TEAM WORK AND DEMYSTIFYING GRANT PROCESSES

Some mechanics of team building, putting together a funding-worthy grant, and learning to review

Led by: David Chambers, Graham Colditz, Ross Brownson

Hosted by MT-DIRC

Overview

- Working with teams (at your institution and at other institutions)
- Tips in grant revision
- Learning to be an excellent reviewer
- Assorted tips

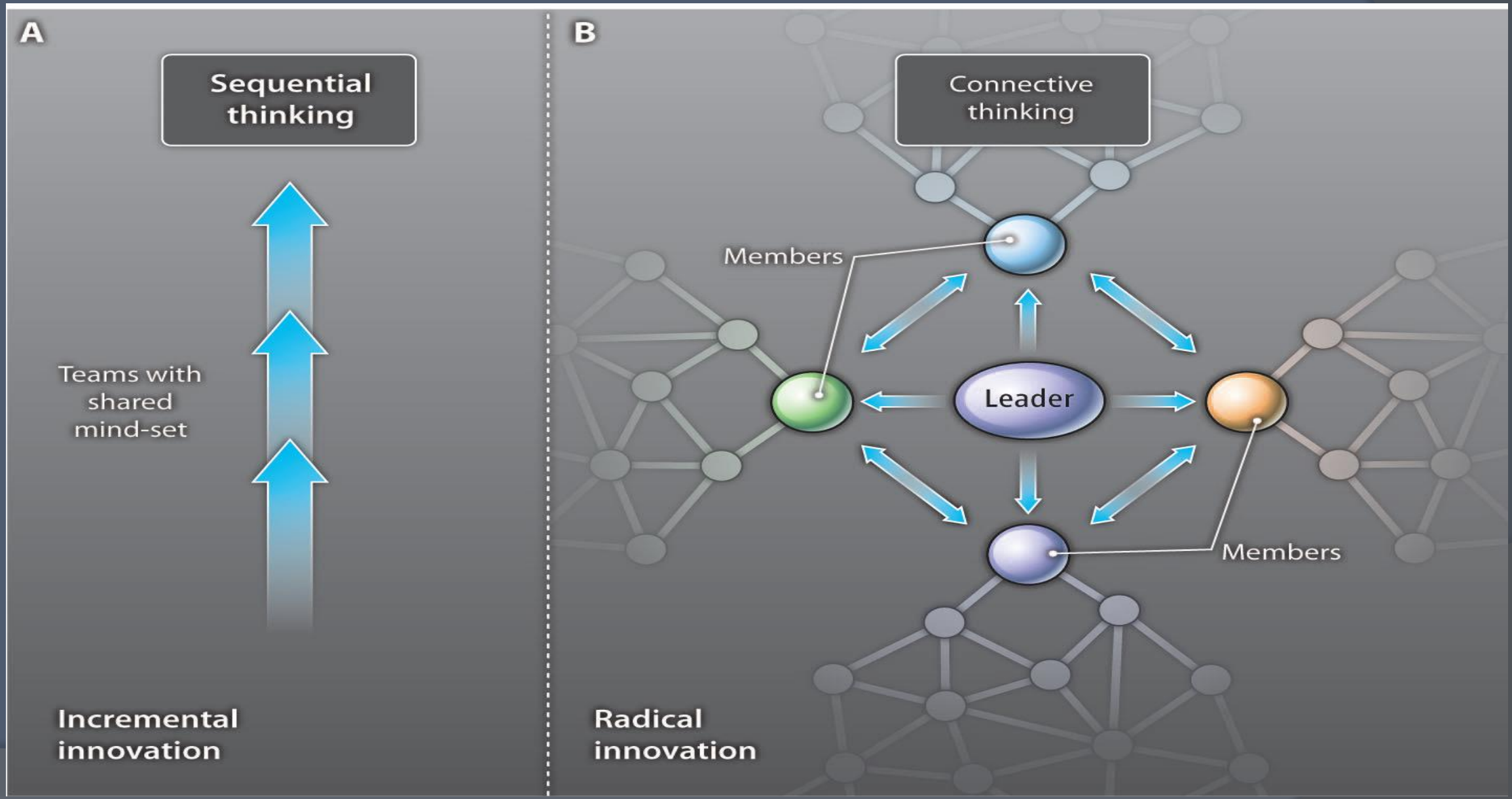
Team Science for D&I Research

Working with colleagues at home & at other institutions

- Learn about the science of team science, based largely on NCI work led by Kara Hall and others

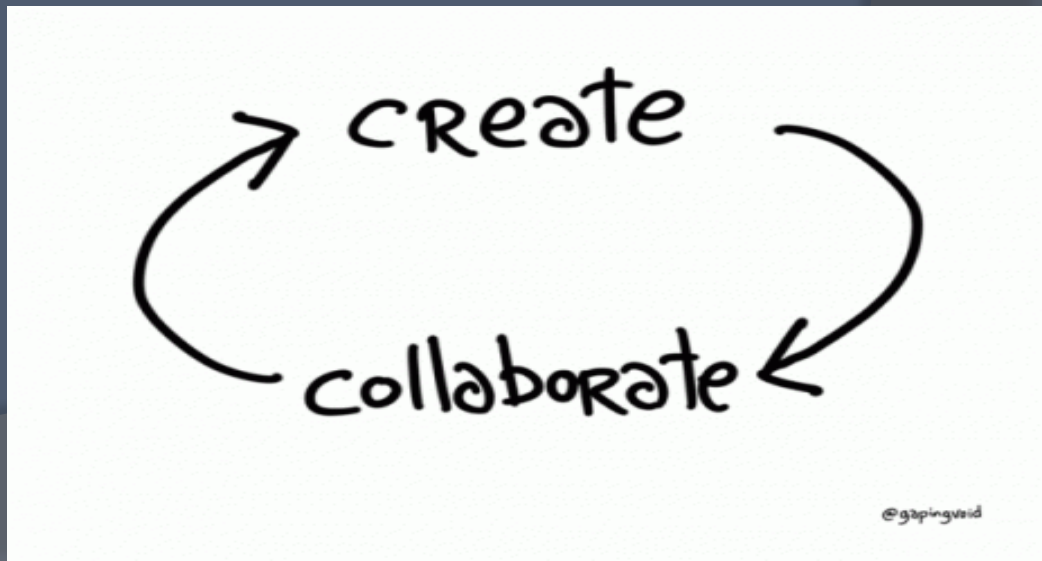
- Options
  - Apply some basic principles
  - Fully engage in (or even study the process of) team science

Differences in Creative Thinking



Motives for Collaboration

- To gain access to:
  - Special equipment or facilities
  - Special skills
  - Unique materials/reagents
- To increase visibility/recognition
- To gain experience
- To train researchers
- To increase productivity

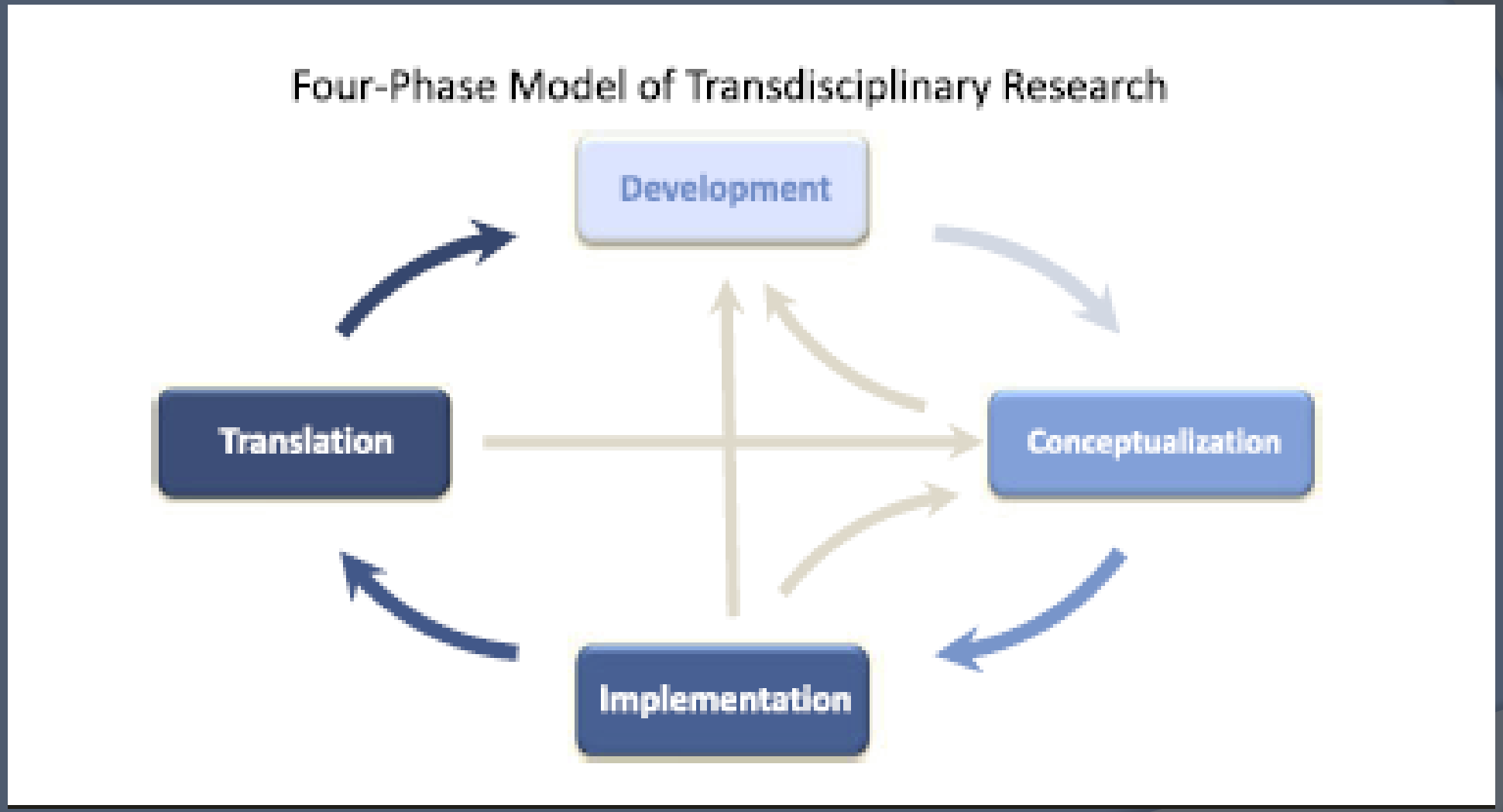


Some basics: Building a research team

- Bring together diverse backgrounds and experiences
- Clarify roles, responsibilities, contributions
- Define milestones and success
- Develop an environment of openness
- Establish schedule of meetings
- Discuss processes for sharing data and managing authorship
- Prepare for disagreements
- Have a policy for bringing on new members

- Often these can appear in your management plan in a grant

A deeper dive…



Hall KL, Vogel AL, Stipelman B, Stokols D, Morgan G, Gehlert S. A Four-Phase Model of Transdisciplinary Team-Based Research: Goals, Team Processes, and Strategies. *Transl Behav Med.* Dec 1 2013;2(4):415-430

With guidance by phase

	Developmental
Primary goal	Establish a shared understanding of the scientific or societal problem space of interest—including what concepts fall inside and outside its boundaries—and mission of the group
Team type(s)	• Network
	• Working group
	• Advisory group
	• Emerging team
Key team processes	• Generate a shared mission and goals
	• Develop critical awareness
	• Externalize group cognition
	• Develop a group environment of psychological safety

Examples of NIH-Funded Team Science

- R01 with Co-PIs
- P01 Program Project Grants
- P50 Specialized Center Grants
- P60 Comprehensive Center Grants
- T32/T35 Training Grants
- U Grants – Cooperative Agreements

"My project is simple. I want to find out once and for all whether there's any truth in the belief that money can't buy happiness."

Great resources

Tips in Revising Your Grant

My application was not discussed… Do I re-submit?

- Should be considered on a case-by-case basis
- Read the summary statement carefully and note weaknesses that you could address in a reasonable length of time
- If Significance and Innovation scored well, there may be hope
- Discuss the critiques with your collaborators, colleagues, and/or senior researchers/mentors to get their suggestions
- Talking to the PO may be helpful, since s/he may be able to interpret the critiques and analyze them with you objectively

Tips in writing a grant revision: When should I resubmit?

- When you can address the weaknesses described in the summary statement
- If needing preliminary data to address the criticisms, you may need to skip a due date or two and plan on including preliminary results
- You can resubmit up to 37 months after original due date; after that = a new application and should not refer to the previous review
- As the time increases between the original application and the resubmission, reviewers may expect more (or more current) preliminary data

May I request that my Resubmission application be reviewed by a different study section?

- Resubmission assigned to the same study section but you can request a change
- It is a good idea to consult with your PO and/or SRO to discuss whether a change would be appropriate
- There is risk in switching study sections

Responding to all reviewers' comments or disregarding some

- Introduction of your resubmission application should address ***ALL*** of the weaknesses
  - For development, summarize in a matrix (following page)
- If you disagree with a reviewer's statement, explain why, and provide additional information
- Avoid responses that could be seen as argumentative
- Ask colleagues to read the reviewers' critiques and your responses prior to resubmission for informative and non-confrontational reply
- Find a format that works with the number & scope of comments

Sample matrix of weaknesses

A cross-country comparison of evidence-based prevention of cancer (#1 R21 CA179932-01)
Review Comments

Comment/weaknesses	*Broad category*	*Response*
Overall comments		
Some reviewers concerned that the four countries are selected out of convenience, while others think it to be adequate given the demonstrated feasibility in these countries.	Rationale for the four countries	Mix of high and middle income Large immigration to US Differing governance (**contextual variables) Major global powers Advanced EBPH, and developing EBPH Productive working relationships, including with practice agencies/sites (feasibility for 2 years of time to conduct; fits with ability to carry out) Opinion leaders for region
The understanding of how contextual factors influence the process of implementation is important but not clearly discussed, some concepts are not clearly operationalized, and records review is not well linked to the model and may not cover all programs.	Conceptual framework/ contextual factors	Will address this with some literature: Aarons 2011 Dreisinger HER 2010 RE-AIM examples Kerner articles? Any other good examples/citations from the literature are welcome
Some reviewers also concerned about the inclusion of a variety of chronic diseases in the study but others consider it adequate because the overarching themes can apply to different diseases.	Disease/risk factors under study	This is assigned as a cancer grant so I think we should go ahead and focus this on cancer prevention and early detection (and drop the "other" chronic diseases.
Significance		
The investigators fail to make a strong case for the value of conducting a cross-national comparison. Certainly, the four countries selected – US, Australia, Brazil and China – vary on potentially important characteristics. However, there is little discussion of why existing literature from high-income countries do not inform dissemination of EBCDPs related to these variables.	Rationale for the four countries	Team: This is a big one where I need your help. (Pauline, I have your earlier notes on this). Pls. give me any ideas on how to address this one. I will start on a revision tomorrow so would appreciate input on this topic, in particular, within the next week.

Sample introduction pages

Introduction to the Revised Application

We thank the reviewers for their helpful comments that have greatly strengthened this revision.

SIGNIFICANCE

Concern 1: The study is limited by the Aim 3 outcomes (*i.e.*, too much dependence on a single "usefulness" variable) and there are not clear enough links between the Aims. Response: To address this issue, we have made three key modifications; we have: 1) described a more robust set of outcomes (leading to a new "research translation" variable) (section C.9.d.), 2) shown the linkage of the outcomes under study with research utilization and policy change (section C.9.d.), and 3) better linked what will be learned in Aims 1 and 2 with the activities and outcomes in Aim 3.

Concern 2: The study is subject to many confounders (including the long time interval between the variables measured and diabetes-related behavior change). Response: We are not seeking to link our study to changes in diabetes rates or diabetes risk factors. However, we have more clearly linked the variables measured with use of research evidence in the policy process (section C.9.d.). Our mixed-effect models will be able to account for multiple contextual variables (section C.9.i.).

INVESTIGATORS

Concern 1: Some collaborators had biosketches in the previous format. Response: All biosketches are now updated and in the new format.

INNOVATION.

Concern 1: There is concern about whether the usefulness variable is predictive of policy-related outcomes. Response: The rationale and description of outcomes has been significantly modified. Importantly, our outcomes should be considered "decisionistic," leading toward use of specific information in the policy process, and not causal (a cause and effect relationship with a specific policy change) (section C.9.d.).[1-3]

Concern 2: Some reviewers considered the involvement of actual policymakers or advocates was not sufficient. Response: We have added two new consultants from various policy sectors and advocacy groups (Table 3).

APPROACH

Concern 1: Only one article is cited showing justification for the usefulness variable; the aims need to better justify the trial in Aim 3. Response: As noted above, we have modified the outcomes related to Aim 3 to fully address a set of "decisionistic" variables (section C.9.d.). These outcomes are based on a series of large articles on policy implementation and outcomes.[3-14]

Introduction to the Revised Application

We believe this revision addresses all of the points raised (impact score = 30; 13th percentile). We have revised the text in as much detail as possible given page limits. Left-hand brackets denote changes.

Selection of the four countries. There were questions about our choice of the four countries where the study will be conducted (Australia, Brazil, China, United States). Response: We have added details (section C.4.) on the reasons for choosing the four countries. The World Bank classifies 214 countries in its low, middle, and high income categories[1] and therefore, the number of study combinations is vast. In brief, the four countries are selected based upon the following reasons: 1) key countries based on their positions as opinion leaders in their regions,[2-6] resulting in significant potential for cross-country transfer of approaches,[7-9] 2) variation on important contextual variables (i.e., variables in Figure 1 that span individual factors to political/economic factors), 3) high rates of cancer and other chronic diseases,[10] 4) significant immigration of Latino and Chinese individuals to the US, and 5) feasibility to carry out our ambitious study in the time frame described. Two countries have more advanced approaches to evidence-based cancer prevention (EBCP) (Australia, United States) and two are in an earlier stage (Brazil, China). The stage of development of EBCP across the countries, as well the differing contextual variables will lead to significant knowledge on measurement methods and patterns, along with initial data on EBCP that should set the stage for future projects allowing scale-up of findings.

Reasons for studying middle-income countries. There were questions about whether the existing literature from high-income countries informs dissemination/translation of EBCPs to middle-income countries. Response: Three key issues are relevant. First, while there is a growing literature on dissemination of EBCPs in high income countries,[11-14] the literature for middle-income countries is sparse.[7, 15, 16] Second, existing cross-national studies show that contextual variables vary considerably across countries.[7, 16-18] There is literature specifically in cancer prevention showing how lessons on dissemination differ by setting and country.[12, 19] And third, there are approaches that can be translated between countries (e.g. adaptation, scaling up) that deserve attention.[7-9]

Conceptual framework and contextual factors. There was a concern that the conceptual framework was not informative enough, by not showing how each contextual factor was linked to each specific stage. Response: The stages in our conceptual framework build upon existing frameworks,[20-23] and can be reliably measured as noted in recent research from our team (at least in the US).[24] Examples of contextual factors that may be important are described in two places (sections A.2. and C.3.). In addition, one reviewer seemed to be asking us

1. Introduction

This is the second submission of R03 CA 125837-01, "Early life anthropometry, IGF pathway polymorphisms, and colorectal cancer risk. The overall aim of this project is to determine whether early life body size, including birthweight are associated with colorectal cancer risk, and to evaluate whether this association may be mediated in part by genetic variation in IGF-I and IGFBP-3 genes. We appreciate the reviewers' thoughtful comments and feedback on our proposed aims and their acknowledgement of the strengths of our application. We have addressed their specific critiques below and in the main text of this resubmission.

Minority representation: One reviewer expressed concern over the lack of representation of African American and Hispanic individuals in our study population, thus affecting the generalizability of the results. Several minority populations, including those mentioned, have higher rates of diabetes and possibly higher circulating insulin and IGF-related biomarkers; the need to understand the factors contributing to the burden of disease within these populations is important and clearly warranted. However, few cohorts with the necessary sample size required to study our hypotheses within an individual minority population exist. Although the minority representation is limited, we can compare the birthweight and body size distributions between Caucasians and African Americans (3%). The homogeneity of our study population with respect to ethnicity/race is also a strength of our proposal, because the lack of ethnic variation minimizes the potential impact of population stratification in the genetic analysis (Aim 3). The results from this proposal will provide the preliminary work/background and impetus for evaluating our hypotheses in minority populations.

Sample size and sex-specific hypotheses: One reviewer noted that that the influence of early anthropometric measures on later risk of colorectal cancer may vary by gender, asserted that this possibility was not adequately addressed in our proposal, and suggested that we did not adequate power to look within each sex-specific cohort. Since our original proposal, we have obtained several more years of follow-up data on both of

Are all submissions to RFAs new applications?

- For most RFAs that have a single receipt date, all applications will be considered new
- Some RFAs have multiple receipt dates and allow resubmission applications to the same RFA (designated with the grant number suffix “A1”)
- The text of each RFA should clearly state which types of applications are allowed (new, resubmission, renewal, revision)

What to do if your revision (A1) is not funded?

- Consider the scores of the previous application, reviewer comments, and advice from NIH program staff
- If you were close, go for it
- When submitting the application as new, use the comments from reviewers to reshape your application, but don not reference previous review in the new application
- If the previous application was a renewal resubmission, the new application should not include a Progress Report or a Progress Report Publication List
- Work from the prior funding period should be presented as preliminary data and/or rationale for the proposed research

Learning to Review Grants

Being a good reviewer: Do's

- Start early!
  - It will take some time to go through each assigned application to identify conflicts and to formulate a thoughtful analysis of the strengths and weaknesses of each review criterion
- Keep all materials strictly confidential
- Notify your SRO immediately if you should discover additional conflicts once you begin going through the applications
- Use the specific template provided by your SRO in meeting materials
- Use appropriate review criteria for that Funding Opportunity Announcement—some mechanisms use the standard NIH review criteria only, others have additional criteria that must be considered in your evaluations

Being a good reviewer: Do's

- Refer to a specific aim to provide context, but do not cut and paste sections of the application into your critiques
- Address the score-driving strengths and weaknesses of the project under review for each criterion
- Make sure that your written critiques reflect your numerical criterion scores
- Consider progress during the current funding period for renewal applications
- Consider the applicant's response to prior critiques for resubmission applications
- Post early so others may read your critiques

Being a good reviewer: Don’ts

- Don’t discuss the grant applications with other review panel members before the meeting
- Don’t repeat the applicant’s description verbatim
- Don’t try to rewrite an application. If you want to provide guidance to the PI about an alternate approach, put such a statement in the last template box called ‘Additional Comments to Applicant.‘
- Don’t make unreasonable demands (e.g., do not penalize an R21, which is an exploratory project to collect pilot data, for not having the preliminary data required of an R01)

Summary and assorted tips

- Learn and apply team science principles
- When planning your revision, contact the Program Officer!
- If you have a good idea, stick with it!
- For early reviewers, practice one review with a seasoned reviewer
- To sign up, early career reviewer (ECR) program: http://public.csr.nih.gov/ReviewerResources/BecomeAReviewer/ECR/Pages/default.aspx

Comments & questions