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# Analysis of Competitive Internal Research Grants for Investigators - Does it Make a Difference?

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## INTRODUCTION

In 2010 and 2011, Loma Linda University implemented competitive internal grant mechanisms for research investigators. The Grants for Research and School Partnerships (GRASP) and Grants to Promote Collaborative and Translational Research (GCAT) were developed to enhance research collaboration between schools, and to provide an opportunity for investigators to obtain preliminary data for publications and external funding opportunities. Although there are unique qualification distinctions between the GRASP and GCAT, they are similar in the review process and scoring. We adopted with slight variation, analogous to the National Institutes of Health (NIH) R21 requirements, the NIH review process and scoring system. The focus of this presentation is to describe the distinctions between the two mechanisms, preview a summary of the review, and scoring criteria, and understand whether internal research grants make a difference.

## GRASP & GCAT

Mechanism	GRASP	GCAT
<b>Number of PIs</b>	2 (must be from 2 different LLU schools)	2 (1 from Basic Science and 1 clinician) from SOM
<b>Funding</b>	\$75,000 (LLU)	\$75,000 (Departments 50/50)
<b>Project Period</b>	Up to 24 months	Up to 24 months
<b># of Awardees</b>	3	Up to 6
<b>PI Salary</b>	NO	NO
<b>Budget Restrictions</b>	Only non-faculty salaries and wages are permitted. No equip. purchases \$5,000 or more), travel expenses, or IDC are allowed.	Only non-faculty salaries and wages are permitted. Major equipment (\$10,000 or more), travel expenses, or IDC are allowed.
<b>Performance site</b>	Conducted on the Loma Linda campus	Studies must be conducted within the School of Medicine
<b>Publications (Active in research)</b>	A minimum of 1 peer-reviewed publication within the past year by either PI	A minimum of 1 peer-reviewed publication within the past year by either team member
<b>Prior Awardees</b>	a. Published/ accepted for publication 1 or more manuscripts; or b. submitted at least 1 extramural application	a. Published/ accepted for publication 1 or more manuscripts; or b. submitted at least 1 extramural application
<b>Revised application</b>	Include 1 page introduction to revised application	Include 1 page introduction to revised application

## REVIEW CRITERIA

Awards are based primarily on scientific merit, including significance, innovation, originality of approach, technical merit, and consistency with institutional interests and goals. The quality of collaboration, the PI leadership plan, justification of the budget, and potential for future funding will also be considered. In the absence of preliminary data, strong literature support for the planned study is required. The focus is on funding high-impact, paradigm-shifting, innovative projects. Consequently, the application must clearly describe the potential impact of the project on the field and highlight its innovative elements. Applications are expected to appropriately address issues of rigor and reproducibility.

## SCORING CRITERIA

- Reviewers critically evaluate and score applications.
- Scoring system uses a 9-point scale (1 through 9).
- A score of 1 indicates an exceptionally strong application with essentially no weaknesses. A score of 9 indicates an application with serious and substantive weaknesses and very few strengths. A score of 5 is considered average.
- This scale is used to score the five individual Review Criteria (i.e., Significance, Investigator(s), Innovation, Approach, and the Overall Impact).
- Reviewer Critique - for each Review Criterion notable strengths and weaknesses of the application are described in a few sentences.

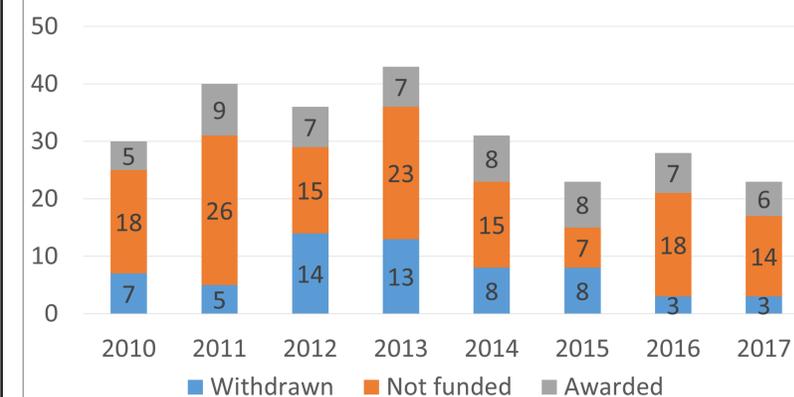
Impact	Score	Descriptor	Additional Guidance on Strengths and Weaknesses
High	1	Exceptional	Exceptionally strong with essentially no weaknesses
	2	Outstanding	Extremely strong with negligible weaknesses
	3	Excellent	Very strong with only some minor weaknesses
Medium	4	Very Good	Strong but with numerous minor weaknesses
	5	Good	Strong but with at least one moderate weakness
	6	Satisfactory	Some strengths but also some moderate weaknesses
Low	7	Fair	Some strengths by with at least one major weakness
	8	Marginal	A few strengths and a few major weakness
	9	Poor	Very few strengths and numerous major weaknesses

### Additional Scoring Information

**Non-numeric scores:** CF = Conflict of Interest; AB = Abstention  
**Minor Weakness:** An easily addressable weakness that does not substantially lessen impact  
**Moderate Weakness:** A weakness that lessens impact  
**Major Weakness:** A weakness that severely lessens impact

## OUTCOME

GRASP & GCAT Submissions



2010 through 2017 total number of submitted applications. Withdrawn applications were due to various reasons; for example, did not meet the deadline and/or did not meet the qualifications to submit.

Year	Grants	Awards	Total\$	Manuscripts (submitted)	Manuscripts (published)	Abstracts (published)
2010	17	6	\$2,563,775	0	17	3
2011	0	0	\$0	0	0	0
2012	12	3	\$42,000	0	14	36
2013	5	1	\$25,000	3	3	0
2014	2	2	\$75,000	0	0	2
2015	0	0	\$0	0	0	0
<b>Total</b>	<b>36</b>	<b>12</b>	<b>\$2,705,775</b>	<b>3</b>	<b>34</b>	<b>41</b>

2010 through 2015 (partial year due to no-cost-extensions) external grant and publication results.

## CONCLUSION

Data pooled from 2010 to 2015 demonstrates success rates for grants submitted (26%), awarded (9%), published manuscripts (25%), abstracts submitted (30%) and total dollars invested (\$3,300,000) compared to total dollars awarded (\$2,705,775). We believe that success rates and dollars awarded will increase over time. We feel strongly that the intangible benefits to our investigators such as, forming collaborations, training in external grant submissions and grant writing experience is important to the overall success of our research programs. We are currently evaluating and developing new GRASP mechanisms that will focus on mentoring Early Stage Investigators and the dedicated use of our core facilities.