

中央研究院 116 年度「關鍵突破研究計畫」計畫書

2027 Academia Sinica Grand Challenge Program (GCP) Proposal

計畫名稱 (中文):

Project Title (English):

計畫(總)主持人 Project PI:

申請單位 Affiliation:

計畫類別 GCP Category:

1. Research Plan

- 1.1 The problem to be solved.** Define the identified grand challenge problem(s), focusing on its importance. Describe the state-of-the-art and identify the current bottleneck. *(about half a page recommended)*
- 1.2 The innovative ideas proposed.** Define the specific aims of the project. Specifically highlight the innovative approach(es) you propose, including its rationale, originality, and scientific merit. *(about half a page recommended)*
- 1.3 The potential impact of the work.** Describe how it may lead to a breakthrough and transform the field if the project is successful. Focus on its scientific and/or societal impact. *(about half a page recommended)*
- 1.4 Plans to test the ideas.** Describe the research approaches in each specific aim. Identify the milestones and the timeline of accomplishing them. Focus on the logic and scientific or technical challenges. Also describe international competitiveness of your project.

*The total page limit for this section including references is **ten** pages; by A4 size, 1 inch or 2.54 cm margins for all sides, single spaced, font: Times New Roman or Calibri, 11 point. Smaller font size 9 or 10 is allowed only for Figure legend and Bibliography.*

2. Changes/Progress made since last Application

Please state if this application is an extension of any of your ongoing or completed grant support, or previous failed application(s) to any of the AS grant program. *You may simply provide a statement or two if this has already been elaborated in the Research Plan section. You can ignore this Section if non-applicable but failure to disclose the relevant information may disqualify your current application.*

- 2.1 If this is an application to extend or renew your ongoing or completed grant support** (provide grant number and title) for related research topics and aims, summarize the major accomplishment thus far and how the current proposal may capitalize on this recent progress to make further advances in the next 5 years.
- 2.2 If this is an application based on similar research aims proposed in previous round of failed application** (to any AS grant type), describe the major changes you have made in response to Reviewers' comments and/or after taking into considerations progress in the field (either your own or others) since the proposal was last submitted. Point-to-point rebuttal is not required.

*The page limit for this section is **one** page.*

3. Summary of Previous Research Accomplishments (Project PI only).

Summarize and highlight your previous research accomplishments in the **last five years**. Identify 3 recent publications most representative of your accomplishment that are relevant to the research work to be undertaken in this proposal (reprints to be submitted with the application material). Do not include manuscripts in preparation or submitted.

*The page limit for this section is **one** page.*

4. Biographical Sketch or Curriculum Vitae (for every Project PI and Co-PIs)

Each PI and co-PI from the Division of Mathematics and Physical Sciences & Division of Life Sciences should use the template provided in the next page to prepare their **Biographical Sketch**, which should include among others:

- i) a **Personal Statement** - brief self-introduction of research path/career in 200-300 words;
- ii) **Contributions to Science** - a summary of major research achievements by referring to selected key publications and other forms of contributions, their significance and impact;
- iii) **Complete/ Selected List of Recent Publications** - selected key publications can be combined with a more complete list of publications in the last 5 years, but keep to the total page limit

PIs in the Division of Humanities and Social Sciences may opt for an alternative **Curriculum Vitae** format, the content of which should include Contact Information, Current Affiliation and Title, Education and Professional Experiences, Research Interests, Awards and Honors, and a Selected Publication List.

個人簡歷 應含聯絡資訊、所屬單位與職稱、學經歷、研究領域、獎項及榮譽、代表性著作目錄

*This section including list of publications should not exceed **four** pages for each PI and co-PIs.*

5. Output from Recently Completed (2024-2026) and Current AS Grant Support (for every Project PI and Co-PIs)

List only publications that carry a statement acknowledging the specific AS grant support (with grant number). Include the Abstract as it appeared in the cited publication, or provide a brief description highlighting its major findings and the PI's contribution in ≤ 200 words. This section should be appended to the above Biographical Sketch/CV section. **Please underline the names of the PI and Co-PIs for administrative review identification.**

BIOGRAPHICAL SKETCH

NAME:

中文姓名:

INSTITUTE/RESEARCH CENTER:

Current POSITION:

EDUCATION (Begin with baccalaureate or other initial professional education)

| INSTITUTION AND LOCATION | DEGREE | DURATION MM/YY-MM/YY | FIELD OF STUDY |
|--------------------------|--------|-------------------------|-------------------|
| | | | |
| | | | |
| | | | |
| | | | |

EMPLOYMENT (Include postdoctoral training)

| INSTITUTION AND LOCATION | POSITION TITLE | DURATION MM/YY-MM/YY | FIELD OF STUDY |
|--------------------------|-------------------|-------------------------|-------------------|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

I. PERSONAL STATEMENT

A brief self-introduction of research path/career, 200-300 words

II. CONTRIBUTIONS TO SCIENCE

Summarize major research achievements and describe their significance and impact

III. LIST OF PUBLISHED WORK

Provide a complete or selected list of recent (last 5 years) publications to keep within the total four-pages limit. Earlier key publications can also be provided here, or under item III above.

Total should not exceed 4 pages

Please complete the following items online at <https://asms.sinica.edu.tw> and provide the required information in accordance with the specified guidelines.

1. Abstract (in Chinese, less than 500 words)

2. Executive Summary (in a total of ≤ 250 English words)

Please address each of the following questions briefly and precisely:

- 2.1** What is the grand challenge problem to be addressed? Which part of the problem will be solved?
- 2.2** What is your major idea? How innovative it is? How are you going to solve the problem you identified?
- 2.3** How much impact you will make after the 5-year funding period, if the project is successful.

3. Budget and Justification

- 3.1** Use the online Budget Form to prepare your itemized budget request. Briefly justify the budget allocated for each of the categories, including the intended number and level of research personnel to be employed, major equipment and consumable items requested, and any other aspects not apparent from the Budget Form.
- 3.2** For integrated team projects, briefly justify how the total budget requested will be distributed among the co-PIs and PIs.

All budget items must be necessary, reasonable, and within the applicable funding limits.

4. List of Current and Pending Grant Support (for every Project PI and Co-PIs)

The PI and co-PIs are required to log into the online application system at <https://asms.sinica.edu.tw> to update their personal information.

*List any current (ongoing) and pending projects/proposals funded by Academia Sinica and external agencies. AS allows submission of similar proposals to more than one funding sources but **any overlapping similarity and/or requested cost-sharing items must be fully disclosed and justified** to avoid duplicated funding. Any incomplete or inaccurate information will adversely affect the consideration of this proposal.*

Please be reminded that,

1. applicants should not submit the same proposal for different types of AS grant program during the same grant application cycle;
2. applicants must fully disclose if similar proposal has also been submitted to NSTC and other funding agencies at the time of submitting this proposal to AS, with the amount requested and any duplicated items fully described and justified here; any eventual cost-sharing, joint or supplemental funding by multiple agencies must comply with their respective funding policies;
3. applicants must proactively inform the AS grant program office if the funding decision of any pending application is known before the outcome of this application is announced; applicants should withdraw the current proposal if adequate funding has been secured.