Young Researchers in Japan

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NEXT MONTH IN TOKYO, ASIA’S LARGEST BIOTECHNOLOGY EVENT WILL TAKE PLACE—THE INTERNATIONAL BIO TECHNOLOGY EXHIBITION AND CONFERENCE. JAPAN’S TRADITIONAL STRENGTH IN BOTH BIOLOGY AND TECHNOLOGY MAKES IT A VERY APPROPRIATE SITE FOR THIS FORUM. BUT OVER THE LONG TERM, JAPAN’S SCIENCE AND TECHNOLOGY FUTURE WILL REQUIRE THAT OUR NATION PLACE A MUCH STRONGER FOCUS ON ENCOURAGING RISK TAKING AND INDEPENDENCE FOR PROMISING YOUNG SCIENTISTS.

Currently, for a young researcher in the sciences to become an independent group leader at an academic institution requires that he or she experience science in its highly competitive international context, thereby acquiring a broad range of ideas and skills, and a global network of colleagues. For a young Japanese scientist, this requires boldness in one’s career path, often involving graduate and/or postdoctoral training abroad. But many talented young Japanese today express great anxiety about leaving Japan for such training. The fear of going abroad causes many students to forgo a career in academic science, and it even prevents talented youth from entering Ph.D. programs. Therefore, there is a need to establish a variety of career paths for graduate students and other young researchers that enable them to feel secure enough to concentrate on their studies and training, whether they remain in Japan or benefit from being in an international arena.

The government of Japan has been seeking ways to support young scientists. A system of awards and scholarships for graduate students was instrumental in increasing the number of science graduate students by 2.8-fold over the past two decades. To keep graduate students on an academic career trajectory, the government has improved research assistant and teaching assistant opportunities. Japan has also established internships in the industrial arena to smooth career paths outside of academia. The government also implemented a research administration system at selected universities where postdoctoral fellows can be employed as administrative officers on the basis of their background in science.

Japan’s Ministry of Education, Culture, Sports, Science and Technology (MEXT) is working to address two persistent structural problems that have long restrained the performance of Japanese science.* One issue is Japan’s vast underutilization of female talent. In 2010, Japan employed 13.8% female researchers compared to 37.9% for the United Kingdom (as of 2008). As one example, MEXT is providing special funding for universities that help researchers who need childcare. The second major problem is a lack of independence for beginning researchers that hinders creativity. To establish new environments that permit young scientists to conduct research independently, the Japanese government has been developing a tenure track system that allows selected postdoctoral fellows to become independent principal investigators at participating institutions; in 2011, over a hundred such tenure track positions were supported.

Because a vast number of researchers are expected to retire over the next few years, Japan has a unique opportunity to restructure its academic environment. To make the transition, there is an urgent need to introduce an evaluation scheme for principal investigators that is more transparent, reliable, and fair—based only on the perceived excellence of the individual involved. By creating a system that is completely merit-based, we can increase diversity by opening doors to young scientists with innovative and independent ideas, as well as to female researchers and to those who have developed their scientific careers abroad. To avoid the inevitable academic biases inside Japan, a new evaluation scheme should be instituted that incorporates expert international reviewers. The most important thing for building a solid foundation for the development of Japanese science is to support the success of all of our most talented researchers—whether upcoming or established, female or male, Japanese-born or not. The establishment of a much more transparent, unbiased, and reliable evaluation scheme for the recruitment of principal investigators lies at the heart of this critically needed change.

—Naoki Nagata and Shinya Yamanaka

*www.mext.go.jp/component/english/__icsFiles/afieldfile/2013/01/15/1329766_14.pdf

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Editor's Summary

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