

Personal Reflections on the Grants-in-Aid for Scientific Research

Daisuke Uemura

Professor, Faculty of Science, Kanagawa University;

Professor Emeritus, Nagoya University;

Auditor, Kanazawa University

Research Theme Implemented in FY2015:

Search for new compounds with a focus on marine sponge-derived culture-resistant symbiotic bacteria (Grant-in-Aid for Scientific Research (A))



My over-40-year research career is approaching its end. I can continue with my research for a while longer, but I will be moving on from my role as an educator and in particular, from the training and education of graduate students. At a fortunate moment, I was approached with a request that I write an essay on the Grants-in-Aid for Scientific Research (Kakenhi) program. As someone that has always been deeply grateful for the research grant system and the benefits it has provided over many years, I had not a single reason to turn down that request, and in fact, I accepted it with pleasure. Accordingly, in this essay I have attempted to organize my thoughts about this system and my feelings of gratitude.

This may seem somewhat out of place but I would like to summarize how people of my generation came to have a connection with Kakenhi in the first place. As university students from the graduating class of 1968, my peers and I already knew that our instructors had to work unusually hard to win Kakenhi. At that time, grant applications were handwritten. Students known for their calligraphic skills were always in strong demand and as apprentices, endeavored to produce clean and attractively written applications. However, it seems that some applicants amazingly went as far as having their applications prepared by professional printing houses. While I was passively observing that practice, I eventually obtained my degree and found a position as a research associate. After becoming a faculty member, I needed to assist various tasks. Grant application preparation was one of them. I not only had to prepare my own grant application, but also prepare and submit an application for Kakenhi in the category of General Scientific Research (A) for the laboratory I was affiliated with. This was a make-or-break situation for the laboratory, so it was essential that it be accepted. Although there were already research funding systems provided by general foundations, researchers had no choice but to seek funding through the Kakenhi program to cover the purchase and development of certain expensive pieces of equipment.

Having the university consider a request for a budgetary appropriation was another approach that could have been taken, but that would have been a difficult path because many other researchers were already competing for access to that limited resource. Further, I believe it would have been futile unless we had the support of our dean or our university administrators. If research themes were expected to produce major findings or involved applications for large pieces of equipment that other universities did not have, they were more likely to win approval because administrators and the university as a whole could readily explain why the funding was necessary. In that respect, I can understand why younger professors were dependent on Kakenhi and unable to wait their turn for access to university funding.

Back then, Co-operative Research (B) was a research category in the Kakenhi program that offered substantial benefits to assistants. The research theme in which I was involved did not cost all that much or include much spending on consumables. In fact, most of the expenses were just for travel. A team of a dozen or so individuals including renowned investigators in the field had submitted the same application for Kakenhi, and the research associates for the representative laboratory needed to handle the accounting associated with the proposed project. As a research associate, I was aware this would be an ideal opportunity to gain recognition for myself among prominent authorities in the field. Although there were insinuations of shirking responsibility, a certain amount of criticism, and other banter, participation in stimulating conferences was an extremely educational experience for young researchers. From a personal networking standpoint, projects particularly in the category of Special Cancer Research were fantastic. The opportunities for interdisciplinary cooperation and exchange enabled me to take my work to the next level by establishing ties with investigators from RIKEN, the National Institute of Advanced Industrial Science and Technology (AIST), and companies in the pharmaceutical industry. After becoming an assistant professor with my own laboratory, I was even more grateful to be called on to work as a colleague in undertakings in the Co-operative Research and Special Cancer Research categories, and I also benefited from those collaborations. Of course, I also demonstrated significant progress in my own projects in the categories of General Scientific Research (C) and Scientific Research for Priority Areas. These experiences from my career as an assistant professor have become even more valuable since becoming a full professor and assuming a role that involves helping others. In real terms, my need for Kakenhi peaked during my years as an assistant professor. Every time one of my Kakenhi applications was approved, I was appreciative of the generosity as it made it possible for me to concentrate on my research. Looking back, I feel I posted my most significant and outstanding

accomplishments during that period of my career.

As a way of assisting young people and doing something in return for the benefits I had enjoyed, after changing workplaces and becoming a full professor, I led a project in the Scientific Research on Priority Areas category as a head investigator. The path to approval of grant applications in this category was long and it was crucial to pool the wisdom of everyone on the project research team. Our application was approved in part because the younger team members demonstrated real ability. We were able to pursue that research with single-minded devotion over a five-year span. In the interim, the personal connections that I made through a project in the Special Cancer Research category and my experience as a participant in international conferences overseas later equipped me to preside over a major international conference in Kyoto. This was a gathering of some 1,300 participants from 45 nations, and it went extremely well in terms of enabling researchers to share information. Afterward, I won Kakenhi for projects in the Creative Scientific Research and Scientific Research (S), (A) categories, and other undertakings and achieved major research progress. One of my latest discoveries is a drug-lead compound that is now in the advanced stages of commercial development as a therapeutic treatment for breast cancer. In recent years, I have gained many more opportunities as an application referee than as a researcher having my applications screened. In that role, I have devoted myself to a search for ways of improving the openness and fairness of the screening process and reforming the JSPS program officer framework. Researchers and funding agencies have been engaged in intensive discussions and debate regarding ways to bring about even modest improvements. This is a good thing. German Chancellor Angela Merkel has apparently weighed in with her own spirited views on this subject. Noting that recently a remarkable number of Nobel Prizes have been awarded to Japanese, she attributed that achievement to Japan's support for basic research, and, because "Industry 4.0" will depend on the wisdom of the younger generations, also acknowledged the importance of their immeasurable talent. Merkel's comments truly highlight Germany's keen powers of insight and are something that we must take to heart. Obviously, we should strive not to squander research funding. However, as a nation that prides itself on its intellectual assets, Japan, as its top priority, must provide appropriate, broad-based coverage—even if thinly spread—to the research fields that serve as the source of its intellectual assets. I am convinced that approach will lead to highly original scientific theories and technologies that may rescue humankind that is in a life-or-death crisis.