2024 Academia Sinica Funding Opportunity Announcement
Grand Challenge Program

The Academia Sinica **Grand Challenge Program** (GCP) is established to encourage its researchers to pursue **innovative** solutions for **critical problems** in science and the humanities that have broad and lasting **impact**. Funding incentives up to 20M (NTD) per year for 4+1 years are provided to promote original and visionary thinking that will accelerate academic breakthroughs.

Interested Investigators are requested to submit a proposal that would clearly describe i) the **specific problem to be solved**, ii) the **innovative ideas and approaches to be taken**, iii) the **impact of the work** if the goals are realized, and iv) the overall **plans to test the ideas**, its feasibility, scientific or technical challenges, potential risks and key deliverables, along with any alternative plans to de-risk. The applications will be critically reviewed based on these criteria, and the applicants are advised to prepare the proposal accordingly.

Principal Investigators are encouraged, but not required, to assemble an integrated collaborative research team to achieve the proposed goals in the most productive ways. This can also be initiated and driven by an Institute or Research Center to solve a scientific or societal problem that matches its mid and long-term development goal. Cross disciplinary collaborative efforts between two or more Institutes/Centers are allowed. Applicants should justify the logistics of their own collaborative arrangements and institutional matching support.

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1. Grant Categories

1. **Individual** GCP Project, by a single individual Principal Investigator (PI).

2. **Team** GCP Project, coordinated by a Program Director, who also serves as the PI and can invite any number of Co-PIs and/or collaborators.

3. **Institute/Research Center-based Team** GCP Project, coordinated by a Program Director, who also serves as one of the required minimum three PIs from the sponsoring AS Institute or Research Center. Joint proposals with one or more Institutes or Research Centers are allowed.

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2. Application Process

2.1 **Eligibility** and **Matching Fund**

1. The Program Director and PI for all three categories of GCP Projects must be an Academia Sinica Research Fellow of any rank.

2. The Director of the Institute/Research Center applying for an Institutional GCP grant is not required to be one of the minimum three PIs, but they must endorse and support the proposal with matching funds from an appropriate source.

3. Matching funds are not mandatory for Individual and Integrated Team GCP projects. PIs and Program Directors are, however, encouraged to demonstrate commitment and determination by applying their own intramural support as matching funds.

4. PIs can invite non-Academia Sinica scientist(s) to participate in the project and serve as co-PI(s), if necessary.

5. Collaborators enlisted should be justified in the proposal and each is required to provide a Letter of Support delineating their expertise and specific roles in the GCP projects.

2.2 **Deadlines** and **Important Reminders**

1. Application deadline is **May 2, 2023;** Proposals from Division of Life Sciences and Division of Mathematics and Physical Sciences should be written in English., adhering to the guidelines and format specified within the document template provided (Appendix 1), with a Research Plan describing the following four major aspects: 1) **the problem to be solved**, 2) the **innovative ideas proposed**, 3) **the potential impact of the work**, and 4) **plans to test the ideas**.

2. In preparing the proposals, applicants should keep in mind the following review criteria: i) **the significance of the problem to be addressed,** ii) **the degree of innovation,** iii) **the extent of anticipated impact**, and iv) **the feasibility of the research plan.** Although this Program will emphasize the first three criteria and take more risks on unproven methodologies and hypotheses, a major strategic flaw will not convince the reviewers. The project should also be deemed internationally competitive by the reviewers.

   Furthermore, successful applicants should have relevant expertise, demonstrate that the project is part of their major career goal, and will devote sufficient effort to the project. Applicants are advised to read the Review Criteria (Appendix 2) before starting to write their proposals.

3. Use the form provided (Appendix 3) to submit a **Letter of Intent** by March 31, 2023 (via email to: grandchallenge@gate.sinica.edu.tw), which should include a brief synopsis (≤250 words in English or ≤500 words in Chinese) of the intended research and scientific/societal problem to be addressed, and names of suggested potential reviewers. The Letter of Intent will not be used for screening nor will it be subject to review. It serves only to facilitate the administrative aspects of the grant review process.

4. Any research project involving biological and/or genetically engineered materials, animal experiments or human subjects must obtain approval from the appropriate authorized AS committees. If the official approval document cannot be submitted at the time of grant application, proof of having applied for approval must be provided instead.

5. Please note that, in accordance with the regulations of Academia Sinica (Lett No. 1111401198, dated September 19, 2022), "Research staff (including research technical personnel) shall not engage in research related to the scope of a subject matter of technologies that have been exclusively licensed with the use of funds from the public sector."

6. Academia Sinica encourages researchers to learn various new tools, including advanced AI-driven applications, to enhance research quality, ensure thorough considerations of supporting background information, and improve work efficiency. However, the responsibility for the accuracy of all content, writing quality, and adherence to academic research integrity standards rests solely with the applicant.

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3. Funding Period and **other Requirements**

3.1 A **five-year proposal** written with a five-year vision and goals should be submitted. Selected proposals will be funded based on the 4+1years and 1+4/2+3 years mechanisms described below:

1. 4+1 years – Applications that convincingly demonstrate sufficient novelty, scientific merit, and significant impact will be funded in full for four years. The one-year extension after that is awarded based on progress. The PI can request for extension at any time soon after the conclusion of the first three years by submitting a progress report highlighting key findings and a publication list produced from this project. Projects that have adequately met the target milestones and already have tangible outcomes in the form of manuscripts or publications will be granted an extra one year (fifth year) of funding support.

2. 1+4 or 2+3 years – If the research idea is considered by the review to be original and of strong scientific merit but is too risky for long-term investment, the project may be provisionally funded for one or two years to obtain key results for de-risking. Application for extension into a full five-year GCP project can be made anytime within the first 18 months or by end of second year, for project funded for 1+4 or 2+3 years, respectively, by submitting a progress report or a revised proposal for competitive review. PIs for projects that fail to gain an extension can resubmit the proposal as a new application in due course when more progress is made. To avoid discontinuation of grant support, request for extension should preferably be made 3 months before the end of the provisional one to two years funding period.

3. Instead of the 1+4 or 2+3 years funding mechanism described above, selected proposals of sufficient originality may also be funded as Grand Challenge Seed Projects for 1 to 2 years.

4. Actual funding may be adjusted on a yearly basis based on budget availability and progress.

3.2. Grant **Acceptance** and **Requirements** prior to Project Execution

1. Program Directors/PIs and co-PIs of a successful application grant must sign and abide by the terms as stipulated in the Project Execution Agreement, and complete the Conflict of Interest declaration process, prior to commencing the project.

2. Approval from the authorized AS committees must be obtained and submitted before commencing any project involving biological and/or genetically engineered materials, animal experiments or human subjects. Should there be any change in the experimental content or subject matter during the project period, appropriate amendment or new application must be filed for approval.

3. In accordance with the AS Research Ethics regulations, all personnel who directly perform any AS-funded research activity should receive at least one hour of research ethics training every three years. Such training must be completed within six months of joining the research project, or within the duration of the project for a project lasting less than six months.

4. Program Director/PI and co-PIs found to have violated research ethics will be subject to actions recommended by the AS Ethics Committee.

3.3 **Reports** and **Evaluation**

1. A brief written progress summary of the previous year must be submitted yearly in February for review, which, in year 4, can be further elaborated by highlighting key findings to request the 4+1 funding extension as described in section 3.1.

2. Seminars and oral presentations by PI to discuss mid-term progress and problems can be arranged as needed.

3. A final written report to the AS Department of Academic Affairs and Instrument Services is due upon completion of each project.

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4. Application Materials to be submitted

1. Use the form provided (Appendix 3) to submit a **Letter of Intent** by email to the GCP Grant Office by **March 31, 2023**.

2. Complete the online application process by May 2, 2023. Log into the online application system at https://asms.sinica.edu.tw using the PI's SSO account and follow through the steps as instructed. Applicant should first maintain and update the personal data of the PI and co-PI(s), then fill in online the required basic information including the project category, title, the budget requested, executive summary, and keywords. Use the document template provided (Appendix 1) to prepare the **Full Proposal**, adhering to the format and rules

specified within. Each of the required items including research plan, supporting letter, recent research accomplishments, and personal track record with a list of current and pending grant support, should be uploaded as **ONE** PDF electronic file via the online system.

3. Upon completion of the online application process, an automatic confirmation email will be generated and sent by the system to acknowledge receipt, which can be used as proof of submission.

4. GCP Grant Office contact information:

   Email: grandchallenge@gate.sinica.edu.tw
   c/o Ms. EG Chen (Tel: 2787-2612); Ms. Chien-Hua Pai (Tel: 2787-2613)
   Department of Academic Affairs and Instrument Service

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申請 **中央研究院 113 年度「關鍵突破計畫」** 簡要中文說明

壹、計畫類型：

關鍵突破研究計畫型別分為下列三類：

一、個人型研究計畫

二、單一整合型研究計畫

三、所、中心問題導向型團隊研究計畫

貳、計畫申請作業

一、申請人資格與配合款

(一) 研究計畫之(總)主持人需為本院專任助研究員(含)以上。

(二) 所、中心問題導向型團隊研究計畫由所、中心三個(含)以上專任與合聘研究人員提出，也可以跨所聯合提出。總主持人需為本院專任助研究員(含)以上。所長或中心主任可以不需要是該計畫(總)主持人，但需應允給予一定比例之配合經費並負督導之責。

(三) 個人型與單一整合型計畫可以不需要配合款，但仍鼓勵研究人員以所、中心原提供之內部研究經費挹注為配合款，以示決心專注致力於此計畫，尋求關鍵突破。

(四) 計畫主持人可邀請非本院專家學者參與研究團隊，擔任該計畫共同主持人。

(五) 若因執行計畫需邀請合作專家學者或協同參與人員，計畫主持人可於申請書詳細說明其必要性，並檢附被邀請者同意參與計畫並提供協助或支持該計畫之說明信函 (supporting letter)。

二、計畫申請時程與其他注意事項：

(一) 申請時程為即日起至 112 年 5 月 2 日止，數理組及生命組之計畫書應以英文撰寫，格式請見 附件 1；人文組以該專業領域之國際學者熟悉的文字為主要考量。

(二) 撰寫計畫書時，應著眼於欲解決的關鍵議題之重要性、所提出的思維與方法之創新突破性，及研究成果對該領域的影響力。敬請參酌本徵求的英文版說明，及適用於數理組及生命組之計畫審查基準英文說明 (附件 2)。

(三) 有意願申請者應於 112 年 3 月 31 日前以電子郵件寄送計畫申請意願書，含中英文摘要及建議審查委員名單等資料，以利安排審查作業，格式請見附件 3。

(四) 研究計畫中涉及生物材料及基因重組相關實驗、動物實驗及以人為研究對象者，應檢附相關委員會之核准文件。核准文件未能於申請時提交者，須先提交已送審之證明文件，並於計畫審核通過前補齊核准文件。

(五) 依據本院 111 年 9 月 19 日學術字第 1111401198 號書函規定「本院研發成果已完成專屬授權者，研究人員（含研究技術人員）不得再以公部門經費從事涉及該專屬授權標的

範圍之研究」。

(六) 本院鼓勵研究人員學習各種新的工具，包含各式人工智慧的應用，藉此提升研究品質、確保背景資料的周全性，及改善工作效率。惟所有計畫內容的正確性，撰寫品質，和遵守學術倫理規範的責任均由申請人全權承擔。

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參、計畫補助年限與執行前需求

一、計畫應以 5 年研究目標撰寫，獲補助的計畫執行期設有 1+4 年期及 4+1 年期機制，補助機制說明如下：

(一) 4+1 年期機制 - 經審查評估其研究計畫已有相對成熟的具體概念與規模，且在解決所提的關鍵問題上有重大突破之潛能，將一次核給 4 年經費支持，第 5 年之經費補助將視是否已達成原預設的目標及產出的成果而定。計畫主持人可於計畫執行第三年完畢後任何時間點以扼要成果報告及此研究所產生的著作目錄提出申請展延。

(二) 1+4 或 2+3 年期機制 - 經審查評估其申請計畫之研究概念雖具有原創性、學術價值及發展潛力，但整體執行上屬高風險而尚不宜長期投資者，可暫先核給 1 或 2 年計畫補助經費。計畫主持人可於執行 18 個月內（1 年期）或第 2 年期滿前（2 年期），依核定時之規定以初期成果或已修正的計畫書提出申請延續執行該計畫至原定的 5 年期程。不符預期績效無法延續其計畫者，可視實際進度重整後以新計畫重新申請。為避免補助中斷，申請延續應於期滿前三個月提出，以利審查與核定作業。

(三) 除以上 1+4 或 2+3 年期補助機制外，具有原創性的計畫亦可轉成以 1 至 2 年期的關鍵突破種子計畫補助。

(四) 每年實際核定經費將視當年之預算金額及前一年之執行進度而定。

二、核定後執行前須知

(一) 經核定通過之總主持人及共同計畫主持人須簽署相關計畫執行同意書，並於計畫執行前完成利益衝突揭露程序；

(二) 核定通過之研究計畫，若有涉及生物材料及基因重組相關實驗、動物實驗及以人為研究對象者，應於提供相關委員會之核准文件後，方可核撥經費。如相關實驗內容於執行期間有所變更，亦須重新申請或修訂審核同意文件；

(三) 依據「中央研究院學術研究倫理教育課程實施要點」，執行以本院預算支應之研究計畫者，參與計畫人員每 3 年應接受至少 1 小時之學術倫理教育課程訓練，至遲應於開始參與研究計畫之日起 6 個月內完成；研究計畫執行期限少於 6 個月者，應於計畫執行期限內完成；

(四) 計畫主持人及共同計畫主持人如涉有違反學術倫理之情事者，依「中央研究院各級倫理委員會設置及作業要點」處理。

三、**執行進度與成果報告**

(一) 計畫執行期間，每年 2 月須提交前一年之精簡進度摘要報告，可於第 4 年再綜合說明主要成果作為申請前述 4+1 年期之第 5 年補助的依據。

(二) 視需求安排口頭報告討論進度及待解決之問題。

(三) 計畫執行期滿，須向學術處提交完整執行成果報告。

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肆、**申請資料**

一、**申請意願書**，請依格式 (附件 3) 填妥簡要資料後，於 112 年 3 月 31 日前以電子郵件寄至「關鍵突破計畫」辦公室。

二、**申請流程**，請按照本院學術研究管理系統 (https://asms.sinica.edu.tw, 以 SSO 帳號登入) 所敘明之步驟，於 112 年 5 月 2 日前完成線上申請。申請者應先於線上維護及更新計畫主持人與共同主持人之個人履歷，並填妥計畫類別、名稱、經費需求、摘要、關鍵字等基本資料。計畫內容、支持說明信函、近期研究成果、目前正執行與申請中之計畫件數及經費補助情形等，則依計畫書 (附件 1) 規定之格式撰寫後，轉存為一個 PDF 電子檔於線上系統上傳。

三、完成線上申請後，申請人將即時收到系統自動發送之確認回函，可作為收件之存證。

四、學術及儀器事務處「關鍵突破計畫」辦公室電子郵件聯絡方式：

grandchallenge@gate.sinica.edu.tw
承辦人：陳羿君女士 (電話：2787-2612)；白倩華女士 (電話：2787-2613)

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