

# **Origins of the “Efficacy” RFA; Initial Responses by PIs and by Reviewers; A personal view.**

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**Understanding interventions that encourage minorities to pursue research careers:  
Major questions and appropriate methods.**

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## Clif Poodry's Challenge:

How can extrinsic reward be used to promote intrinsic motivation?



## The “Efficacy” RFA:

- Test the assumptions about the programs that MORE supports, e.g., laboratory research experience, mentoring, academic enrichment, by...
- Creating an R01 mechanism to fund research that tests the efficacy of interventions (“extrinsic rewards”) designed to stimulate students (“promote intrinsic motivation”) to enter careers in biomedical and behavioral research.
- Will the research provide insights that inform modifications in program practices that will increase entry of students into biomedical and behavioral research careers?

## Some Pls' Questions:

- Retrospectively, which were the critical positive and negative **motivating factors** among alumni of the MORE Programs who are now in biomedical research fields, compared with those who have abandoned the fields?
- Among college students, which factors and experiences do they claim affected their **decision to enter or avoid** a biomedical research career (e.g., interaction with mentor; research experience)?
- Among graduate school entrants, were there optimal times of their entry into a research **laboratory experience**?  
If yes, which are the essential **personal characteristics** of those students, and of their **research** and/or **academic experiences**?
- Is career entry increased if student **self-efficacy** is bolstered by:
  - providing information on skills necessary for success (e.g., formulating research questions, laboratory management, bioethics, publishing, grant writing, scientific presentation)?
  - providing laboratory skills course?
- How do students' perceptions of the **social culture** of a research-intensive university vs. a comprehensive university affect their career choice?

## Some Reviewers' Questions:

- Is the research question **meaningful** (e.g., not program assessment)?
- Is the **rationale** for the study clear?
- Is the research question **heuristic** (e.g., testable hypothesis)?
- What is the likelihood that the proposed intervention will have a **measurable effect** (e.g., too brief duration of intervention)?
- Are the outcome measures **valid indicators** of career entry (e.g., graduate program entry; persistence of career *interest*)?
- Are the **comparison groups** appropriate (e.g., + / - intervention; self-selection into MORE programs; accept, non-accept, decline)?
- Is the research **sensitive to unique qualities** and issues (social/cultural/economic) of the relevant populations (e.g., stereotype threat; home pressures on Latinas; women=minorities)?
- Is the **design** of questionnaires and interviews appropriate?
- Is the **statistical analysis** (e.g., power, HLM, probit, survival analysis) appropriate?
- What is the **conceptual basis** and **relevant literature** for the proposed research?

(cont'd)

## Some Reviewers' Questions (cont'd):

- Are **inherent pitfalls** of the intervention addressed appropriately?

In a multi-component intervention, how is a **critical element** (e.g., mentoring, social support, research) identified?

Students are involved in not just the intervention, but in **multiple programs**;

In a focus group, how does PI address possible **social pressure** against revealing what one doesn't like?

Would the research findings be **generalizable**?

Will the obtained data be **manageable**? (e.g., 500 90-minute interviews per year)

Are the interview questions **unrealistic**? (e.g., veracity of recall: describe elementary school experiences)

Does the PI have a **track record** in the type of research proposed; if not, does the research team provide the **necessary expertise**?

Is the measurable outcome **relevant**? (e.g., number of publications)

Is the PI **responsive** to the prior Summary Statement?

Is the research **ethical**? (e.g., students asked to read others' interviews)

Is there **sufficient involvement** of the PI in the research?

Is the proposal just a strategy to **fund a program**?

## Impetus for this conference:

Because of recurring types of limitations in the applications re:

- **Research as distinct from evaluation**, and/or
- **Familiarity** with the training programs, and/or
- **Sensitivity** to sociocultural issues, and/or
- **Rationale**, and/or
- **Hypotheses**, and/or
- **Conceptual bases**, and/or
- **Comparison groups**, and/or
- **Statistical methodology**, and/or
- **Design pitfalls**,
- etc.,

this conference was designed to provide, to potential applicants,

**clarification of the goals and objectives of the RFA,**  
and

**encouragement to establish research teams with the necessary scope of expertise.**