

## Attached Table 4 Generative Research Fields

### ○Fields Designated for FY2014 Recruitment

Area	Detail	Area Number	Set Period
Neo-Gerontology	<p>The percentage of the population aged 65 or older in Japan exceeds 23%, the highest in the world. Japan's "aging society" is about to enter a new stage that mankind has never experienced, so many of the problems that Japan is likely to face are at the world's forefront. Up until recently, research on issues related to aging has been conducted in the field of gerontology. It has been pointed out, however, that studies that treat the over-65 as a homogenous group with declining conditions have limitations. Certainly, there are frail people who need social support and care, but there are also healthy elderly who are physically fit, maintain economic independence, and continue to exhibit leadership and cultural vigor. Thus, the elderly are not monolithic but rather a diverse group of people, so basic scientific research must be advanced that is premised on recognition of important variations among them. Such research should explore, in a detailed and precise manner, whether apparent correlations between various aging attributes and indicators are merely pseudo-correlations, cause-and-effect related, or individual phenomena.</p> <p>With this background in mind, we have established a new research field, "Neo-Gerontology," which works to capture evolving academic trends that point to heterogeneity among the elderly.</p> <p>To adapt to the reality of an aging society, we will need to redefine the role of older people and reexamine how they are situated within the structure of society. The transformation of the society, in which the elderly are of course part, should itself be readdressed. It will also be necessary to question, from a philosophical point of view, what aging is/means. We, thus, welcome challenging research proposals from all areas. They would include, for example, historical, philosophical, or comparative-cultural studies on values and richness associated with aging; folkloric and cultural-anthropological analyses of tacit knowledge as a product of accumulated life-experiences; comparative studies of aging among various countries; psychological investigations of individual differences in various aspects of aging that cannot be captured by averaging; analyses of changes in the role structure based on age; studies on the life courses of men and women as related to longevity; thanatology, or "death and life studies" on attitudes towards death as an end of life; research on the structure of aging society that will underscore future social policies; exploration of ethics in the coming new stage of aging society; collaborative studies between fields of engineering, medicine and others that clarify the nature of aging—all grounded in a perspective of variety existing among older people.</p>	N001	FY2014 — FY2016
Mathematical Sciences in Search of New Cooperation	<p>Mathematics has long been used as an indispensable descriptive language in many science fields such as physics. Even in research fields where a firm relationship with mathematics has not been established yet, a new mathematical concept might emerge in the future. In this program, we call ambitious proposals intending to find out new mathematical structures possibly hidden under complex phenomena and functions in nature, life, society, human's feelings and mind, etc. Discovery of such new mathematical concepts might link different research subjects so far thought to be unrelated, and will eventually contribute to establish a new research field. Numerous possibilities would exist in such studies. Toward this goal, we believe it essential to set up new possible targets based on bottom-up collaborations between researchers of mathematics and of other fields. In the course of these efforts, many unexpected results are expected to emerge. Because of this reason, we recommend the proposal made by a collaborative team consisting of researchers of mathematics and of other fields, no matter who is a principal investigator. Ambitious proposals from researchers in established fields intending to step forward toward an entirely new direction in collaboration with researcher of mathematics are also encouraged. We enthusiastically welcome new, inventive, and unexpected proposals from all academic areas, which may be regarded as being out of consideration in the scheme of current academic fields.</p>	N002	

Area	Detail	Area Number	Set Period
Food Cycle Research	<p>Stable, secure and sustainable food production and supply form the basis of human existence and prosperity. Naturally, food production depends on the quality and availability of sun, water and arable land. So far, humanity has maintained food production by means of circulating natural resources. Currently, Japan can consider itself blessed with sufficient sun, water and arable land. However, we must address concerns about increasing risks associated with global climate change, natural catastrophes, the depletion of water resources, damages to the marine environment and depletion of fisheries. In addition, the rapid rise of the global human population also carries the danger of overwhelming the food supply. Furthermore, social factors, including agricultural policy, land and water use, energy consumption of food generation and transportation, as well as national food security are cause for concern. Food production relies on sustainable use of “immovable” arable land and water. The emerging problems threatening sustainable food production make research into maintenance of natural resources necessary. Projects should cover a comprehensive area of related issues, pertaining to the current picture of food production, including animal feed and exploration of potential productivity increases. To name a few, investigations into the water cycle across forests, arable land, rivers, lakes and the sea, the organic and inorganic material cycles to secure soil quality, as well as the role of plants and animals, insects and microorganisms in food production would be of importance. Studies should also provide methodologies for sustainable use of fertilizer and fieldwork into agrochemicals and other means of severing natural circulation. This is of special importance as natural nitrogen circulation remains insufficient for agricultural production. In addition, experimental approaches in laboratories or at research farms to allow proof of concept testing obtained from combined survey studies should be investigated.</p> <p>Beyond scientific study, social issues associated with changes in the agricultural environment should also be considered. These would entail international relationships influencing food supply and demand, domestic legal mechanisms governing land and water use as well as agricultural management. Furthermore, attention should be paid to political issues influencing price stability or production adjustment, as well as administrative issues controlling food stock. Accordingly, we intend to establish a new area, called “Food Cycle Research,” to promote a discussion between science and sociology on food production and supply. This area should include approaches from all fields to study vital activity in the cultivation of plants, animals and microorganisms in food production. This area aims at increasing the mutual understanding between agriculture, forestry, fishery and ecology in an environmental context to describe how the material cycle, which sustains life, interacts with the social sphere. Applications relating to food production and supply from all fields of the natural sciences and sociology are encouraged.</p>	N003	FY2014 — FY2016

(Note 1)

This table applies only to the screening division “Generative Research Fields” within the categories “Scientific Research (B)” and “Scientific Research (C).”

(Note 2)

For each field, applications may be submitted during the first three years of the established application period. Applications selected in the first year are given a project duration of 3-5 years; in the second year, a duration of 3-4 years; and in the third year, a duration of 3 years.