

Policy on the Awarding of Research Fellowships to Student-Faculty Teams in the Science Division

Science Division Research and Grants Committee
Calvin College
Adopted May 10, 2004; revised March 11, 2005

A. Executive Summary

Recognizing the various roles and models for undergraduate research, the Science Division Research & Grants Committee (SDRGC) must oversee an increasingly complex process of selecting students for a limited number of summer research fellowships in the Science Division (SD). This policy attempts to balance egalitarian and representative approaches to awarding those fellowships. With input from faculty researchers and project rankings based on departmental goals, the dynamic process outlined in this policy strives to promote communal deliberation and collegiality in SD student-faculty research efforts.

B. Policy Rationale

Most – if not all – SD students would benefit from investigative research experience. However, funding for SD student research positions will likely always fall short of demand. Thus, the SDRGC must oversee a selection process that awards a limited number of fellowships to selected SD students. Two approaches are possible. An egalitarian approach awards at least one fellowship to each department. While seemingly fair to departments, it denies equal access to students in large-population majors – notably Biology. On the other hand, a representative funding approach or lottery awards fellowships based on the number of students applying per major, but denies equal access to students in small-population majors – notably GGES, Math, and Physics. Exclusive adherence to either approach means that a significant proportion of the students in one or more departments face dauntingly low prospects of receiving a fellowship. Further, both approaches fail to recognize that research experiences will benefit the future careers of some students more than others. From the SDRGC’s perspective, a fair approach to awarding fellowships must exhibit a “creative tension” between these two approaches and recognition of student benefit.

C. Policy Objectives

Our primary objective is to clarify for faculty and students the purpose and process of awarding these fellowships, especially those that are not earmarked for any specific category of research. In this way the SDRGC desires to alleviate concerns about the fairness and integrity of the selection process. We also hope that the policy will encourage departments to seek additional external funding sources (including grants and gifts) while holding to the primary mission of the college (educating students).

D. The Purpose of Research Fellowships

These fellowships are awarded to Calvin students who have declared or intend to declare a major in the SD. They are intended to enhance students’ prospects for research careers in SD fields. While they contribute to the research goals of SD faculty, they should not be considered a primary means of support for faculty research. External grants and other internal funds (such as CRFs and Alumni Grants) are recommended to fit that purpose.

E. Guiding Principles for Awarding Research Fellowships

Funds to support research fellowships are derived from two generic sources: (1) earmarked funds from granting agencies, endowments, or donations that specify a SD-student recipient and some peculiar requirement(s), e.g., research area, student career choice, research location; and (2) non-earmarked funds from granting agencies, endowments, or donations that have no particular restrictions other than the

requirement for a SD-student recipient. The principles for awarding fellowships supported by these two funding sources are outlined below:

1. Earmarked Funds

- a. *Fellowship awards **must** conform to the priorities of the funding agency.* Normally, these establish boundaries on the area of SD investigation supported and on the characteristics of students (diversity, career plans, etc.) involved in the research. They also may mandate certain requirements, e.g., GPA, summary reports, long-term tracking of students.
- b. *Fellowships **should** advance student prospects for careers in research.* In most cases, this expectation conforms to the stipulations of the funding agency. Factors to consider include a student's performance in courses relevant to the project(s) in which she is interested, faculty recommendations, GPA, and other measures of competitiveness in the chosen career path.

2. Non-Earmarked Funds

- a. *Fellowships **should** advance student prospects for research careers.* Arguably, students pursuing research-related careers have the most need for research experience. Factors to consider include a student's performance in courses relevant to the project(s) in which she is interested, faculty recommendations, GPA, and other measures of competitiveness in the chosen career path.
- b. *Fellowship awards **should** consider student diversity as a factor.* This is in keeping with the stated goals of scientific societies, governmental organizations, and the comprehensive plan of Calvin College (*From Every Nation*) to improve participation of minorities in SD disciplines.
- c. *Fellowship awards **should** consider departmental project rankings based on departmental goals for student research and other justifications in awarding fellowships.* To meet this objective, the SDRGC will solicit departmental input from each department's research committee.

F. Application & Awarding Process

The SDRGC is solely responsible for administering the entire process:

1. Soliciting project descriptions from faculty (late January)
2. Preparing a comprehensive list of projects; distributing that list to students (early February)
3. Soliciting student applications and project preferences (mid February)
4. Seeking input from faculty in matching students to projects (late February)
5. Receiving from departmental research committees a written ranking of student-faculty teams within that department justified within the context of departmental research goals; verifying which projects are eligible for earmarked funding (early March)
6. Determining how many fellowships will be awarded (in consultation with the academic dean), and awarding those fellowships (mid March)

G. Expectations re the Submitting of Project Proposals

All SD faculty are eligible to submit project proposals requesting students as solicited by the SDRGC. *Those who do so must clearly identify **all** sources of support for the requested student(s) and identify the number of students involved in other projects, even if they are not requesting students for those projects.* If the project is targeted for a specific earmarked fund (e.g., Merck funds support specific projects as stipulated in the original grant proposal), that too must be made clear up front.

For example, if a faculty member has funding from an external grant to support one or two students and is requesting funding from SD sources for an additional student on that same project, then she must make that clear (a brief rationale would help) in her request to the SDRGC. If she has another project involving students, she should reveal that commitment even if she is not requesting SD support for those students. This is akin to the Current and Pending Support section of a grant proposal.

In addition to promoting mutual trust within and between departments, full disclosure of funding sources greatly aids the process of awarding fellowships. Since it is to their advantage to do so, faculty should identify projects where two or three students working together with a faculty mentor can have synergistic effects or where he/she can augment or leverage external support for a high-priority project. Furthermore, full disclosure can help us to avoid “mentoring overload,” keeping the number students per faculty to a manageable level. It can also help us to advise students towards externally-funded research projects that might offer additional support during the academic year.

H. Departmental Input on Funding of Student-Faculty Projects

After collating a table of project proposals and the complete set of student applications, the SDRGC will ask faculty to identify student(s) with whom they would like to work on their specific project(s). The resulting list of student-faculty teams will then be forwarded to the departmental research committees so that they can be weighed against departmental priorities. *The departmental research committees will rank the projects, provide a brief rationale based on departmental priorities for student research, and identify expected eligibilities for earmarked vs non-earmarked funding.* The SDRGC will establish the number of projects (currently ≤ 3) that departments may posit for non-earmarked funding.

I. Awarding Fellowships

After carefully considering potential conflicts of interest and agreeing to mechanisms for avoiding them, the SDRGC will award fellowships, normally proceeding in this order:

1. Fellowship awards will be decided for the earmarked funds. This will be done in accordance with the stipulations of the funding agency/donor with consideration of the criteria in I.2.a-e (below). Before these fellowships are awarded, the SDRGC will consult with those who administer these funds to verify student/project eligibility.
2. Fellowship awards will be decided for the non-earmarked funds. So that we can award more projects, students that did not receive funding from earmarked funds will have higher priority for funding from non-earmarked funds. A priority level for each student will be assessed by considering the following:
 - a. Student’s intention to pursue graduate education or research careers.
 - b. Student’s status as a minority.
 - c. Student’s preparedness – Items that may be considered include: faculty recommendations, performance in courses relevant to the project, and GPA (e.g., as an indicator of competitiveness for a Goldwater scholarship or for acceptance into graduate school or research-related jobs).
 - d. Student’s year at Calvin – Students who have one more year at Calvin will normally have priority over second- or first-year students. Exceptions include potential Goldwater scholars and those preparing for very competitive internship positions. Students who graduate before the summer research period will normally be ineligible.
 - e. Departmental rankings & justifications – The SDRGC will consider each departmental research committee’s formal ranking of departmental projects, which include stated departmental priorities for student research and other justifications (e.g., limited accessibility to research funds in a given subdiscipline). Justification is needed even if there is only one proposal from the department.
 - f. Balancing distribution approaches – With special attention to student benefits, the SDRGC must strive to balance egalitarian and representative approaches in awarding fellowships (see B, p. 1). Distribution across SD departments is an option (contingent on I.2.e, above), not a requirement.

Once a priority level is assigned to each student, the SDRGC will make a list of top choices for fellowships and a list of alternates. The SDRGC will notify all students of their status. Students who receive an award notification will be asked to accept or decline within 14 days.

J. Some Important Caveats

1. Throughout the process, the SDRGC must be mindful of potential conflicts of interest and agree to mechanisms for avoiding them. For this reason, we will confer with our academic dean anytime one or more projects from members of the committee are recommended for Science Division funding. The dean may deny funding if there is reasonable evidence that a conflict of interest exists.
2. For his or her own project, faculty may request support for a specific student, even if that student was awarded a fellowship for that same project in a previous year. In such cases the faculty must present rationale for specifying a specific student. In its deliberations the SDRGC may consider the disadvantages of supporting the same student against the advantages of sustaining student research efforts. We may also consider using this means to add a student to a CRF-funded project; however, CRF-funding does not guarantee a student fellowship award for the project. The best means of securing sustained support for student researchers is to request it in the budgets of external grant proposals.
3. In the initial selection process in which a faculty member chooses a single student from a set of students interested in the project, it is a common courtesy to consult with other faculty regarding students who have greater interests in their projects. The SDRGC normally awards fellowships to students to work on projects in which they have indicated the greatest interest.
4. Departments and faculty must refrain from leveraging their requests for students by aligning or coaching those with lower GPAs into projects eligible for earmarked funds and those with higher GPAs into projects for non-earmarked funds. Such gerrymandering violates the spirit of this policy and threatens collegial relationships in the division. *To alleviate suspicion, departments seeking earmarked fellowships for students with lower GPAs and non-earmarked fellowships for students with higher GPAs should be prepared to justify their requests.*
5. In the event that a project is withdrawn or a student declines, the SDRGC at its discretion will reassign that fellowship award to another student/project in the division, as appropriate.
6. Each faculty researcher is expected to mentor and closely monitor student(s) for the duration of the 10-week project, and to support students in presenting their research results at appropriate regional and/or national professional conferences and at the annual SD Student Research Fair. Publications stemming from the research should be student co-authored whenever appropriate. Presentations and manuscripts should include an acknowledgement of funding support from the division and/or the external agency (HHMI, Merck/AAAS, etc.).