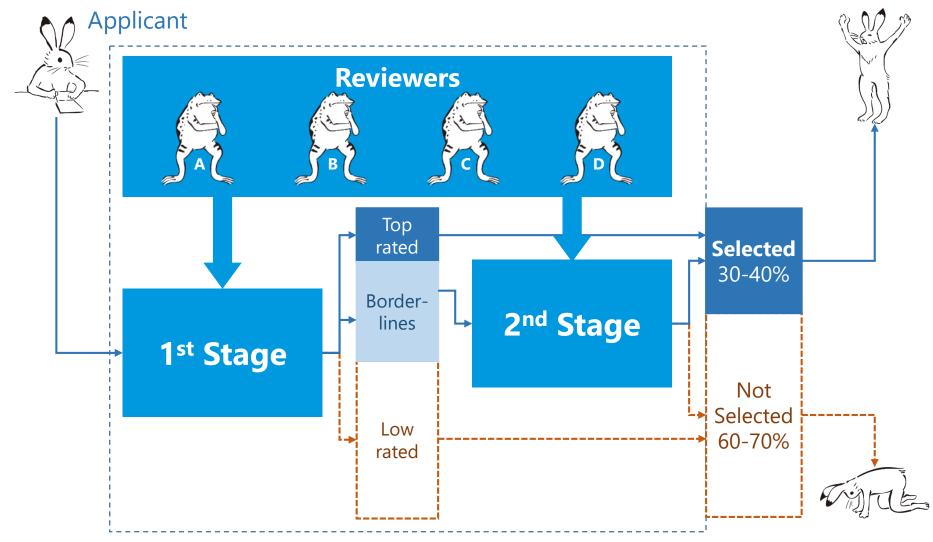
Rabbit & Frog Icons: <a href="https://chojugiga.com/">https://chojugiga.com/</a>

### Evaluation system: A black box?



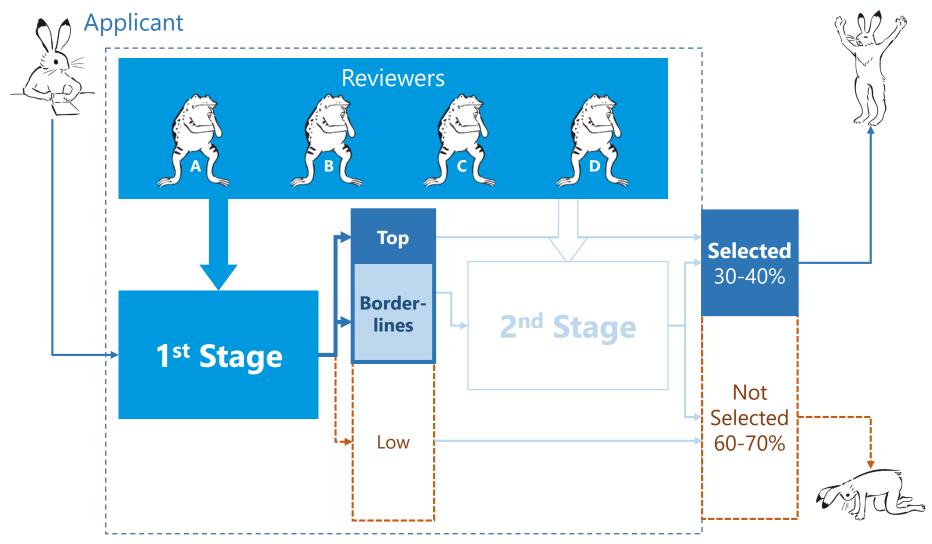
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### Evaluation system: A black box?



Rabbit & Frog Icons: <a href="https://chojugiga.com/">https://chojugiga.com/</a>

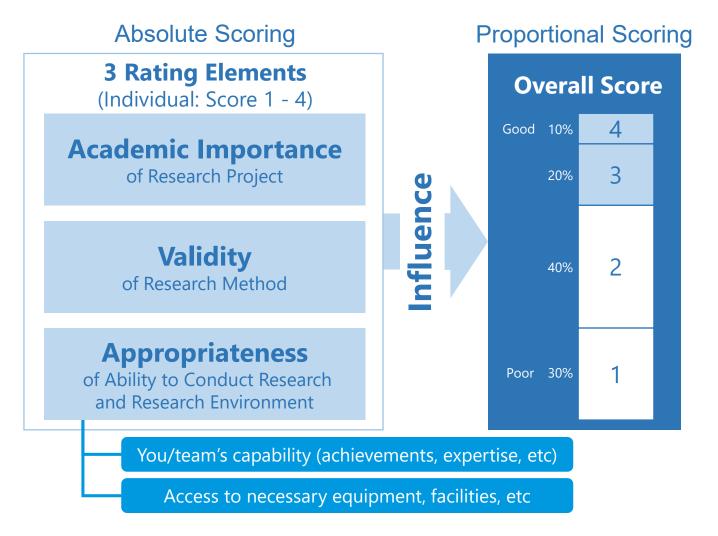
### How #1: The evaluation in the 1st stage



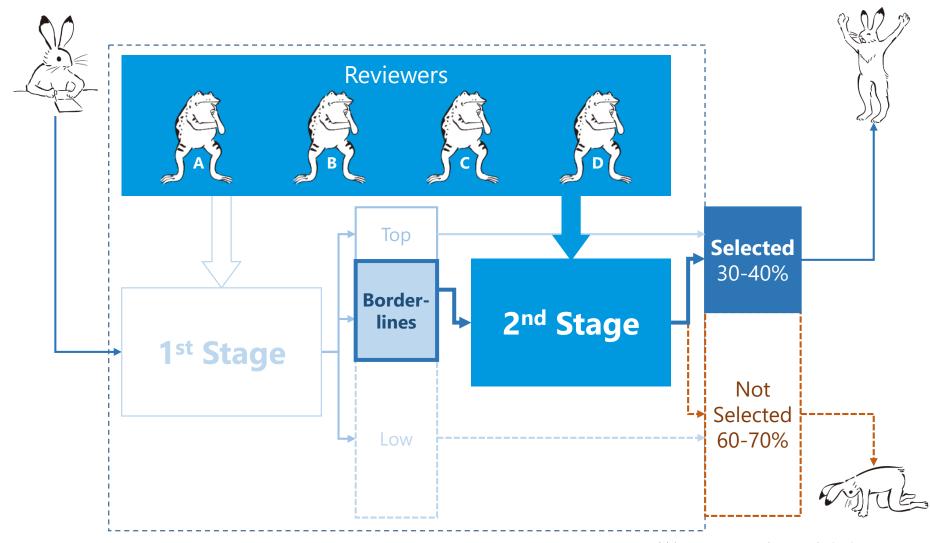
Rabbit & Frog Icons: <a href="https://chojugiga.com/">https://chojugiga.com/</a>

### 1st stage: Sorting applications using the "overall score"

### Reviewers must mark 2 type of scores



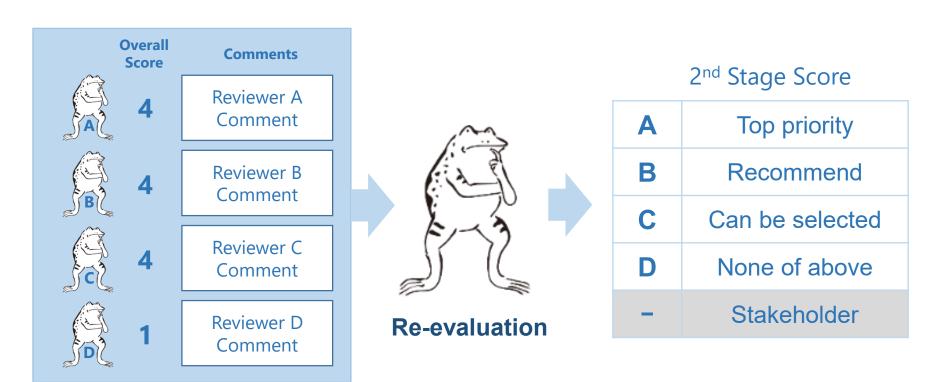
### How #2: The evaluation in the 2<sup>nd</sup> stage



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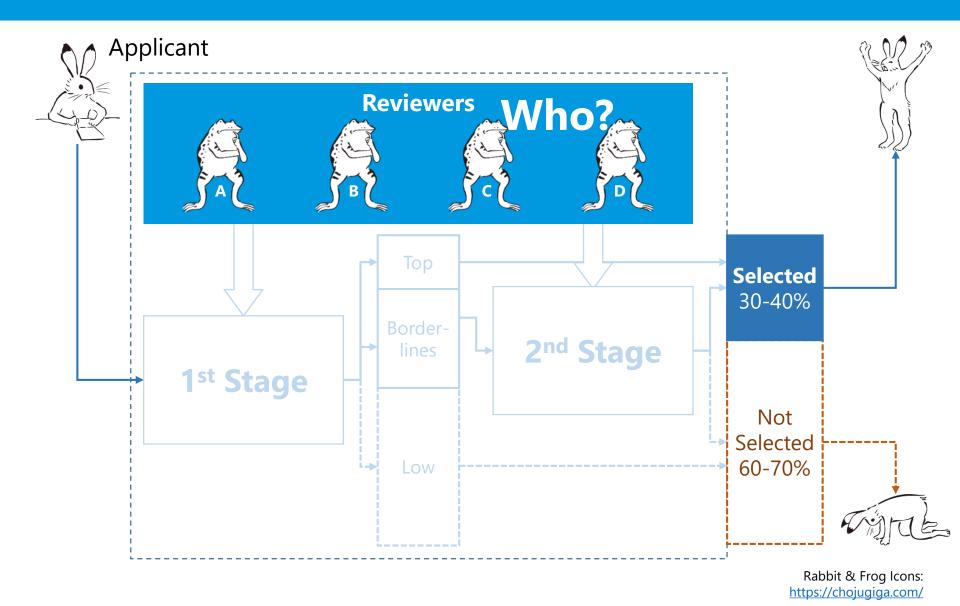
### 2<sup>nd</sup> stage: Re-evaluation using scores & comments of others

# In 2<sup>nd</sup> stage, <u>each</u> reviewer receives 1<sup>st</sup> stage scores & comments of <u>ALL 4</u> reviewers



Frog Icons: <a href="https://chojugiga.com/">https://chojugiga.com/</a>

### Who are your Reviewers?



### Select your reviewer section wisely to receive appropriate evaluation

Broad section A-K
Medium sized section 01-64
(in total, 306 Basic Sections)

#### Broad Section G

Medium-sized Section 43: Biology at molecular to celluand related fields

	Basic Section	
43010	Molecular biology-related	
43020	Structural biochemistry-related	
43030	Functional biochemistry-related	
43040	Biophysics-related	
43050	Genome biology-related	
43060	System genome science-related	

Medium-sized Section 44: Biology at cellular to organis

past reviewers can be found at KAKENHI website (Japanese only)
<a href="https://www.jsps.go.jp/j-grantsinaid/14">https://www.jsps.go.jp/j-grantsinaid/14</a> kouho/meibo.html







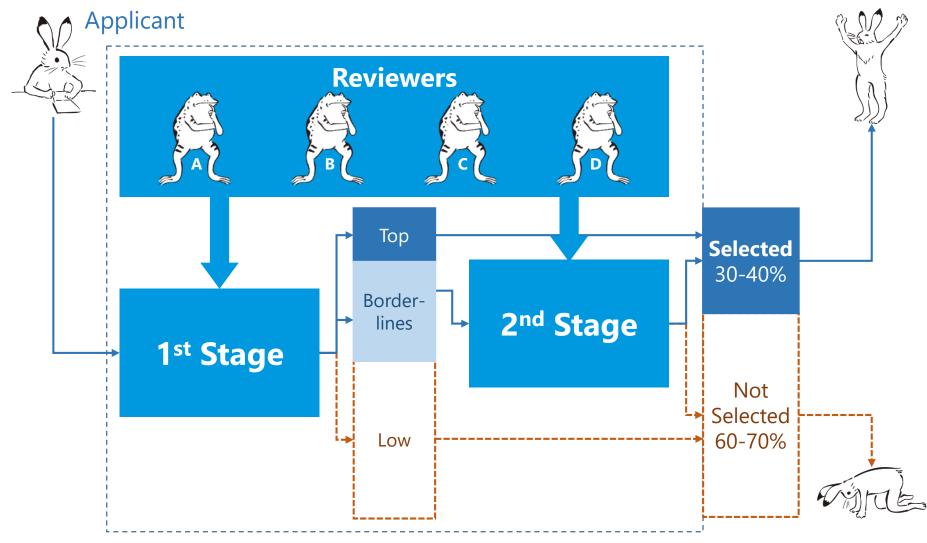




https://www.jsps.go.jp/english/e-grants/data/09/2022/review\_section\_table\_e.pdf

Rabbit & Frog Icons: <a href="https://chojugiga.com/">https://chojugiga.com/</a>

### Evaluation system: Same 4 reviewers evaluating in 2 stages



Rabbit & Frog Icons: <a href="https://chojugiga.com/">https://chojugiga.com/</a>

# Agenda: KAKENHI Writing Seminar

- 1. Overview & Proposal Format
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Rabbit & Frog Icons: https://chojugiga.com/

### Preparing an Effective Proposal: Effective storytelling

**Effective Storytelling is essential** in making the reviewer to resonate with your story.

Before you start writing, please take time in developing your storytelling strategy!

### Storytelling: What must be fulfilled in a proposal?



Your point of view



You need a reviewer's point of view!

Rabbit & Frog Icons: https://chojugiga.com/

### Storytelling: What must be fulfilled in a proposal?





Reviewer

Your point of view

Specific Problem that you want to tackle

Your Solution (Unique & solid)

Reviewer's point of view

Academic Importance

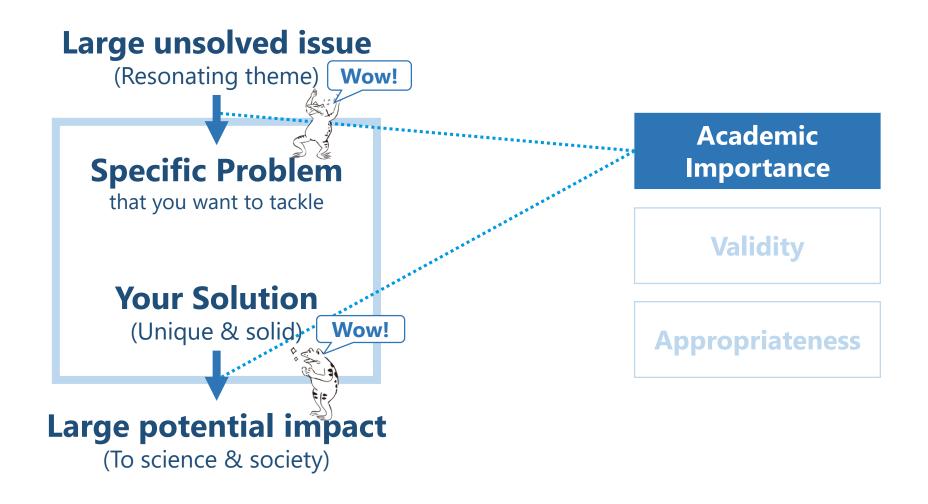
**Validity** 

**Appropriateness** 

### **Need to satisfy both components!**

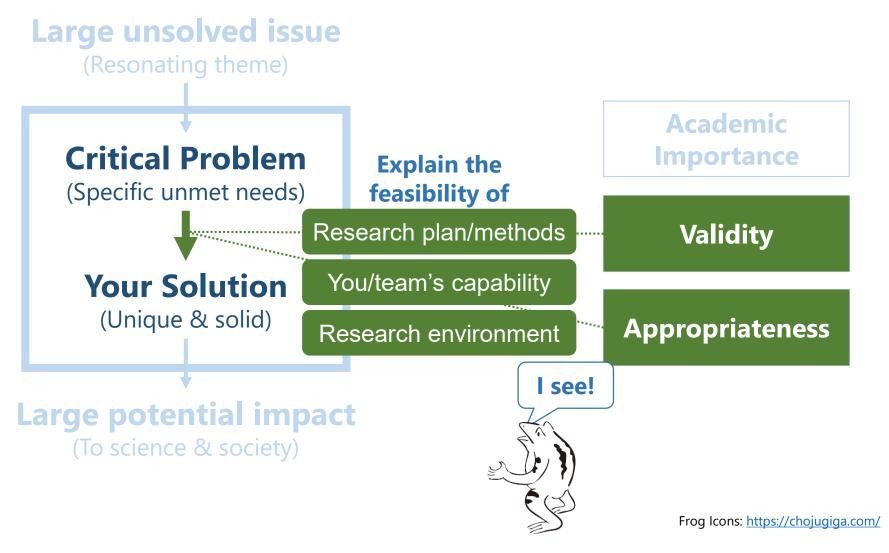
Rabbit & Frog Icons: <a href="https://chojugiga.com/">https://chojugiga.com/</a>

### Academic Importance: Address why people should listen to you

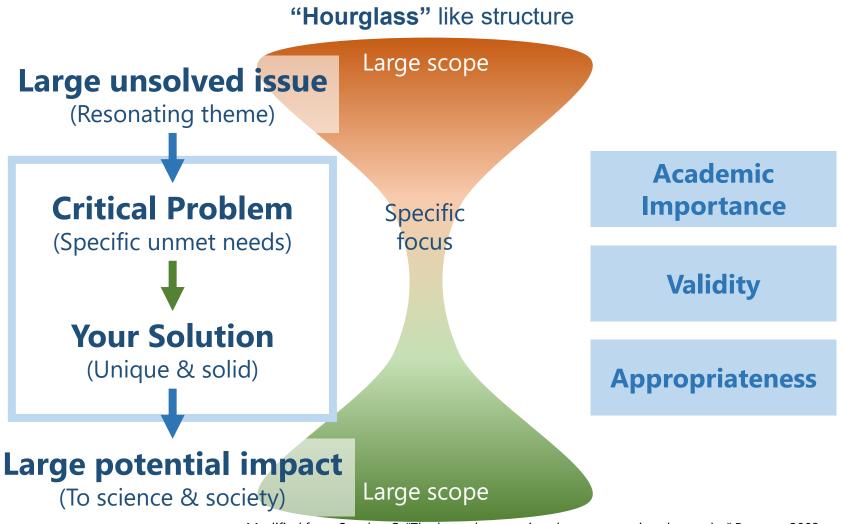


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### Validity & Appropriateness: Address why your plan is feasible



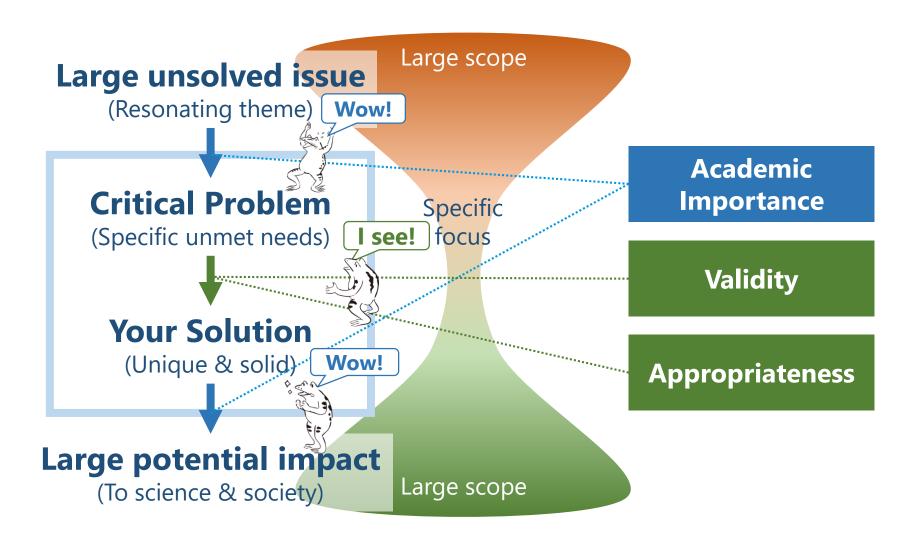
### Storytelling: Storyline structure to explain both views



Modified from Scanlan C, "The hourglass: serving the news, serving the reader" Poynter, 2003 <a href="https://www.poynter.org/reporting-editing/2003/the-hourglass-serving-the-news-serving-the-reader/">https://www.poynter.org/reporting-editing/2003/the-hourglass-serving-the-news-serving-the-reader/</a>

Use the "Large-Specified-Large" scope to make your story

### Convince your 3 Elements through 2 "Wow!"s & 1 "I see!"



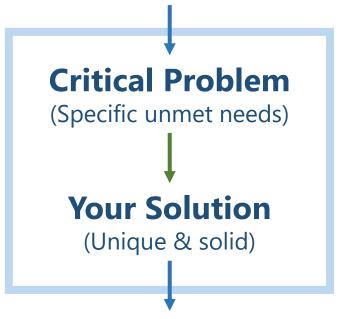
Frog Icons: <a href="https://chojugiga.com/">https://chojugiga.com/</a>

### What is the "Key Scientific Question" in your application?

KAKENHI requests you to describe the "Key Scientific Question" in your application

### Large unsolved issue

(Resonating theme)



Large potential impact

(To science & society)

Academic Importance

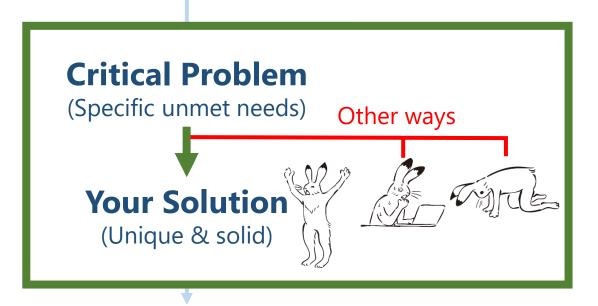
**Validity** 

**Appropriateness** 

### What is the "Key Scientific Question" in your application?

### Large unsolved issue

(Resonating theme)



Academic Importance

**Validity** 

**Appropriateness** 

### Large potential impact

(To science & society)

Modified from Ogawa T, "My experience as a reviewer" KAKENHI Preparation in Advance, 2018

Rabbit Icons: <a href="https://chojugiga.com/">https://chojugiga.com/</a>

Make a question with an answer in which **your way is "the only way"** by showing **"why other ways don't work"** 

### Useful tips in preparing an effective proposal

Tip #1: Use an Outline Framework

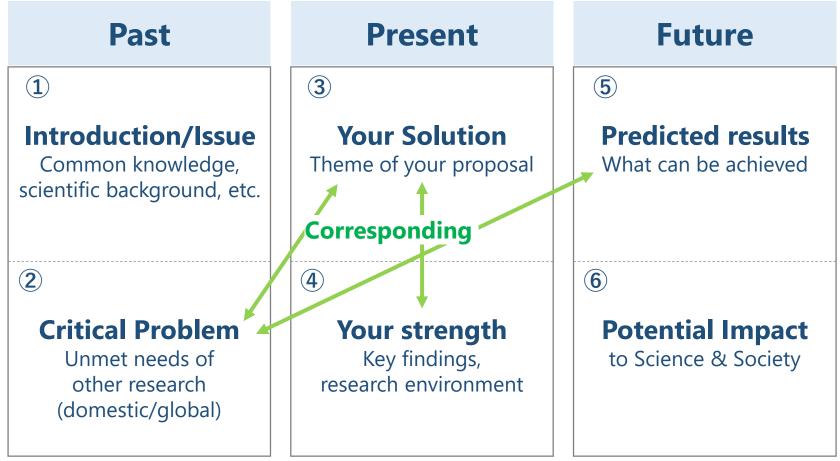
Tip #2: Grant Writing is different from Academic Writing

Tip #3: Use "Easy-to-understand Format & Language"

Tip #4: Obtain Third Person's View via Feedback

### Tip #1: Use an outline framework

### Sample of an Outline Framework



Modified from Ono E, "科研費研究計画調書のグラフィックデザイン" K-CONNEX Seminar, 2017

Check to see if you have "every component" in your story

### Tip #2: Grant Writing is different from Academic Writing

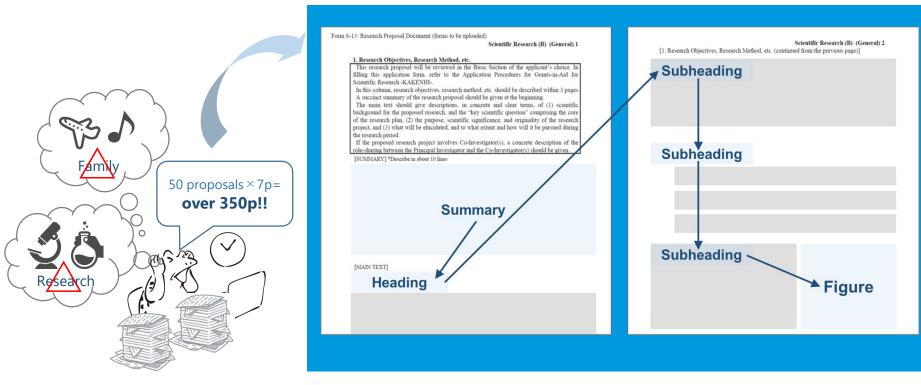
### What you need to convey is different

**Academic Writing Grant Writing** VS Past oriented **Future oriented** Work that has been done Work that should be done Theme-centered **Project-centered** Objectives and activities Theory and thesis Few length constraints **Strict length constraints** Brevity rewarded Verbosity rewarded Specialized terminology **Accessible Language** "Insider jargon" Easily understood

Modified from Porter R, "Why Academics Have a Hard Time Writing Good Grant Proposals" The Journal of Research Administration, vol 38, 2, 2007

In Grant Writing, you need to sell "your future plan"

### Tip #3: Use "Easy-to-understand Format & Language"





Wow! I can understand quickly!

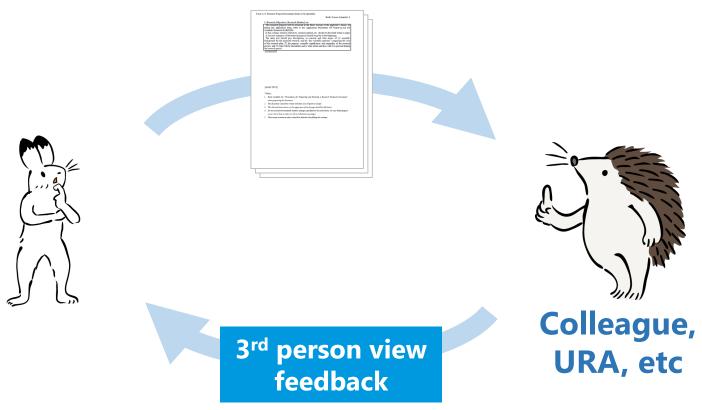
Modified from Ogawa T, "My experience as a reviewer" KAKENHI Preparation in Advance, 2018

Frog Icons: <a href="https://chojugiga.com/">https://chojugiga.com/</a>

Effective placement of summary, headers and figures will help reviewers capture the story at a glance

### Tip #4: Obtain Third Person's View via Feedback

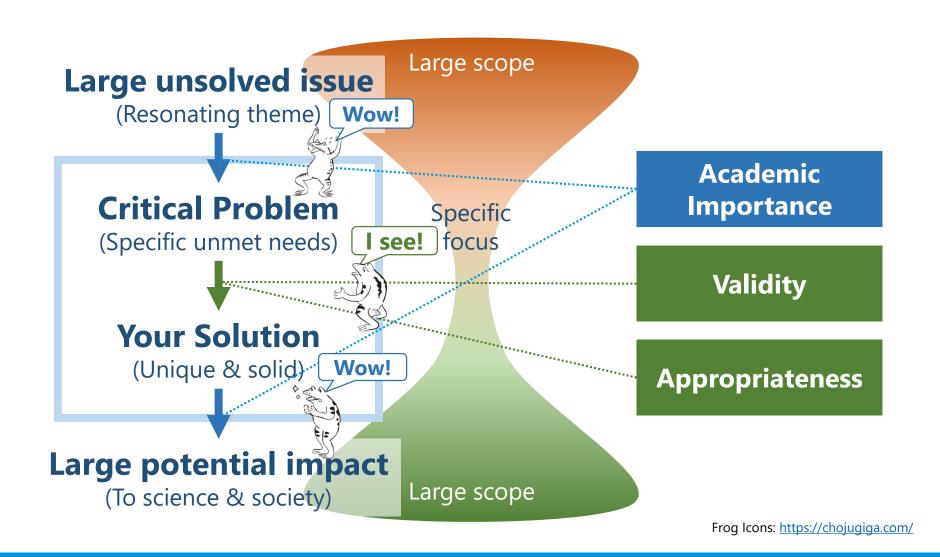
# Check to see how much of your proposal is understood by others



Rabbit & Porcupine Icons: https://chojugiga.com/

Having others check your document is important to avoid your story to become ego-centric

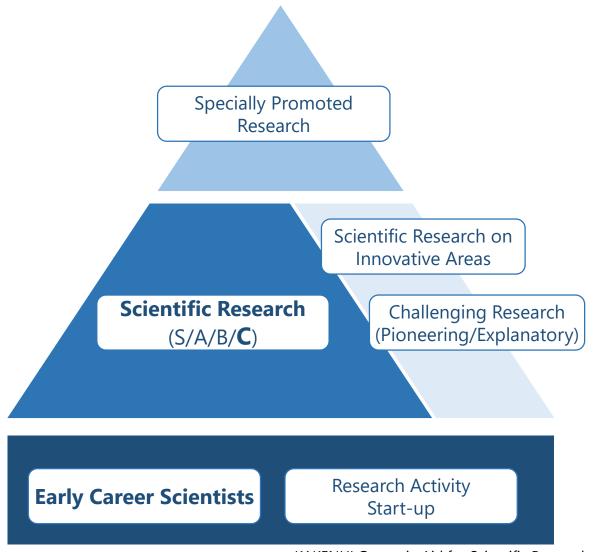
### Convince your 3 Elements through 2 "Wow!"s & 1 "I see!"



Now, let's get the practical tips based on experience!

## **Appendices**

### App 1-1. KAKENHI Research Categories



KAKENHI Grants-in Aid for Scientific Research Pamphlet, JSPS <a href="https://www.jsps.go.jp/english/e-grants/data/kakenhi\_pamph\_e.pdf">https://www.jsps.go.jp/english/e-grants/data/kakenhi\_pamph\_e.pdf</a>

### App 1-2. Useful links on KAKENHI

- KAKENHI proposal documents
   https://www.jsps.go.jp/english/e-grants/grants09.html
- Restriction on Parallel Grant Application
   https://www.jsps.go.jp/english/e-grants/data/09/2022/table\_of\_restriction\_e.pdf
- KAKENHI Review Section Table
   https://www.jsps.go.jp/english/e-grants/data/09/2022/review\_section\_table\_e.pdf
- KAKENHI past reviewer list (in Japanese)
   <a href="https://www.jsps.go.jp/j-grantsinaid/14\_kouho/meibo.html">https://www.jsps.go.jp/j-grantsinaid/14\_kouho/meibo.html</a>
- KAKENHI Peer Review Process
   https://www.jsps.go.jp/english/e-grants/grants03.html
- KAKENHI Review Process & Assessment Criteria
   https://www.jsps.go.jp/english/e-grants/data/2021/r3hyoutei03 en general.pdf

### App 1-3. FY2022 Proposal Format: Part 1

Note: New format has been introduced for FY2022 applications!

#### **Early-Career Scientists 1**

#### 1. Research Objectives, Research Method, etc.

This research proposal will be reviewed in the Basic Section of the applicant's choice. In filling this application form, refer to the Application Procedures for Grants-in-Aid for Scientific Research-KAKENHI-.

Research objectives, research method, etc. should be described within 4 pages.

A succinct summary of the research proposal should be given at the beginning.

The main text should give descriptions, in concrete and clear terms, of (1) scientific background for the proposed research, and the "key scientific question" comprising the core of the research plan, (2) the purpose, scientific originality, and creativity of the research project, and (3) applicant's research development leading to conception of the present research proposal, domestic and overseas trends related to the proposed research and the positioning of this research in the relevant field, (4) what will be elucidated, and to what extent and how will it be pursued during the research period, and (5) preparation status towards achievement of the purpose of the research project.

### **Research Proposal**

### App 1-3 FY2022 Proposal Format: Part 1 Notes

Note: New format has been introduced for FY2022 applications!

#### <Note 1>

 Read and understand the following important notes carefully before preparing your Research Proposal Document.

KAKENHI funding aims to promote scientific research in all fields based on original ideas of researchers. The grants provide financial support for creative and pioneering research projects that will become the foundation of social development.

In KAKENHI, research theme setting is at the applicant's discretion. As such, KAKENHI research proposals are evaluated based not only on their scientific significance, but also on their originality and creativity. Accordingly, in the Research Proposal Document forms for the "Scientific Research" and "Early-Career Scientists" categories, applicants are required to state:

- ✓ What kind of <u>key scientific question(s)</u> is set against the relevant <u>scientific background</u> (such as research trends and new developments)?
- ✓ What are the <u>scientific originality</u> and <u>creativity of the proposal</u>?
- ✓ What was the research development leading to the conception of the research idea?
- ✓ What are the <u>research trends</u> (domestic and overseas) and the positioning of this research in the relevant field?

In the review process, research proposals will be screened either by Comprehensive Review or Two-Stage Document Review. Reviewers strive to grasp the essence of the proposed research through exchange of opinions among them, evaluate such merits as scientific significance, originality and creativity, and comprehensively place their judgments taking account of the feasibility of the research plan and the applicant's ability to conduct research.

In applying for KAKENHI, applicants are advised to take note of the above, and to read the Application Procedures for Grants-in-Aid for Scientific Research and the explanations of review criteria and the annotations in the application form in preparing their Research Proposal Documents, so that the scientific merits and other points in the research proposal will be appropriately conveyed to the reviewers.

### App 1-3 FY2022 Proposal Format: Part 1 Notes

Note: New format has been introduced for FY2022 applications!

#### <Note 2>

#### Note 2:

- 1. Read carefully the "Procedures for Preparing and Entering a Research Proposal Document" when preparing the document.
- 2. The document should be written with font size 10-point or larger.
- 3. The title and instructions on the upper part of each page should be left intact.
- 4. Do not exceed the maximum number of pages specified in the instructions. In case blank page(s) occur, leave them as they are (do not eliminate any page).

### App 1-3. FY2022 Proposal Format: Part 2

Note: New format has been introduced for FY2022 applications!

#### **Early-Career Scientists 5**

#### 2. Applicant's Ability to Conduct the Research and the Research Environment

Descriptions of (1) applicant's hitherto research activities, and (2) research environments including research facilities and equipment, research materials, etc. relevant to the conduct of the proposed research should be given within 2 pages to show the feasibility of the research plan by the applicant (Principal Investigator).

If the applicant has taken leave of absence from research activity for some period (e.g. due to maternity and/or child-care), he/she may choose to write about it in "(1) applicant's hitherto research activities".

### **Feasibility**

#### \* Note:

- 1. The description in this column is to explain the feasibility of the research plan. On citing research achievements (research papers, books, patents, invited talks, etc.) they should be given not as an exhaustive list but as supporting evidence to prove the applicant's ability to conduct the proposed research.
- 2. Sufficient information should be given so that the reviewers can identify the research achievements. In the case of a research paper, for example, the relevant bibliographic information, including the title of the paper, the author(s), the title and the volume of the journal, the publication year, and the pages of the article should be given.
- 3. The research papers that can be cited are only those already published or accepted for publication.

### App 1-3. FY2022 Proposal Format: Part 3

Note: New format has been introduced for FY2022 applications!

#### **Early-Career Scientists 7**

#### 3. Issues Relevant to Human Right Protection and Legal Compliance

(cf. Application Procedures for Grants-in-Aid for Scientific Research)

In case the proposed research involves such issues that require obtaining consent and/or cooperation of the third party, consideration in handling of personal information, or actions related bioethics and/or biosafety (including the laws and regulations and the guidelines in the country/region(s) where the joint international research is to be conducted), the planned measures and actions for these issues should be stated within 1 page.

This applies to research activities that would require approval by an internal or external ethical jury, such as research involving questionnaire surveys, interviews and/or behavior surveys (including personal histories and images) including personal information, handling of donated specimens, human genome analysis, recombinant DNA, and experimentation with animals.

If the proposed research does not fall under such categories, enter "N/A (not applicable)".

### Compliance

#### i Assessment Criteria

#### [Rating Elements]

#### (1) Academic Importance of Research Project

- Is it an important research project to be promoted from the academic point of view?
- Is the "key scientific question" comprising the core of the research plan clear, and scientific significance, and originality recognized?
- Is it clear that the history leading to the conception of the research plan and domestic and overseas trends related to the proposed research and the positioning of this research in the relevant field?
- Can we expect an effect the wave to a wider academic, scientific, technological or society by conducting this research project?

Scoring Classification	Assessment Criteria
4	Excellent
3	Good
2	Somewhat insufficient
1	Insufficient

#### (2) Validity of Research Method

- Is the research method concrete and appropriate in order to achieve its research objective? Also, do the research expenditure ensure consistency with the research plan?
- Is the preparation status appropriate in order to achieve its research objective?

Scoring Classification	Assessment Criteria
4	Excellent
3	Good
2	Somewhat insufficient
1	Insufficient

#### (3) Appropriateness of Ability to Conduct Research and Research Environment

- Does it possess sufficient ability to conduct the research plan based on research activity over the past years?
- Have the research environment been arranged by the research facilities, equipment, research materials, etc. necessary to conduct the research plan?

Scoring Classification	Assessment Criteria
4	Excellent
3	Good
2	Somewhat insufficient
1	Insufficient

#### [Overall score in the first stage review]

With respect to the adoption of each research project, focusing on the rating elements of (1) to (3) above, after conducting a comprehensive evaluation, please evaluate 4 grades according to the scoring distribution shown in the right column of the table below, and attach the overall score.

(If the number of research projects in charge is small, this is not the case.)

In the case of research projects that are "interested", please write down the reason in the "Reason for Interests" column.

In addition, "The Status of Application and Acquisition of Research Grants" column and "Issues Relevant to Human Right Protection and Legal Compliance" column in the research proposal document is not taken into consideration in the overall score attached in the review. Please attach overall score based on the other each column etc. In the "Status of application and acceptance of research grant" column and "Issues Relevant to Human Right Protection and Legal Compliance" column, please check "iii Points to be Noted" for handling in review.

Scoring Classification	Indication on Scoring Distribution
4	10%
3	20%
2	40%
1	30%
Cannot evaluate because it has interests	_

Note: When evaluating, attach a score with the following as a guide.

"4: Very good", "3: Good", "2: Usual", "1: Inferior" https://www.jsps.go.jp/english/e-grants/data/2021/r3hyoutei03\_en\_general.pdf

#### [Review comments by reviewers in the first stage review]

In the first stage of review, please fill in the review comments by reviewers focusing on the pros and cons of the research project the "Review comments by reviewers" column of all research projects. Please note that it is unnecessary to attach a review comments by reviewers at the second stage of review.

This review comments by reviewers will be presented to other reviewers in order to deepen their understanding of research projects when attaching a new overall score at the second stage review.

#### [Overall score in the second stage review]

With respect to the adoption of each research project to be reviewed at the second stage based on the results of the first stage of the document review, focusing on the rating elements of (1) to (3) above and checking the review comments etc. of all the reviewers who are reviewing the same research project, after conducting a comprehensive evaluation, please evaluate 4 grades according to the scoring distribution shown separately in the right column of the table below, and attach the overall score.

In addition, in setting up research projects to be reviewed at the second stage, we consider not only research projects whose ranking in the result of the first stage document review is near the number to be adopted, but also the research projects for which some reviewers have extremely low scores.

In addition, "The Status of Application and Acquisition of Research Grants" column and "Issues Relevant to Human Right Protection and Legal Compliance" column in the research proposal document is not taken into consideration in the overall score attached in the review. Please attach overall score based on the other each column etc. In the "Status of application and acceptance of research grant" column and "Issues Relevant to Human Right Protection and Legal Compliance" column, please check "iii Points to be Noted" for handling in review.

### App 3-1 What's different in Academic Writing & Grant Writing?

Academic Writing versus Grant Writing: Contrasting Perspectives

Academic Writing	Grant Writing
Scholarly pursuit:	Sponsor goals:
Individual passion	Service attitude
Past oriented:	Future oriented:
Work that has been done	Work that should be done
Theme-centered:	Project-centered:
Theory and thesis	Objectives and activities
Expository rhetoric:	Persuasive rhetoric:
Explaining to reader	"Selling" the reader
Impersonal tone:	Personal tone:
Objective, dispassionate	Conveys excitement
Individualistic:	Team-focused:
Primarily a solo activity	Feedback needed
Few length constraints:	Strict length constraints:
Verbosity rewarded	Brevity rewarded
Specialized terminology:	Accessible language:
"Insider jargon"	Easily understood

Porter R, "Why Academics Have a Hard Time Writing Good Grant Proposals", The Journal of Research Administration, vol 38, 2, 2007

### App 3-2 What should be answered in a good abstract?

A good abstract will convey answers to following 5 questions

- Which problem are you going to solve?
- Why is it important?
- How will you do it?
- What do you plan to find/achieve?
- Why are your findings important?



Modified from "Writing an abstract", Australian National University <a href="https://www.anu.edu.au/students/academic-skills/research-writing/journal-article-writing/writing-an-abstract">https://www.anu.edu.au/students/academic-skills/research-writing/journal-article-writing/writing-an-abstract</a>