

寫計畫

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學者的挑戰

1. 拿到計劃（研究經費）
2. 發表論文

1. 如何撰寫一份好的研究計畫書

2. 群題計畫/跨領域合作 (單一整合型)

1. 如何撰寫**一份**好的研究計畫書

2. 群題計畫/跨領域合作 (單一整合型)

研究計畫的選擇

1. 重要性？ filling the gaps?
2. 新穎性（概念上或技術上, a major leap in the field）？
3. 獨特性？
4. 競爭力？
5. 國家科研的發展方向？

國家/學校/研究中心的發展方向？

1. 參加學會
2. 參加研討會（同領域 or 跨領域），生科司的說明會
3. 飯團
4. All ears!



開工

1. 擬研究的問題
 - (i) a testable hypothesis
 - (ii) of high significance
2. 最適合的學門（或申請途徑）
3. 詳讀計畫徵求及申請說明

寫計畫

A story that is **easy to follow**, even to someone not familiar with the topic.

- (1) Specific Aims : *2 or 3 aims; not dependent on each other*
- (2) Significance /Innovation
- (3) Approach

案例

寫計畫

II. The Significance /Innovation Section

(1) a comprehensive but succinct review of the literature
(“gaps in the field” to “a preview of the goals of the proposal”).

Up to date

(2) Significance

(3) Innovation: (a) **scientific novelty**, (b) **methodological innovation**, (c) potential (clinical) implications

案例

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III. The **Approach** Section

(1) Preliminary Results (展現能力，可行性)

案例

(2) **Experimental Designs** (>1/2 of grant)

Aim-1 . To determine or to elucidate (hypothesis statement. (2 or 3 aims; not dependent on each other)

Rationale

Experimental design

Expected Results and Interpretation

Potential Problems and Alternative Strategies.

- (a) Figures and tables that summarize the results should be included, but if any of the results have been published, it is acceptable to reference them.
- (b) If there are any techniques that the applicant is not familiar with, a collaborator who is familiar with the method should be recruited to serve on the application.

以己度人：用評審的角度看自己的計劃書

Easy to read and understand.

1. Reviewers in general are busy.
2. Many of the reviewers may have **expertise not related to the subject** of your application.
- 3. Abstract is crucial.**
4. Make sure the application is structured well and does not contain **spelling and grammatical errors**.
5. Including figures and flowcharts that **summarize** the aims of the grant application.
6. Proofread the grant and ask colleagues to review it for you.

1. 如何撰寫一份好的研究計畫書

2. 群題計畫/跨領域合作 (單一整合型)

群體計畫

合夥搶銀行？

加盟店？

聯盟

聯盟是一個由兩個以上自然人、公司、組織或政府（或任何以上之組合）以參與共同活動或以達成共同成果而共享彼此資源為目標所組成的專業團體。

(<https://zh.wikipedia.org/wiki/%E8%81%AF%E7%9B%9F>)

群體計畫

1. 為什麼要參加團隊合作計畫？

*爭取經費

*更上層樓

*有趣

群體計畫

2. 如何找到合作夥伴？

*校內 + 校外

*參加學術活動

*介紹/引介

群體計畫

跨領域合作的挑戰- 如何整合

*共同的語言？

*合作的模式？

*建立互信？

*分擔責任？

*分享成果？

群體計畫

跨領域合作計畫的要件

- *共同的目標
- *清楚明確的假說
- *簡易清楚的摘要- clarity of idea
- *充分的證據和初步結果
- *自知之明 (potential difficulties and limitations)

- *暨獨立又互補
- *互相效力 (Synergy)
- *整合 (Integration)
- *執行的架構 (e.g., 總計畫主持人, 討論方式, 解決衝突的方式)
- *共用研究資源 (cores)

Review Criteria for Multi-Project Proposals

- Significance
- Investigators/Program Leadership
- Innovation
- Approach
- Environment
- Integration
- Cores
- $3 \leq \# \text{ of PI} \leq 7$

寫計畫所衍生的學倫問題

* 已經做完了？

案例六

* 還沒做完？

案例七

* 自我抄襲？

* 誰寫的？

案例八

References:

1. <http://www.niaid.nih.gov/researchfunding/grant/pages/multi.aspx>
2. <http://www.year-network.com/wp-content/uploads/2013/06/Joe-Gorman-Tips-and-tricks-for-EU-proposals.pdf>
3. <https://ccrod.cancer.gov/confluence/display/NIHOMBUD/Home;jsessionid=5658AA8154C93A40F85D6561DED5C79E>
4. MM Poo (2014) *National Science Review* 1: 165, 2014
5. Hossein Ardehali (2014) *Circ Res.* 2014;114:1231-1234.