REED COLLEGE

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Michael J. Holland
Office of Science and Technology Policy
1650 Pennsylvania Avenue NW
Washington, DC 20502

Dear Dr. Holland,

I am pleased to write in response the National Science and Technology Council's request for comments regarding Research Business Models in the August 6, 2003 Federal Register.

Reed College has a national reputation for offering research-oriented training to students who go on to earn advanced degrees in the sciences. About 28% of Reed students graduate with degrees in biology, chemistry, mathematics, physics or a combination of these fields. Data collected by the Higher Education Data Sharing Consortium as part of its *Weighted Baccalaureate Origins Study* shows that Reed ranks first in the nation in the production of future Ph.D.s in the life sciences, second in chemistry and fourth in the physical sciences. This study shows the baccalaureate origins of people granted Ph.D.s from 1992 to 2001, listing the top 10 institutions in the nation ranked by percentage of graduates who continued on to earn a Ph.D. in selected disciplines.

Reed's extraordinary record in undergraduate science education is due in large part to the commitment of its faculty members to involving students in their research. Funding from federal agencies such as the National Science Foundation and National Institutes of Health contributes to the quality and quantity of research that takes place on campus.

Still, the research enterprise at a small undergraduate institution like Reed is inherently different from that of a large university. Reed operates with a small administrative staff. Our administration stresses faculty members' teaching skills and the ability to inspire students to learn more than publication records. In this model, research is a tool for enhancing students' understanding of their fields, in addition to a way of producing new scientific and medical knowledge. We encourage the committee to keep this in mind as it discusses the efficiency, effectiveness and accountability of current federal programs and regulations.

Accountability

Federal compliance rules for human subjects, animal welfare, conflict of interest, costing and administrative rules and other issues are extensive. While administration of these rules on a small campus can be time-consuming, Reed makes every effort to comply with them. Because of Reed's small size, however, faculty members are also highly accountable within the college itself, to the business office staff, to their peers, and ultimately, to the Dean of the Faculty. All faculty members submit reports on federally sponsored research; to the extent that federal agencies are able to share this information with the public, they should be able to more transparently demonstrate the

responsible use of public resources. The education of undergraduates in science and technology should be recognized as one of the primary deliverables of such federal grants to small undergraduate institutions like Reed, as much as new scientific findings.

Inconsistency / Federal Agencies

A single person in our business office is responsible for providing financial reports on all grants. She must be skilled in four or more different reporting systems in order to report on 15-18 active federal grants per year. In addition, she manages a wide variety of grants from private organizations, such as the Howard Hughes Medical Institute, all of which have their own electronic or paper reporting requirements. The primary federal agencies from which Reed receives funding (NSF, NIH, Department of Education, and Department of Energy) have different reporting timelines. Some are quarterly; others are semi-annual. The agencies also have different rules regarding the maximum amount of money that can be moved between budget line items, without contacting the agency. Consistency in all of these areas among the federal agencies would greatly decrease the time involved in reporting.

We encourage the committee to look at best practices across the federal agencies, and support their uniform application. One example is NSF's FastLane electronic system for submission and reporting. NSF has dedicated significant time to the development of this system over the past decade; it shows. The system is user-friendly and meets the needs of principal investigators, staff support and administrators. The system even maintains information about grants that are no longer active, enabling institutions to obtain copies of completed grants and reports and award letters. We urge the committee to look to FastLane as the model for this process, and encourage sharing of this technology among the federal agencies, rather than having other agencies spend money on competing systems.

Inconsistency / Campuses

Since Reed receives most of its grants directly from federal agencies, and not as subgrants from state agencies, this has not been a significant issue. We have been working more with the sponsored research offices at universities, as our faculty members pursue collaborative projects with university researchers, but we generally find that we have the flexibility to make such partnerships work.

Research Support

The NIH's Academic Research Enhancement Award program provides a welcome focus on strengthening the research environment institutions that are not research intensive. Many Reed faculty members have received funding from this program for biomedical research. Recently the funding cap for this program increased to $150,000 over three years. Some of our investigators continue to find this award level problematic. These investigators employ a research technician in the laboratory on a year-round basis, to provide an element of constancy to the research program, in addition to several undergraduates. The investigators cannot cover such the salary and benefits for their summer salary, a research technician, students, supplies, and equipment on the current AREA award amount. Some investigators have tried to pursue the larger R01 awards, to avoid this problem. But they find they are not as competitive in this program. NSF permits larger requests to most programs, even under the Research at Undergraduate Institutions (RUI) initiative, making them much flexible for the investigator. While NIH AREA awards are intended for schools that are not "research intensive," NIH should not conclude that the cost of doing research is less at a primarily undergraduate institution.

Overall NSF has had success rates of about 30%. But, in the biology directorate, the success rate is lower, about 15%. A larger body of researchers is now requesting funds and this directorate has had relatively flat budget. The resulting low success rate has been an obstacle for our investigators in

biology. Researchers at some institutions have urged NSF to expand award size and duration. We are hesitant to support this, if additional funding is not made available to areas like the biology directorate, to make more awards and increase the success rate slightly. Proposals to the comparable NIH program (RO1) have had a 31% success rate.

Multidisciplinary/Collaborative Research/Information Technology

The number of collaborative proposals submitted by faculty members at Reed has increased in the past two years. Most submissions seem to be to NSF, as people become aware of the ease with which such proposals can be drafted, exchanged, edited and submitted on FastLane. FastLane makes the process of working with colleagues at institutions large and small simple; for this reason, we encourage the committee to support widespread adoption of it.

Research Infrastructure

In 1992, the National Science Foundation's Academic Research Facilities Modernization program provided about 10% of the cost of a new $8.3 million chemistry building. Eleven individuals and foundations provided the remaining funds. In 2001, Reed added a new wing to its biology building and renovated the existing space. Reed covered 38% of the $9.7 million project cost by issuing bonds; 62% came from individuals and foundations. Federal support would have been a welcome addition to the funding mix for the biology building, and might have drawn additional support from other funders.

Sincerely,

Peter J. Steinberger
Dean of the Faculty

cc: Independent Colleges Office