Review of the General Research Fund FY13-FY15: Final Report

Submitted by the Faculty Senate Research Committee
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Faculty Senate Research Committee, FY15-16
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Introduction

This report pertains to the following specific charge given to the FSRC Committee by the Faculty Senate:

- Conduct three-year review of the GRF in Spring 2016

GRF Review Related Activities

- The FSRC Committee reviewed carefully the previous three-year review report completed in FY13.
- After reviewing the report, the FSRC Committee decided to use quantifiable metrics, and developed the FY13-15 GRF reporting tool (Table 1) for requesting data from GRF units (Attached: FY13-15 GRF reporting Tool). In developing the tool, the Committee followed the recommendations put forward in the FY 13 Report:

  > The FSRC suggests for future reviews to provide all entities with a template (such as a spreadsheet) that includes an accounting of all funds distributed. Such a template still needs to allow for entity particularities regarding different scholarly practices and products as well as entity uses of GRF funds. The FSRC needs to make clear its expectations about reporting and accounting for all funds so that entity reports can focus on assessing the impact of GRF funds.

- The tool was sent out to all GRF units on 19 November 2016 by Kathy Reed of University Governance. These units include: School of Architecture, Design & Planning; School of Business; School of the Arts (CLAS); Behavioral Sciences (CLAS); Humanities (CLAS); Life Sciences (CLAS); Physical Sciences (CLAS); Social Sciences (CLAS); School of Education; School of Engineering; School of Journalism; School of Law; School of Music; School of Pharmacy; and University Libraries.
- Reminders were sent out to the units 2 weeks and one week before the submission deadline. In the reminders, the importance of reporting deadlines was emphasized and it was noted that the failure to provide the required data could negatively impact unit allocation.
- All GRF units provided the requested data to Kathy Reed by the deadline of 11 December 2015, providing a reasonable amount of time to review and analyze the data. Kathy Reed compiled

the data provided by the units, and sent the data to FSRC Chair on 22 December 2016. (Attached: GRF Recap 20151221 with memos from CLAS, Libraries and the School of Education)

- Patti Steffan from KU Research provided a detailed spreadsheet of entity awards and allocations for FY13-FY15.
- FRSC Chair forwarded the data received from Kathy Reed and Patti Steffan to the Committee members on 06 January 2016 for their review.
- FRSC Chair analyzed the data and developed a draft report to share with the Committee on 22 January, 2016 meeting. Based on the feedback received from the Committee, FSRC Chair prepared this report.

Table 1: Items included in the FY13-15 GRF reporting tool

1. FY13-FY15 Students in your unit	
1.1	Average number of students in the graduate program/s of your unit during FY13-FY15
1.2	Average number of PhD students in the graduate program/s of your unit during FY13-FY15
2. FY13-FY15 Faculty in your unit	
2.1	Average number of tenure-track faculty members in your unit during FY13-FY15
2.2	Average number of tenured faculty members in your unit during FY13-FY15
2.3	Average number of all other types of faculty members in your unit during FY13-FY15
2.4	Average of the total number of faculty members in your unit during FY13-FY15
3. Eligibility for GRF in your unit (use only one of the options below)	
3.1	Tenure-track faculty members only (y/n)
3.2	Tenured faculty members only (y/n)
3.3	Tenured and tenure-track faculty members only (y/n)
3.4	Any faculty member (y/n)
4. Submitted and funded GRF proposals in your unit during FY13-FY15	
4.1	Total number of proposals submitted for GRF funds
4.2	Total number of proposals funded from GRF funds
4.3	Number of funded proposals submitted by tenure-track faculty members
4.4	Number of funded proposals submitted by tenured faculty members
4.5	Number of funded proposals submitted by other faculty members
5. FY13-FY15 GRF Priorities in your unit	
5.1	Total number of funded proposals used in early-career
5.2	Total number of funded proposals used in pilot studies
5.3	Total number of funded proposals that used the fund to match external funds
6. Methods and criteria used for evaluation and funding of GRF proposals	
6.1	Describe GRF application evaluation procedures
6.2	List GRF application review criteria
7. GRF accomplishments	
7.1	Number of GRF-related peer-reviewed publications
7.2	Number of GRF-related peer-reviewed conference presentations
7.3	Number of GRF-related peer-reviewed creative projects or products
7.4	Number of GRF-related proposals submitted for external funding
7.5	Number of GRF-related proposals received external funding
7.6	Number of any other important GRF-related outcomes (please list)

Data Analysis

The analyses of the GRF-related data collected from the GFR units were guided by the following questions:

1. How are GRF allocations related to teaching loads measured by the number of graduate students per faculty (tenure-track, tenured, lecturers, adjuncts, and any other teaching and/or research faculty) and the number of PhD students per graduate faculty (tenure-track and tenured)? We focus on graduate and PhD teaching loads for they are easily associated with research, while acknowledging the fact many faculty teaching undergraduate courses also do research.
2. How are GRF allocations related to research productivity measured by the total number of peer-reviewed publications and the total number of all GRF accomplishments, and by the number of peer-reviewed publications per graduate faculty and the number of all GRF accomplishments per faculty?
3. How are GRF allocations related to GRF-related research efforts measured by the total number of GRF proposals submitted and by the number of GRF proposals submitted per faculty?

The analyses used descriptive statistics, as well as simple regression models with GRF allocation as the predictor variable. Scatterplots with trend lines were used to visually represent the relationships between the predictor and a dependent variable. The r^2 values were used to show the strength of the relationships.

GRF allocations and graduate teaching load

Except for a few professional schools, the graduate teaching load per faculty is generally higher for the professional schools than it is for the CLAS units. The load remains very high for the Schools of Education and Law when compared with the other GRF units (**Figure 1**). University Libraries do not generally teach for-credit courses.

Except for the School of Education (with 5.416 PhD students per graduate faculty), the differences in the PhD teaching load among the units are less remarkable but may not be insignificant. The load varies from 0.292 for the School of Journalism to 2.551 for the School of Music per graduate faculty. The School of Law and University Libraries do not have PhD students (**Figure 2**).

Contrary to teaching loads, *GRF allocations for the units appear to favor more the CLAS units than the professional schools*. Some of the CLAS units with low teaching loads are allocated relatively high GRF dollars. Notable among these units are Life Sciences, Physical Sciences, Social Sciences, and the School of the Arts (**Figure 3**). *It is worth noting here that the amount GRF allocation per faculty for the GRF units varies between $111 and $981*. The lowest amount GRF allocation per faculty is found in Behavioral Sciences (CLAS), and the highest is found in Life Sciences (CLAS). Both of these units show relatively low graduate and PhD teaching loads.

To investigate this further, we ran regression models with GRF allocation as the predictor variable and graduate and PhD teaching loads as the dependent variables (**Figures 4 & 5**). The relationships between these variables are very weak (r^2= .079 and .025). In one of the two cases, however, a negative trend is clear: *As GRF allocations increase graduate teaching load decrease* (**Figure 4**). In contrast, the trend line representing the relationship between PhD teaching loads and GRF allocations remain somewhat flat, indicating that GRF allocations are poorly associated with PhD teaching loads (**Figure 5**).

According to these findings, *GRF allocations among units may not be equitable in relation to graduate teaching loads measured by the number of graduate students per faculty and the number of PhD students per graduate faculty.* However, there are several points to be made here. First, in many GRF units it is difficult to separate graduate and undergraduate teaching. Faculty often teach both graduate and undergraduate courses. In some units, faculty may have more undergraduate than graduate teaching loads. Second, it is simplistic to assume that only faculty teaching graduate courses do research even though research often involves more graduate than undergraduate students. In fact, in many GRF units faculty teaching undergraduate courses run active research programs. The fact that all tenured and tenure-track faculty must do research is also indicated by the University's typical 40/40/20 faculty appointment practice. Finally, teaching efforts appear to vary from unit to unit. Teaching may take more time in some units than others. Given these limitations, the findings reported above appear to be less relevant to GRF allocations. For GRF allocations, it may be necessary to find a better way to measure teaching load taking into account both graduate and undergraduate teaching loads and faculty research engagements.

GRF allocations and research productivity

The average funding amounts for the GRF units and the numbers of GRF-related peer-reviewed publications of the units show very strong positive correlation (r^2= .901), indicating the GRF units with more GRF funding are more productive as measured by the number of peer-reviewed publications (**Figure 6**). In this case, the School of Law was excluded from the analysis because the faculty of this school do not produce peer-reviewed publications.

The average funding amounts per graduate faculty for the GRF units and the numbers of GRF-related peer-reviewed publications per graduate faculty of the units also show moderately strong positive correlation (r^2= .577), indicating that that the graduate faculty members are more productive in units receiving more GRF funding per graduate faculty (**Figure 7**).

Additionally, the average funding amounts for the GRF units and the numbers of all GRF-related outcomes of the units show strong positive correlation (r^2= .738), indicating the GRF units with more GRF funding are more productive as measured by the number of all GRF-related outcomes (**Figure 8**).

Furthermore, the average funding amounts per faculty for the GRF units and the numbers of all GRF-related outcomes per graduate faculty of the units also show moderately strong positive correlation (r^2= .569), indicating that that the faculty members are more productive in units receiving more GRF funding per faculty (**Figure 9**).

These findings—*if a unit is given more money, it will produce more*—is interesting, because research and/or publication culture is not similar across GRF units. It simply takes more time to publish in some disciplines than it does in other disciplines. There may be more venues to publish research articles in some disciplines than there are in other disciplines. Money spent on research before a publication is made is much higher in some disciplines than others. Given these facts, it is not easy to interpret the findings being reported here. Moreover, it raises the questions of how the GRF money was allocated in the first place, and why did some units receive more money per faculty than other units?

GRF allocations and GRF-related research efforts

The average funding amounts for the GRF units and the numbers of GRF proposals submitted by the faculty members of the units show strong positive correlation (r^2= .722), indicating that the faculty

members' willingness to apply for funding is related to the amount of GRF funding available in the unit (**Figure 10**).

However, the average funding amounts per faculty for the GRF units and the numbers of GRF proposal per faculty of the units show weak positive correlation (r^2= .269), indicating that that the faculty members' willingness to apply for GRF funding may be weakly related to the amount of GRF funding per faculty (**Figure 10**).

These findings may indicate that the GRF allocation per faculty may not be a good indicator of how willing the faculty would be to apply for the funding. Rather, they may take decisions to apply for GRF based on the total allocation of fund available in their units. Put simply, they may decide not to apply if the total GRF allocation for the unit is small. Having said this, the FSRC feels that it is important to look at this a little more holistically, perhaps beyond the data set used for this report. An important factor (though hard to measure) is how the perceived or actual availability of external funding might impact a faculty member's motivation in applying for GRF funds. Since faculty members' willingness to apply for GRF funding might not be tied exclusively to the amount of funding (per faculty) available in the unit, it may be necessary for the next GRF review to find a way to try to measure that--e.g., by looking at the total number of external funding proposals submitted by a unit, weighed against the number of GRF proposals submitted to the unit.

Summary and discussion

1. Faculty graduate and PhD teaching loads do not affect how GRF allocations are made. If anything, GRF units with less teaching loads get more GRF money based on our analysis. In general, CLAS units get more money than professional schools in relation to faculty graduate and PhD teaching loads. This finding, however, may not be directly relevant to GRF allocations because our current data do not take into account undergraduate teaching loads in relation to faculty research activities.

2. GRF units with more allocations show better productivity, despite the fact that research and publication culture is not similar across GRF units. This finding, however, is important for it may help perpetuate the notion 'why take away funding from a unit that produces more'. As a result, we do not know how a unit will improve research productivity if it gets more GRF money than the amount it receives now. It may be a worthwhile experiment to allocate more funds to the units with low allocations to find out if these units would improve research productivity.

3. According to the findings of this study, it is not the amount of GRF allocation per faculty member that determines how many GRF proposals the faculty members of a unit will submit. Rather, it is the total amount of GRF allocation for a unit that determines how many GRF proposals the faculty members of a unit will submit. If the unit allocation is small, faculty members of a unit may lose interest in submitting GRF proposals. Therefore, it may be important to identify a critical threshold for GRF allocation. The School of Journalism receives $4,016 and University Libraries receives $6,044. If anything, these GRF allocations do not help improve faculty morale in these units. However, this interpretation of the finding needs to be treated some caution as well. That is because the perceived or actual availability of external funding may also impact a faculty member's motivation in applying for GRF funds.

Recommendations

According to our findings, graduate teaching loads, research productivity, and research efforts, as measured here, appear to show some consistent relationships with GRF allocations made during the last three academic years. These relationships are found despite more persistent disciplinary differences that have existed concerning teaching loads, research productivity, and research efforts. These differences may be the reason why many members of the FSRC believe that GRF allocations are not sensitive to disciplinary differences and that a more prudent method for GRF allocations is necessary.

Since it may take some time for the committee to develop such a method for GRF allocation, the committee does not recommend any changes to GRF allocation for FY 16-17. The committee recommends that one specific charge for the FSRC committee in FY 17-18 should be *to determine a method for GRF allocations that helps overcome a perception of disparity among units, that enhances a more effective way to use of the fund, and that is more dynamic and responsive to changing disciplinary research contexts within and outside the University*.

Concerning the above, the FSRC committee suggests the following options for future considerations:

Option 1: Consider developing a more centralized model for GRF allocations based on the current NFGRF (New Faculty General Research Fund) model. The amount of funding available from GRF is generally small. While some faculty members may find the amount less useful, others may find the amount very useful for their research projects. A more centralized model for GRF allocations may open up more opportunities for those who need more help to do research. This may also help spend less GRF dollars in units that view GRF as nonessential to their research activities.

Option 2: Consider developing a GRF allocation model that is not fully centralized as it is with NFGRF or fully decentralized as it is now. Instead of having 15 different GRF units, it may be more useful to have fewer GRF units created based on compatible research agendas. Each of these larger units should allocate funds through a request for proposals to promote competition. They should also create GRF review committees for funding allocation, thus creating a more level playing field for faculty with compatible research. In this model, it is also possible for faculty members to choose where they want to apply for research funding.

Option 3: Allow FSRC to reallocate some portion of the GRF money to the units that have historically received less money from GRF on a rotational basis. This will at least create more opportunities for these units at certain intervals. This will also allow FSRC to monitor if more fund results in more research outcomes in these academic units.

Figure 1: Graduate teaching loads by GRF units

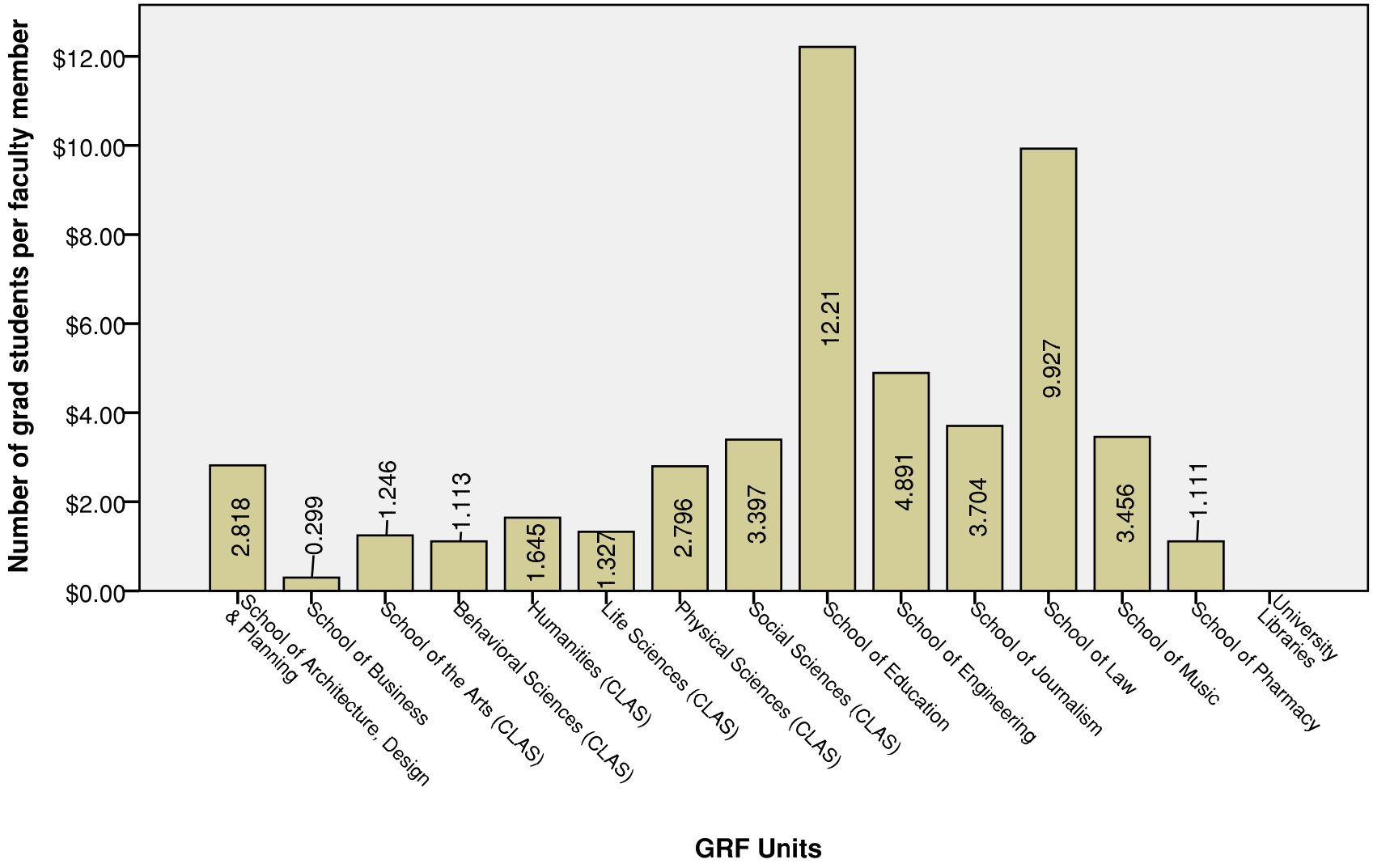

Figure 2: PhD teaching loads by GRF units

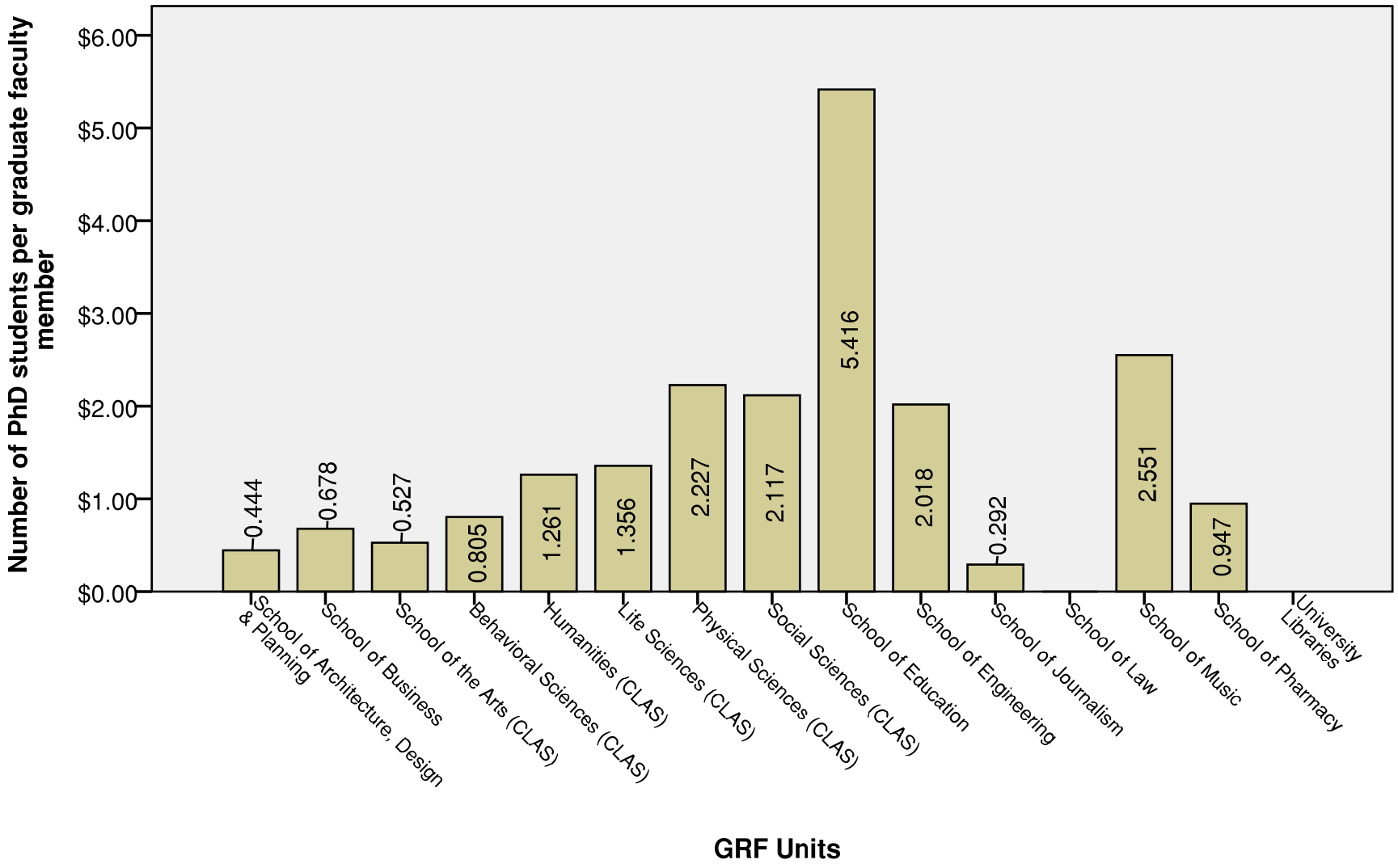

Figure 3: GRF allocations per faculty by GRF units

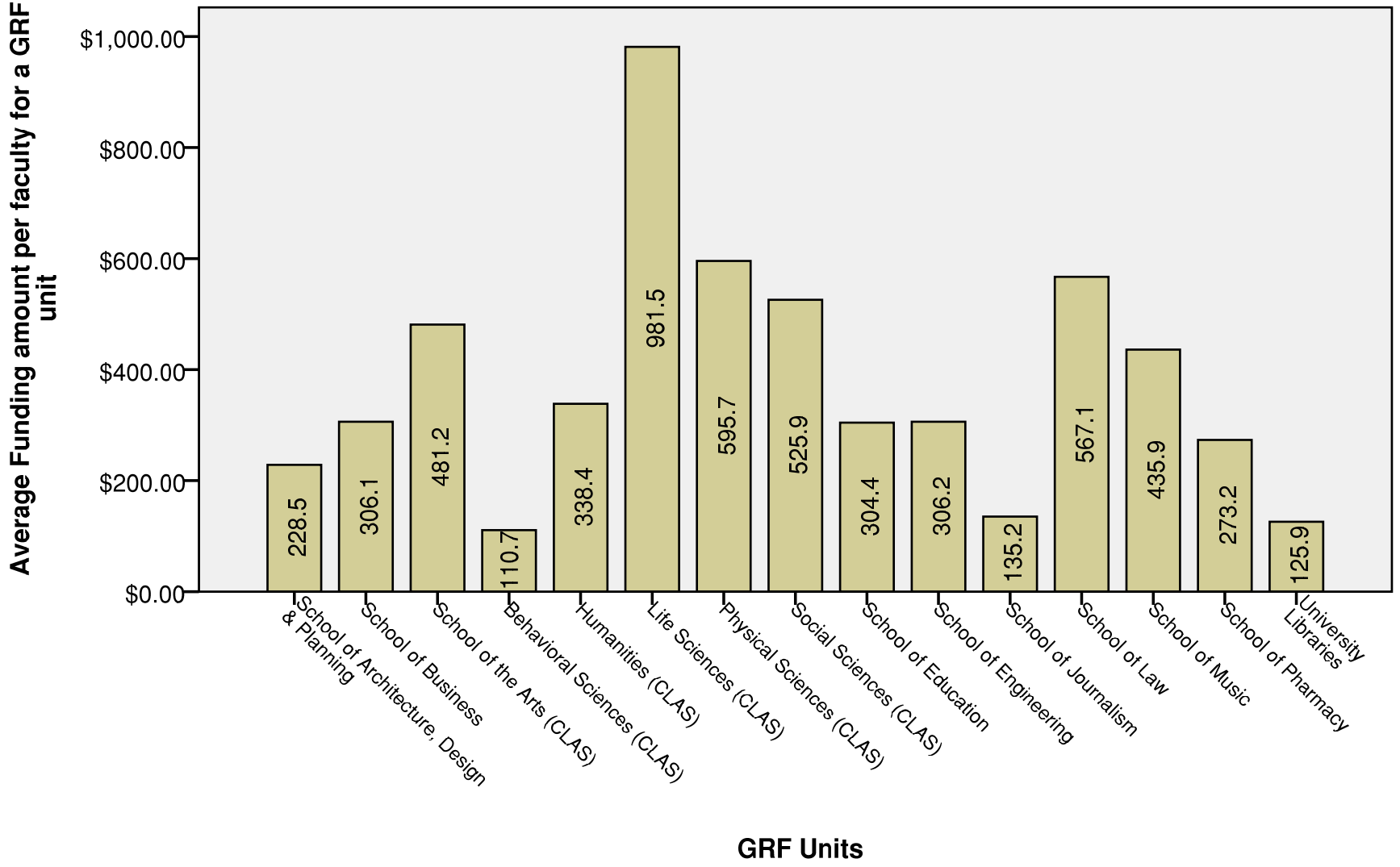

Figure 4: The relationship between GRF allocation and graduate teaching load per faculty by units

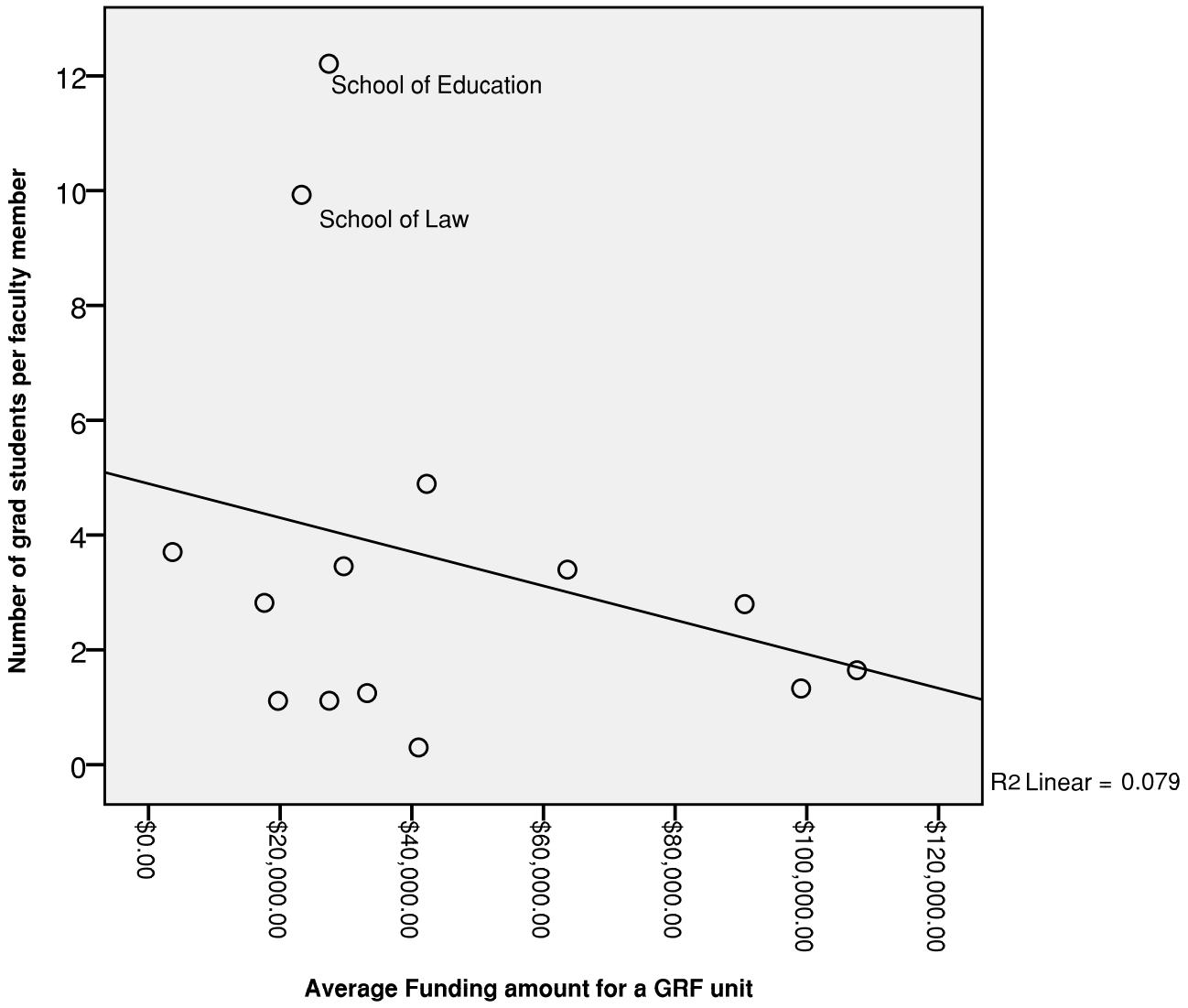

Figure 5: The relationship between GRF allocation and PhD teaching load per graduate faculty by units

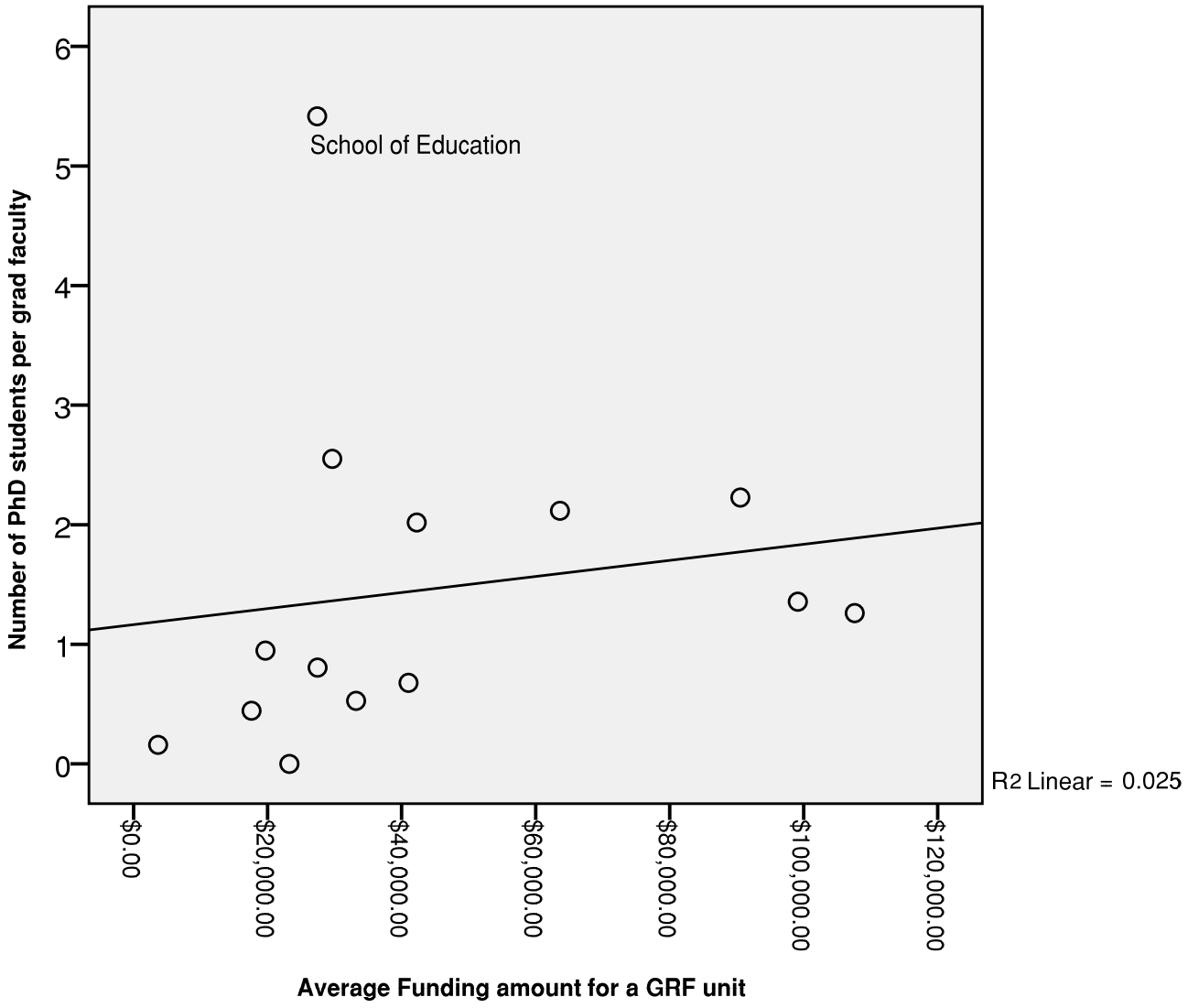

Figure 6: The relationship between GRF allocation and the total number of peer-reviewed publications by units

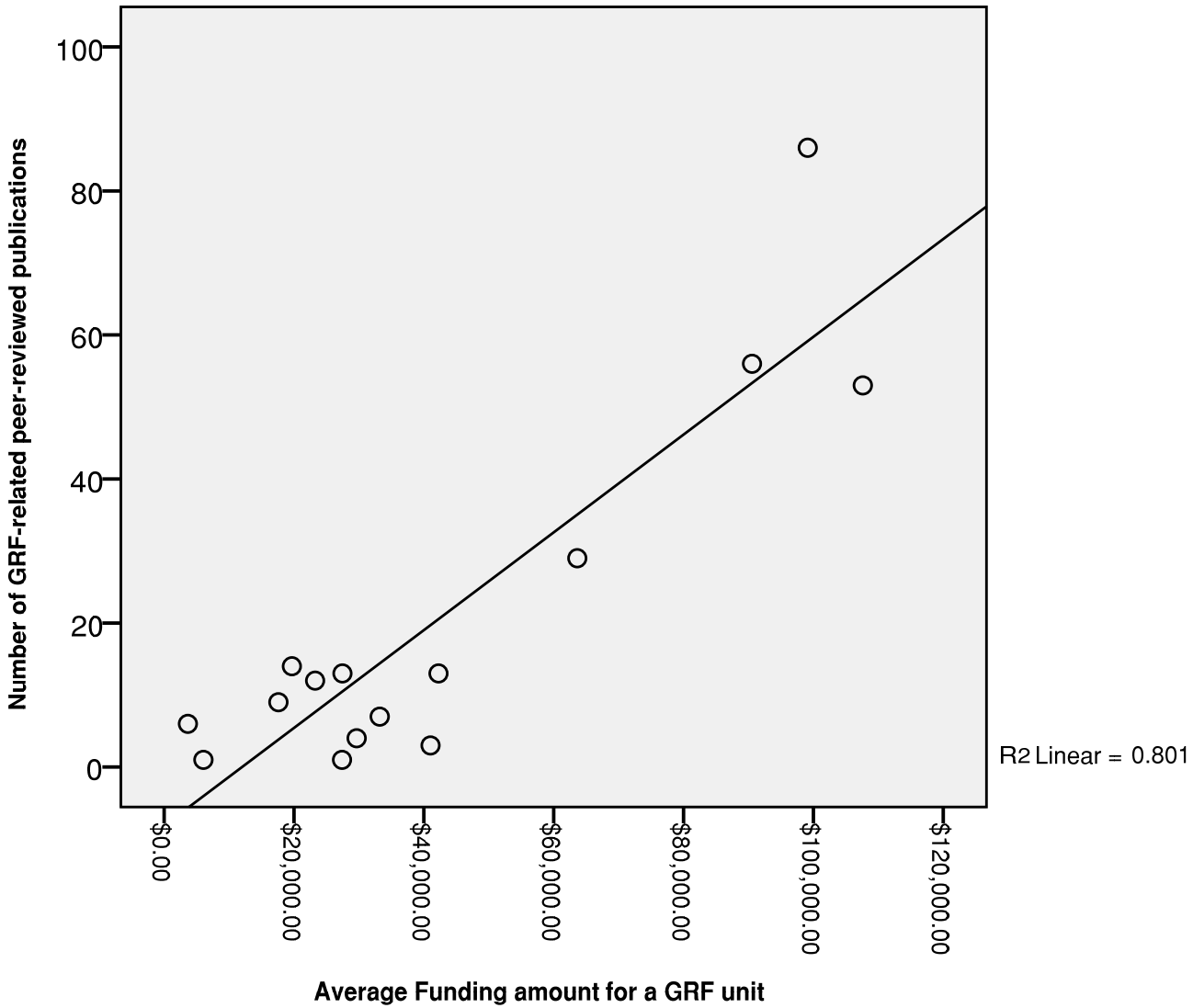

Figure 7: The relationship between GRF allocation and the total number of peer-reviewed publications per faculty by units

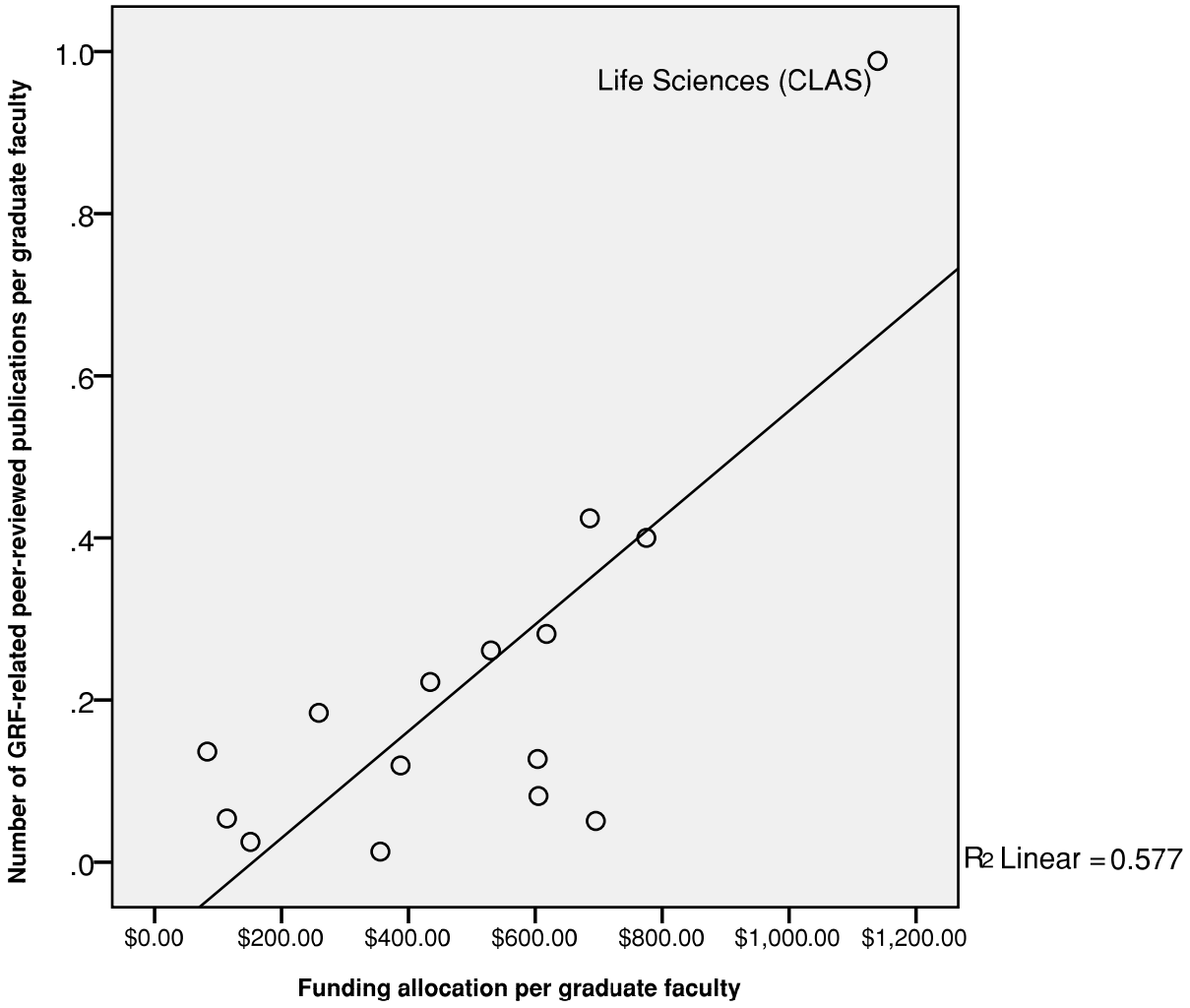

Figure 8: The relationship between GRF allocation and the total number of GRF-related outcomes by units

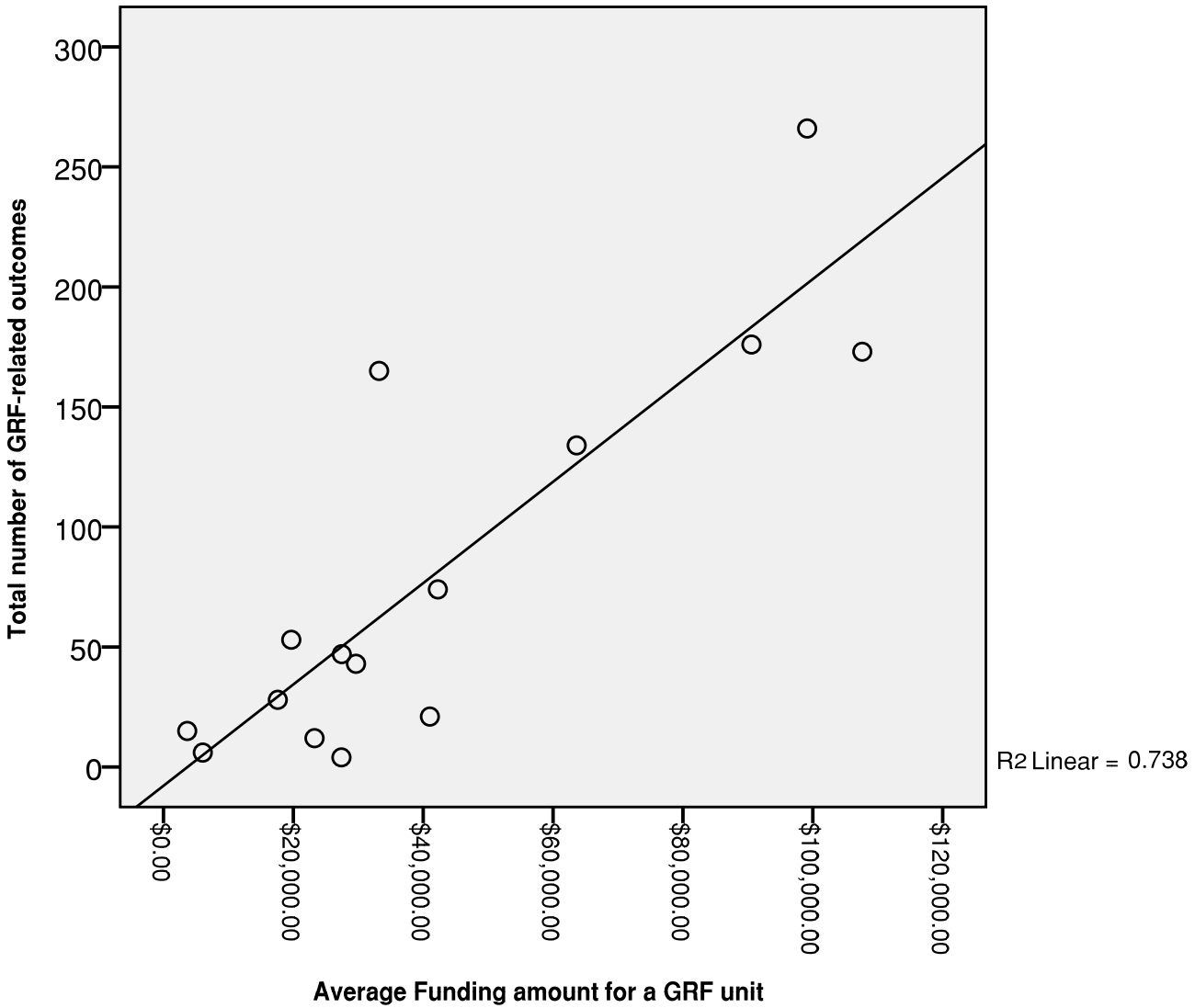

Figure 9: The relationship between GRF allocation and the total number of GRF-related outcomes per faculty by units

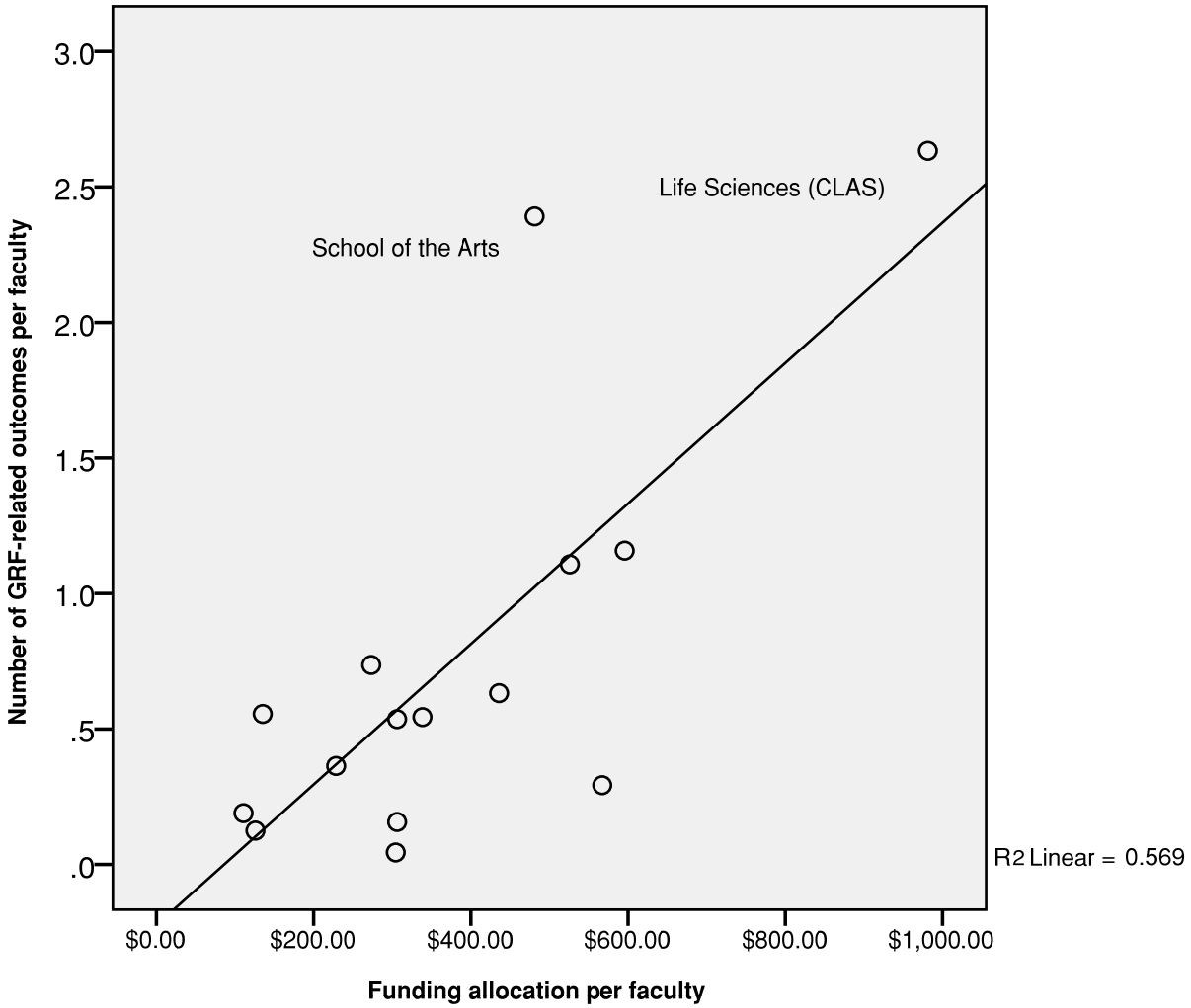

Figure 10: The relationship between GRF allocation and the total number of GRF proposals by units

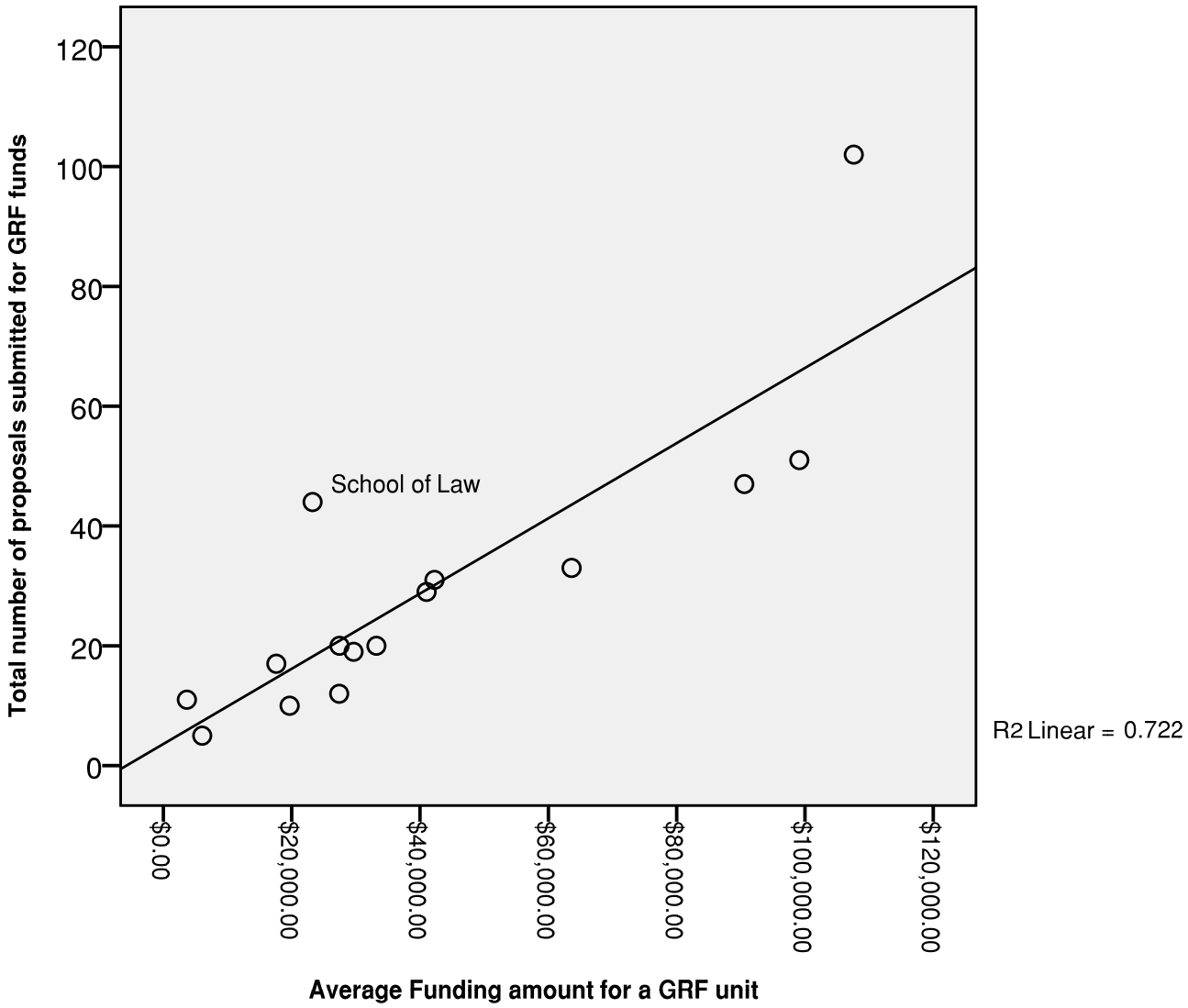

Figure 11: The relationship between GRF allocation and the total number of GRF proposals per faculty by units