

THE MYTH OF THE PROGRAMMATIC RESEARCH GRANT

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I have chosen to examine the mythical Programmatic Research Grant, which I refer to as mythical, not because we do not have research programs - I think we do - but because, to my knowledge, one has yet to be awarded to nursing in Canada, despite a competition created especially for this purpose.

The three most common types of research grants are career awards, designed to relieve the researcher from teaching responsibilities by paying the researcher's salary, thus giving the researcher time to conduct research; equipment grants that enable the researcher to purchase equipment to conduct research; and operating grants that provide for the costs of personnel to assist with the research and for supplies needed for day-to-day work. A grant must not be confused with a contract: contracts are awarded for the proposal exactly as presented and often prepared to meet the agencies specifications. Research grants are more flexible, and changes may be made by the investigator provided the funding agency and the ethical review committees are notified.

It is ironical that we have funding to support salaries but not operating costs. The scarcer resource in nursing is the researcher (with only a handful nationally); the product desperately needed is nursing research: thus, the lack of funding for nursing research must be corrected, urgently and instantly.

I do not know how to make a stronger statement than to show my own attempts at obtaining operating costs over the past decade. I know that fund-

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ing records vary from province to province according to the foundations available for residents of each particular province; I know that funding records vary with the relevance of the research program according to current national and provincial health care needs; and most importantly, I know that funding records vary tremendously with the "track record" of the investigator and that funding is based primarily on the grantsmanship skills and perceived abilities of the applicant to conduct the research. How I rank in the grantsmanship arena is beyond the purpose of this presentation; I wish merely to show you my attempts at obtaining funding to conduct nursing research and to show how difficult - or successful - this has been when giving it my "best shot". In an attempt to illustrate the real cost of the lack of programmatic funding for nursing research in Canada, I have "valued", both in dollars and time, the cost of having a proposal funded or rejected in the present funding system.

I will be talking about 9.5 years or 114 months. During the years 1982-1984, I was employed in a joint research position with the University of Alberta Hospitals; and since 1984 I have had 75% of my time designated for research as an NHRDP Research Scholar and, for the last two years, as an MRC/NHRDP scholar.

The grants that I have applied (and reapplied) for are on List 1. During this time, I planned 14 research projects. Two of these were funded on first application (one major [#10] and one minor[#1.1]); nine required multiple applications, either with the funding awarded being insufficient to conduct the research and multiple applications required for a single project, or the grant rejected and the applications resubmitted, sometimes up to eight times. Two projects remain unfunded (#6 and #9), one project was completed without funding, and three applications were for equipment grants. Patterns that are not evident in the way List 1 is organized are: early in my career I was very successful at obtaining small grants (very small); after that, I went through a few very difficult years attempting to obtain larger grants; and recently, a miracle occurred when I received a foreign award from the United States from the National Center for Nursing Research Grant (NIH). Importantly, from Canadian sources at all levels (i.e., federal, provincial and foundation), I have been required to make multiple applications for one project (either reject/resubmit) or have been awarded inadequate levels of funding which have resulted in several small grants accumulating for the same project, and which gave me the feeling that I spent a lot of time with my

"wheels spinning". Usually, these cumulative grants fall short of the amount required, with the investigator assuming all the tasks that could be "picked up" by lesser trained personnel if adequate funds were available. I call this situation the "little red hen" phenomenon, or "I'll do it myself."

List 1

Record of grant applications and outcomes (1982-1991)

1. Patient Falls

1.1) Phase I	AARN (\$2,500) (3/82)	Funded	\$ 2,500 (6/82)
1.2) Phase II	UAH (\$8,052)	Denied/ Appealed/Funded	\$ 8,085 (83)
1.3) Phase III	UAH (\$52,000) (7/85)	Denied/Appealed/ Funded (2/88)	\$52,620 (8/85)
1.4) Phase IV	GLENROSE (\$35,136)	Funded	\$32,000 (11/85)
	UAH	Funded	\$29,320 (9/85)

2. Restraints

MSI (1/86)	Denied	
UAH/FDN	Funded	\$23,300 (3/86)
UAH	Funded	\$ 5,000 (2/86)
Summer Empl	Funded	\$10,727 (5/86)

3. Breast Feeding/ Working Mothers

SSHRC (7/83)	Denied (6/84)	
NHRDP (12/83)	Denied (6/84)	
UA.CRF	Funded	\$ 4,755
MSI/FDN (6/86)	Denied (6/86)	
ROSS LABS	Denied	
AFAR	\$2,500-refused	
AFNR	Denied, Appealed/Funded	\$41,380 (2/86)

4. Gift-giving

\$34,205	NHRDP (11/87)	Denied(6/88)	
	AFNR	Denied	
	AFNR	Denied	
\$50,000	AFNR (10/88)	Funded	\$50,000 (3/89)

5. Painfulness of Childbirth

Funded internally

List 1 (Continued)

6. <i>Refugee Health</i>	NHRDP (12/86)	Denied (6/87)	
\$384,413	NHRDP (10/88)	Denied (6/89)	-
7. <i>Menarche</i>			
\$ 49,592	AFNR (2/87)	Denied (6/87)	
\$ 7,230	UAH.CRF (9/87)	Funded	\$ 5,000 (10/87)
8. <i>Lactation</i>	MSI (11/87)	Denied (2/88)	
		Appealed/Denied	
	UAH	Funded	\$ 3,000 (3/88)
	NHRDP (11/89)	Funded	\$15,000 (6/90)
9a. <i>Childbirth (op)</i>	NSERC	Denied (10/89)	
9b. <i>(Equipment)</i>	NSERC	Denied (10/89)	
	NHRDP/MRC	Denied (6/89)	
10. <i>Comfort</i>			
\$350,000	NCNR/NIH (12/88)	Funded	US \$315,000 (10/89)
		[CDN	\$362,250]
11. <i>PT-PT Communic</i>			
[\$ 15,000.00]	SNR CITIZ. (6/89)	Funded/Funding	
		reduced(2/90)	\$ 8,000
	UA.SF.	Funded	\$ 3,000 (6/90)
	UA.CRF (3/90)	Funded	\$ 4,000 (3/90)
	AFNR	Funded	\$14,128 (6/90)
12. <i>Equipment</i>	APPLE FDN (2/85)	Denied (12/85)	
\$ 40,403	AHFMR (10/86)	Denied (10/86)	
		Appealed/Funded	\$30,017 (12/86)
13. <i>More Equipment</i>	AHFMR (3/86)	Denied (7/88)	

* Includes proposals as PI ONLY (i.e., if co-investigator, then grant not included on this list)

** Research grants only - excluded career awards, conference grants, etc.

The grants that have made the most difference to my career were: (1) the equipment grant (i.e., #12), (2) the small grants received early in my career (e.g., #1a, #1b), and (3) the NCNR grant (# 10). The equipment grant was used to purchase six Macintosh computers, laser printer, scanner, and some

video equipment. Having this basic equipment available meant we could actually do research, quickly and almost efficiently. We each had a computer on which to write and to analyze data; in essence, we had a print shop for preparing manuscripts; we had equipment that enabled us to collect data. (But I describe this as *almost* efficiently, as we did not have funding for hard drives and software, and the scramble to acquire these essential items continued for four more years, and it continues today for we need to expand and upgrade as our needs change). The small grants were important as they allowed me to begin research and to establish a "track record." We did not have mentors in those days, and I did not have the opportunity to become a part of a research group or to become a part of an on-going research program of an established researcher. The NCNR grant was important as it made me realize what is possible when funded adequately and the extent of the ineffectiveness of the Canadian system for funding nursing research: I no longer find the *status quo* acceptable.

Gains

From the 12 funded research projects listed above, there have been some benefits. I have received support for a duration of 111 months of the 114 months in this period. However, this does not mean that I have been "doing" research almost continuously as many grants funded only a few hours of research time per week, and often, several grants were held concurrently. Frequently, there were "dry" periods without funding. During these inactive periods, I wrote proposals and methodological and theoretical articles.

The net gain from successful applications is shown below (see List 2) in both research dollars (operational, equipment costs, and career awards) and research and teaching productivity. Although it is not possible to evaluate the *significance* of the research and the impact of the publications, I think it represents a reasonable decade of effort.

In order to obtain a balanced perspective, the cost of the system requiring the researcher to prepare and submit a separate grant proposal for every project, no matter how minor the project and how modest the cost, must also be valued, even if the researcher appears somewhat successful. I have calculated the cost of a new proposal as three months of effort researching, conceptualizing, and writing, using a mean salary of \$50,000 for the ten-year period. As preparing a proposal also involves the time and salary of others

List 2

Net gain from research applications, 1982-1991

Funding

Operating costs (yield from operating applications)	\$666,065
Career awards (since 1984)	\$338,679
Other (conference grants, etc.)	\$ 46,578
Unfunded research	(2 projects)

Publications

Articles/chapters	106
Books	7
Patents	2
Scales/standardized questionnaires	2

Research contributions

Fall prevention, restraints
Minimal breastfeeding, breastfeeding patterns
Nursing models - illness/comfort, etc.
Some contribution to research methodology

Teaching/collaboration/mentorship

Courses taught	16
Students (Supervised)	25
(as committee member)	22
Collaborators: Post doc/Visiting prof	8
Conferences/workshops organized	5

in ethical review committees, in cooperating clinical agencies (for access and support), in secretarial help, and for help obtaining quotations for equipments, the preparation of the budget, and for copying supplies and postage, an additional \$5,000 per application is added, for a total of \$15,500 per proposal. Reapplications or resubmissions for equipment grants are based on 0.5 months (i.e., \$1,750 in investigator salary costs) plus \$500 for the salary time of others, supplies and incidental costs, for a total of \$2,250. Thus, in the period of 1982 to 1991, submission costs may be calculated as follows:

New applications	14 x \$15,500	\$217,000
Resubmissions and equipment grants	29 x \$ 2,250	<u>\$ 65,250</u>
	Total	\$282,250

Although it may be argued (and rightly so) that the preparation of proposals is a necessary insurance of quality for the granting agency, maximizing the chances that the work will be successfully completed and worthwhile, and that sponsors are entitled to "call the shots", granting agencies must recognize that slow mechanisms of approval impede the research process. Figure 1 shows the milestones in the grant review process, from submission to funding, with (a) representing *unproductive (waiting) time*, the time from proposal preparation to the first possible funding date; (b) representing *delay time*, the length of time from submission until each proposal was actually funded (including rejections and resubmission time); and (c) *postponement time*, or the time from the first possible funding date until the proposal was actually funded (i.e., the amount of time waiting for funding for proposals that have been resubmitted). In my case, approximate unproductive time totals 128 months, delay time 61 months, and postponement time 67 months.

In the present system, the delay caused from unproductive time is unavoidable because of the cumbersome - and costly - nature of the grant review process. It seems logical, therefore, to reduce this expenditure by giving established researchers programmatic research grants; that is, grants for larger amounts of funding to solve a particular problem in certain topic areas. By removing the administrative application procedures, this system

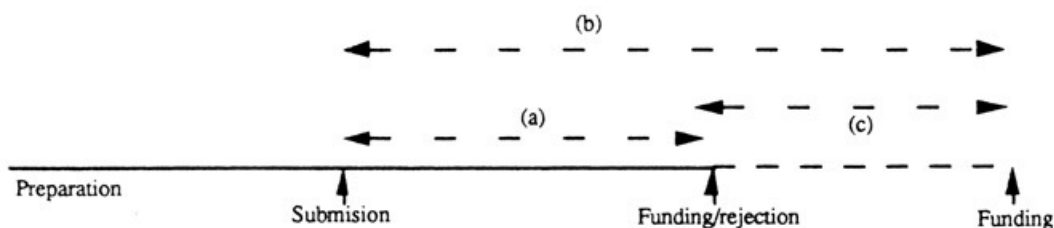


Figure 1

The Lag Time in Funding Research

would maximize investigator time for research. It would save investigator effort, reduce research costs overall, remove the need for agencies to conduct multiple minor reviews, and give the taxpayers more for their tax dollars.

In science, delay time has a cost to society as it retards the research product from reaching the consumer, perhaps for many years. Luckily, in nursing, we do not have to worry about being "scooped", of entering a race against other investigators, and the delay time does not seem to be of concern to agencies.

Postponement time, wasted time, is the one that causes ulcers in the investigator. Although I have to rewrite the proposals - and update them - I have yet been requested to make a helpful, constructive change to my research design by a granting agency. The "change" usually consists of clarifying, explaining, and teaching the agency about the research methods or the importance of the topic. Some of these "problems" may be attributed to the use of lesser known qualitative research methods. Still, the moral issue of inadequate reviews that penalize investigators must be discussed openly.

Inability to predict whether a proposal will or will not be funded is a problem for the investigator when projecting workload. Does an investigator take a holiday if a grant is denied? And if two grants are funded simultaneously, how does the investigator cope with the unexpected workload? Further, if a grant is not funded, project staff must be "released", and new staff hired when another grant is funded. This system results in little job security for research assistants, and the continual retraining of staff devours additional principal investigator time.

I often imagine what would happen if teaching was set on the same model, with professors bidding for courses, their teaching load determined by their success at writing proposals, and promotion and tenure decisions being contingent on the success of the proposal, following evaluation by non-nurses?

I have been advised that if I wish to receive funding from MRC (Medical Research Council), I am eligible to submit to the committee that reviews clinical trials. The recommendation that we couch our research in designs that are planned to answer questions of concern to medicine (focussed on cure and epidemiological designs - that which medicine understands and considers important) would bastardize the development of nursing research. The shift of focus necessary to meet the requirements to meet that funding strategy (for we cannot investigate *nursing questions* using inappropriate designs) leaves me dumbfounded. Three decades ago, we banished physicians from our lecture halls, insisting that nursing was a separate and a distinct profession from medicine and that physicians were not authorities - not qualified to teach nursing. Despite this, we are prepared to "sell out" nursing research - the supposedly "cutting edge" of the discipline - to relinquish the development of nursing knowledge to the techniques and the control of medicine. I have also been advised that the research councils cannot consider nursing a priority as they have not received the critical mass of applications required to demonstrate a need. How many proposals must be rejected before a "critical mass" is reached? Principles of zoology suggest that it is prudent to nurture endangered species.

Neither can we break nor loosen the tunnel vision of what medicine considers to be *research*. Several years ago, I naively thought that if I chose to research topics of mutual interest to nursing and medicine I would increase my chances of funding. It may be of interest to all nurses who have ever requested a medical order to apply restraints that the use of restraints is not a topic of interest for medical research. Even a study investigating lactation was considered "on the fringe of medical research" and received low priority. Maybe we can use such comments from medical funding agencies to clarify the differences between our professions, between our research methods and between our research purposes, in order to illustrate the complementary aspects of our two research endeavours and to clarify for the Federal and Provincial agencies the importance of funding nursing research. We can no longer afford to ignore nursing research nor to continue to

tolerate risking the health of Canadians by allowing the government to continue to refuse to fund research that will improve nursing care.

In 1989, I received a three-year grant from the US Public Health Service, National Center for Nursing Research, to delineate the concept of comfort. The grant has been the most freeing experience of my life, but it increased my awareness many-fold of the constraints and costs imposed by the present system. The present system in Canada of refusing to provide operating costs or equipment grants and forcing investigators to write multiple grants for few dollars handicaps researchers: *It absorbs the energy and time that should be used for conducting research.*

The career awards, without operating costs, make investigators feel like disadvantaged children who won a trip to Disneyland but had no money for a day pass. We watch others ride, while busily writing letters to all known relatives, trying, in the short time allowed, to gather enough coins for a single ride.

But the system of writing multiple small grants for a single project has another serious limitation. The system requires that each grant be fully developed, with the methods clearly explicated. Review committees tend to focus on the methods used in the grant, rather than evaluating the contribution the research will make to knowledge and the theoretical and clinical gains that will be achieved from the outcome. Thus, committees tend to reject grants on the basis of minor methodological flaws, rather than evaluating major issues, such as, the importance of the research topic or the contribution of the research question to nursing science. Paradoxically, research methods are highly subjective, and as any doctoral candidate with a committee of five will attest, they contain few rules that cannot be contradicted by one source or another. Yet, grants have continually been rejected for inappropriate reasons, such as, "poor development" of an unstructured, open-ended interview or such controversial issues as sample size. These rejections are extremely disturbing to researchers when they recognize that they, not the members of the review committees, have the most experience, preparation and skill to conduct the research and, as nurses, are better prepared than other social science colleagues to judge the research direction for the profession. A programmatic research grant, of long-term duration and adequate funding, would allow researchers to *investigate*, to move the frontiers of

nursing forward, to challenge the very foundations of nursing and to do research that will make a difference.

I am not asking nor suggesting that nursing be given "special treatment"; rather, we must have the support to allow our discipline to catch up to those that have always been supported in their research endeavours. We need equipment, resources, space and support personnel. We need to be left to set our own priorities, to set our own standards, and to select research methods that fit nursing phenomena. Most of all, we need the freedom and the funding to work productively and creatively for the improvement of patient care.

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