Grants-in-Aid for Scientific Research: A Resource for Fostering Researchers

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When the time came for me to enter university, I decided to enroll in the Department of Naval Architecture of Osaka Prefecture, because I was fascinated with the field of shipbuilding. That was 50 years ago, in 1965. Japan at that time was still in the midst of a major economic boom and its shipbuilding industry was in its prime. The construction of giant tankers had garnered public attention and shipbuilding engineering was one of the more popular study fields at universities for many students then in high school. However, not many universities had a naval architecture department. Most of my classmates at university of course gained employment at shipbuilding yards. Having been assigned almost by chance to a university lab that specialized in ship hydrodynamics, I was interested in research and decided to continue my studies in graduate school. Soon after enrolling in the doctoral program yet before I had actually committed to a career in research, I was given a position as a research associate and found myself happily engaged in research activities with my students.

As you might expect, my newfound role as a member of the academic staff also involved me in the task of applications for Grants-in-Aid for Scientific Research (Kakenhi). That included setting aside time for meetings to discuss research themes with research lab professors and prepare the relevant paperwork as well as devoting consideration to strategies and ideas for theme selection and development of project proposals with appeal. In those days, the engineering category of the Kakenhi program included “disciplines” and “research fields” with traditional-sounding labels like “naval architecture” and “ship resistance, motion performance, and design.” These segments reflected time-worn engineering technologies and appeared to have been in place for quite some time. As I recall, there was even a discipline called “mining engineering.” Although an effort was apparently made to

change these labels and bring the Kakenhi program more into line with modern trends, I am told that this was not a simple undertaking. For engineering technologies with roots in history and tradition, academic societies and entire industries were formed using research field names. These fields wielded immense power and had a major impact on science and technology policies. They had an especially strong influence back when I began my own career as a researcher. Of course, most universities nationwide eventually dismantled their naval architecture department, leading to changes in the relevant classification for Kakenhi. Today, the only area left is "naval architecture and ocean engineering," which is itself treated as a research field in the discipline of "integrated engineering."

In absolute terms, only a few researchers were engaged in the field of naval architecture back in the day. This supported the commonsensical expectation that their applications for Kakenhi would have a better chance of acceptance than applications from researchers in fields like mechanical or electrical engineering. However, at the time, the number of researchers in a given field was not the only factor that determined whether subsidy funding of this nature would be forthcoming. In fact, it was well-known that the acceptance of a grant application was also influenced by the total number of applications from that same research field. Indeed, the Golden Rule at most laboratories was to have even their younger lab assistants submit applications for every grant program deemed eligible. For that reason, I had to help with the grant application procedures as a collaborator in projects that would be led by professors in our laboratory and at the same time prepare grant applications for projects that I myself intended to lead. I felt certain that as a junior researcher, any grant application I prepared as chief investigator would be doomed, and I had a tough time effectively organizing all of the documentation involved for that purpose. I simply lacked motivation. Nonetheless, I still faced the imperative to come up with fairly bold and appealing research proposals. This was one of the lessons I would have to endure on the road to becoming a full-fledged researcher.

In those days, no one gave me any advice on things I should keep in mind when preparing an application, and the application documentation itself did not give me a clear picture of how the Kakenhi program was organized or on

what details the application screening process would be focused. To fill in the blanks, I acquired and studied a book on the system of Grants-in-Aid for Scientific Research that had been published by an insider in the grant field. That publication incorporated a section of commentary that explained the foundations for the Kakenhi framework and national policy on science and technology. Those resources provided me with insights into the spirit and purpose of the Kakenhi program and enabled me to concentrate more effectively on the points I should keep in mind when preparing an application. In so doing, I learned to think carefully about the purpose of the program, bear in mind the expectations that potential application referees would have, conceive of appealing research project titles, write coherent summaries of my research plans, and use the entire form page allotted to detail expected research outcomes. While all of this would probably seem obvious now, for me the process of preparing a Kakenhi application back then resembled an educational window into the proper mindset for a researcher and strategies for the pursuit of research. Probably for that reason, I saw participation as a joint researcher in Kakenhi-funded research from a relatively early stage of my career as something natural and had numerous applications approved for projects that I led, sometimes drawing envious comments from friends my age who were engaged in other fields of research. On those occasions, I would jokingly retort that they should apply for Kakenhi in a field where few researchers were involved, but that in itself was actually a mistaken perspective. In retrospect, this was sarcasm I sometimes aimed at friends who had given up and failed to submit applications from the outset. Yet at the same time, it also reflected a certain sense of pride that accrued from the accomplishments of my own efforts.

Naval architecture was by nature a field that integrated many fundamental, machinery-related disciplines into a systematic whole, including material mechanics, construction, hydrodynamics, motion dynamics, control, production, design, and so on. Furthermore, it was highlighted by an atmosphere that encouraged peers from academic societies and university departments in the field of naval architecture to collaborate their efforts with research in other fields While my professional upbringing within that environment may have been a factor, I could proceed with research projects with Kakenhi for work that extends into the fields of flow visualization and

image measurement and ocean environments although my principal research focus remains in hydrodynamics. Shipbuilding-related research that comprises undertakings in those research fields is somewhat rare or unique. This likely was one of the factors that heightened the appeal of my Kakenhi applications and led to their acceptance.

I believe it is simply common sense to select research themes based not on whether they will result in the acceptance of a Kakenhi application but rather on the scholarly interest they hold for the individual researcher or the needs of society at large. That said, exploring themes for applied research or joint undertakings with researchers from other scholarly fields is arguably one effective way of boosting the unique appeal of the application you ultimately submit for a project in your own field. The ongoing segmentation of scholarly disciplines has in recent years reached a highly advanced stage, arguably underscoring the importance of interdisciplinary research that integrates efforts in disparate fields. I am happy to have been involved in such research through much of my career. I credit my involvement in the field of naval architecture and the acceptance of my Kakenhi applications for much of my ability to view research themes in a systematic way, explore solutions from a comprehensive perspective, and coherently explain my views to others. The Kakenhi system and framework have significantly influenced Japan's national policies on science and technology and also naturally served an instrumental role in fostering researchers involved in science and technology. I am deeply grateful for the benefits the grant program has afforded me.