

Progress and problems of gender equality in Japanese academia, and empowerment activities in science and geoscience

Rie S. Hori^{1,2}

¹Head of Department of Earth Sciences, Ehime University, Matsuyama, 790-8577, Japan

²Head/Director of Women's Future Development Center, Ehime University, Matsuyama City, 790-8577, JAPAN,

<http://hime.adm.ehime-u.ac.jp/english/#contentsAll>

shori@sci.ehime-u.ac.jp

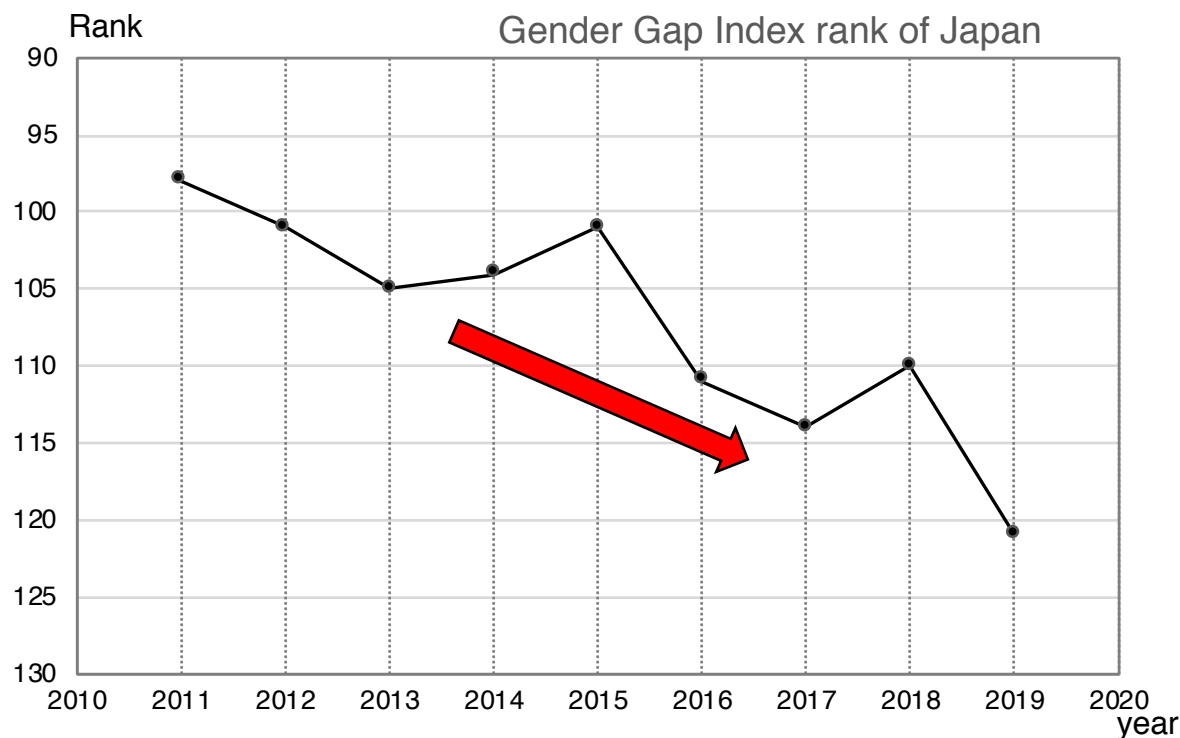
*Chair of gender committee of Geological Society of Japan



Status of Japan

Japan position in Global gender equality Rankings

	2011	2012	2013	2014	2015	2016	2017	2018	2019
Japan	98	101	105	104	101	111	114	110	121
Total no.	135	135	136	142	145	144	144	149	153



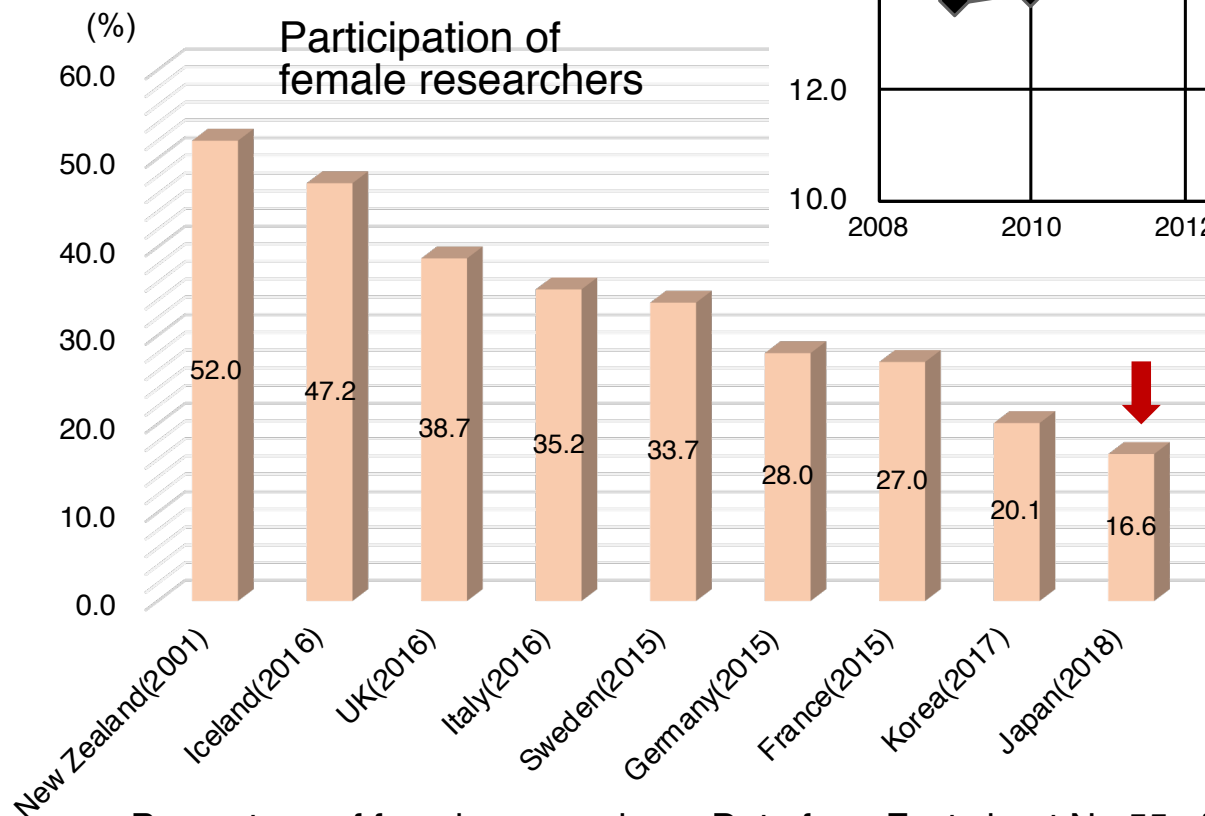
(after World Economic Forum)

Quite behind

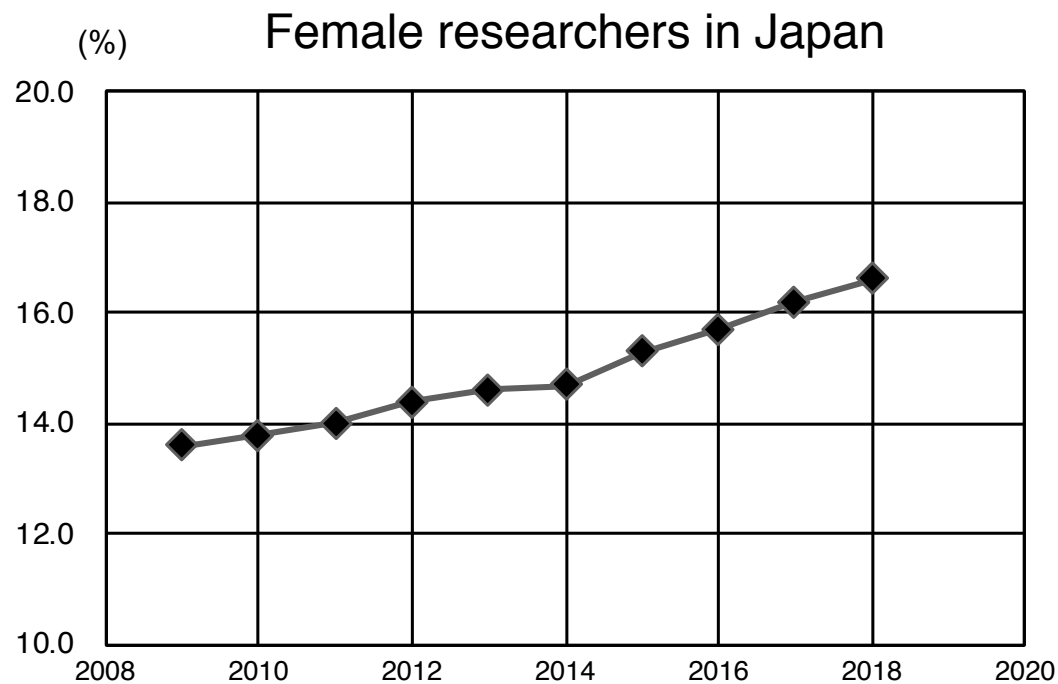
According to the Global gender equality Rankings by World Economic Forum, the Gender Index (GI) rank of Japan has been below 100 during the last 8 years. Every 4 years, Japan ranking has been slipping by 10 points and has finally reached the 121st position in 2019.

Progress and problems

The percentage value of female researchers in Japan is still low level comparing with other countries. The values do increase in these ten years, however it is not enough.



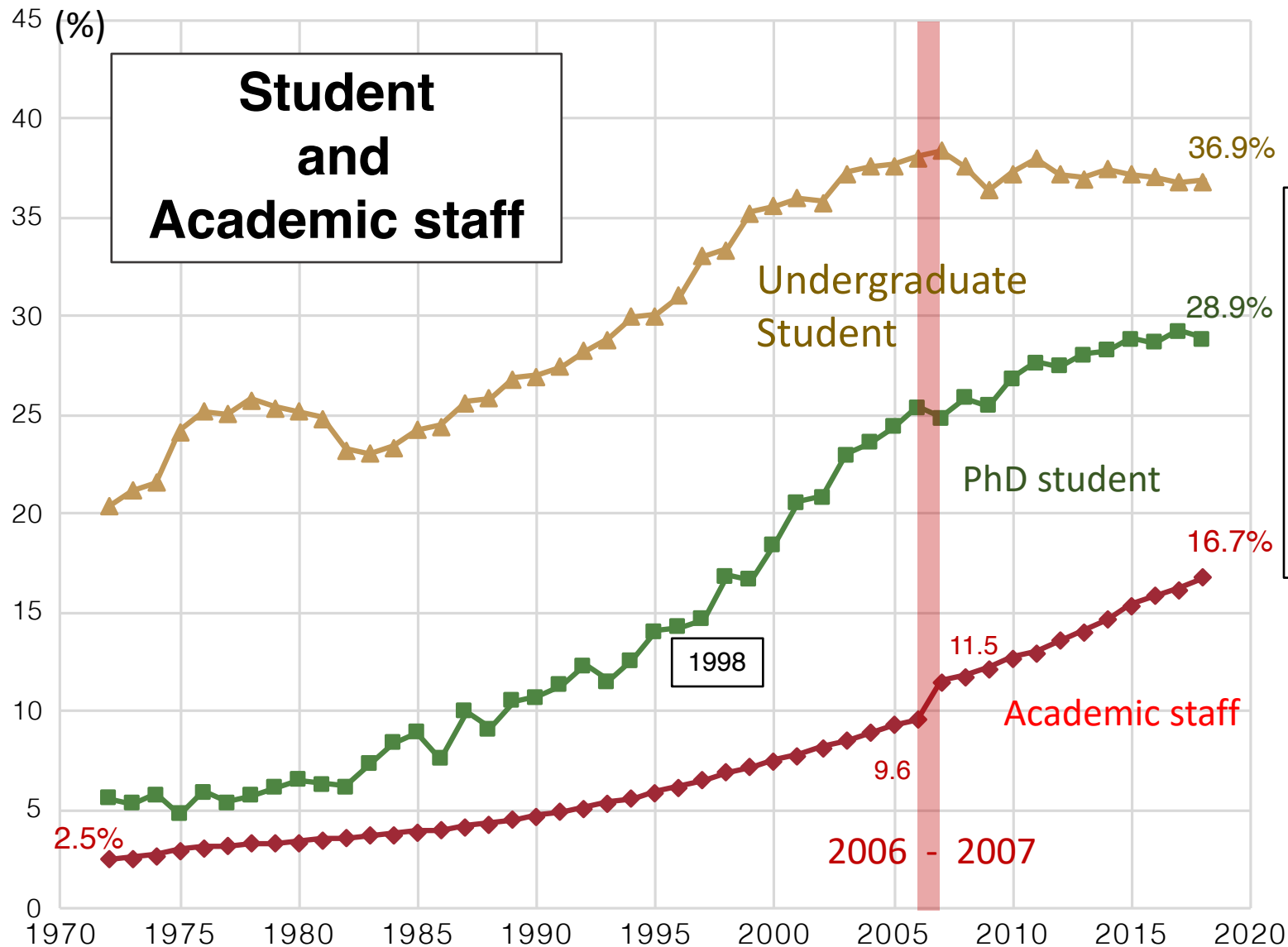
Percentage of female researchers. Data from Fact sheet No.55 of the UNESCO Institute for Statistics (2019) except for Japan.



Percentage values of female researchers in Japan from 2009 to 2018. Data from “Summary of Results (2019) of Research and Development” by Statistics Bureau of Japan

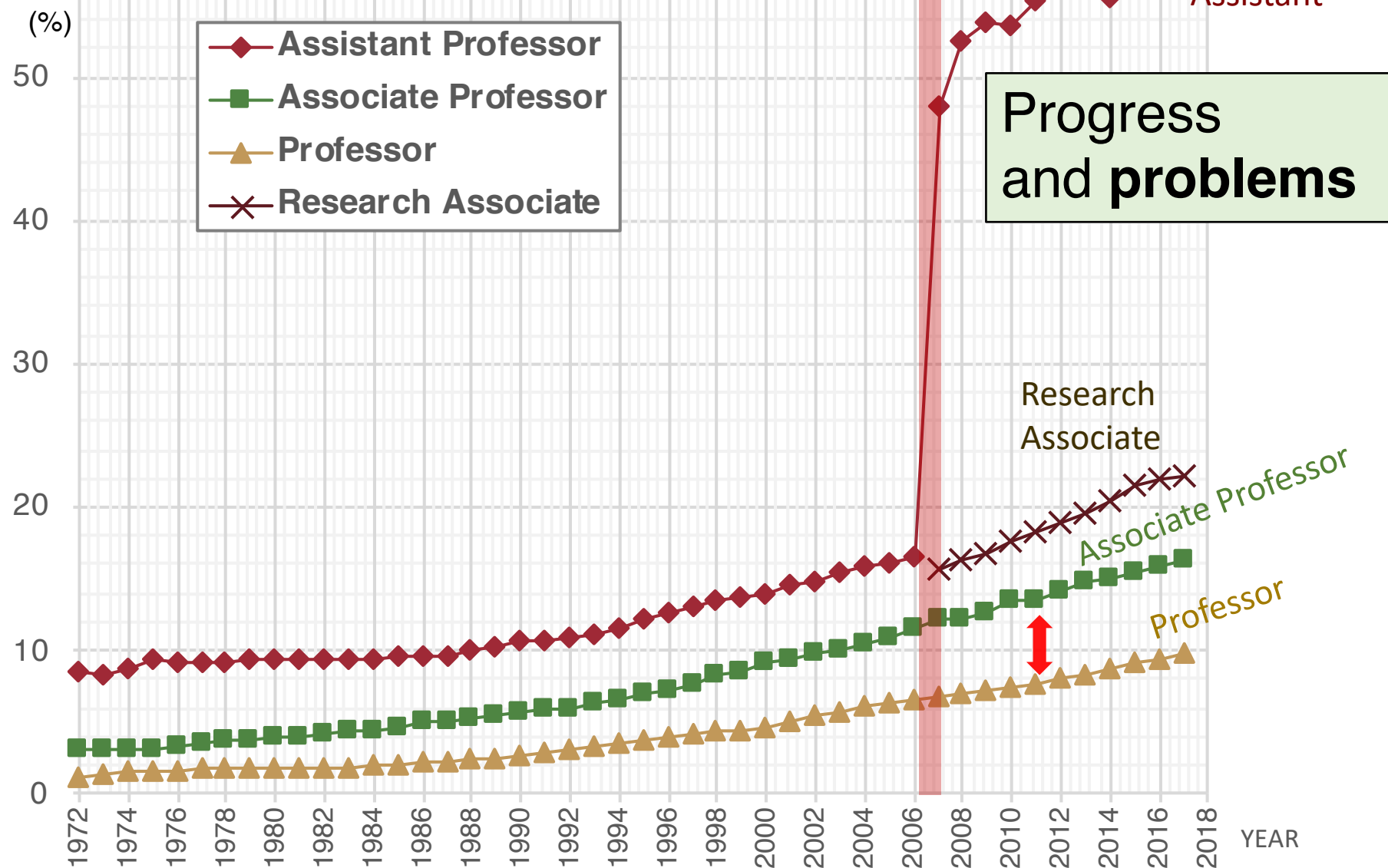
Female ratios of Japanese National Universities

Progress



The increasing admittance of PhD students since 1998 may have provided a good opportunity for female students aiming to pursue higher education.

Female ratios of **Job positions** in academic staffs of Japanese National Universities

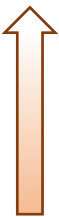


Job position and percentage of female staff in national universities in Japan since 1972 to 2018.
Data after 2015, 2017 & 2018 reports of the Japan Association of National Universities.

The leaking pipe problem and unconscious bias exist in Japan

Progress vs Problem

Female ratios of **Job positions** in academic staffs of Japanese National Universities

	1972		2006	2007		2018	
Total %	2.5%	→	9.6	11.5	→	16.7%	
Professors	1.2%	→	6.6	6.8	→	10.3%	
A-professors	3.0%	→	11.6	12.1	→	16.7%	
Research Associate				15.7	→	22.2%	
Assistant Professor	8.6%	→	16.6	47.9	→	60.0%	

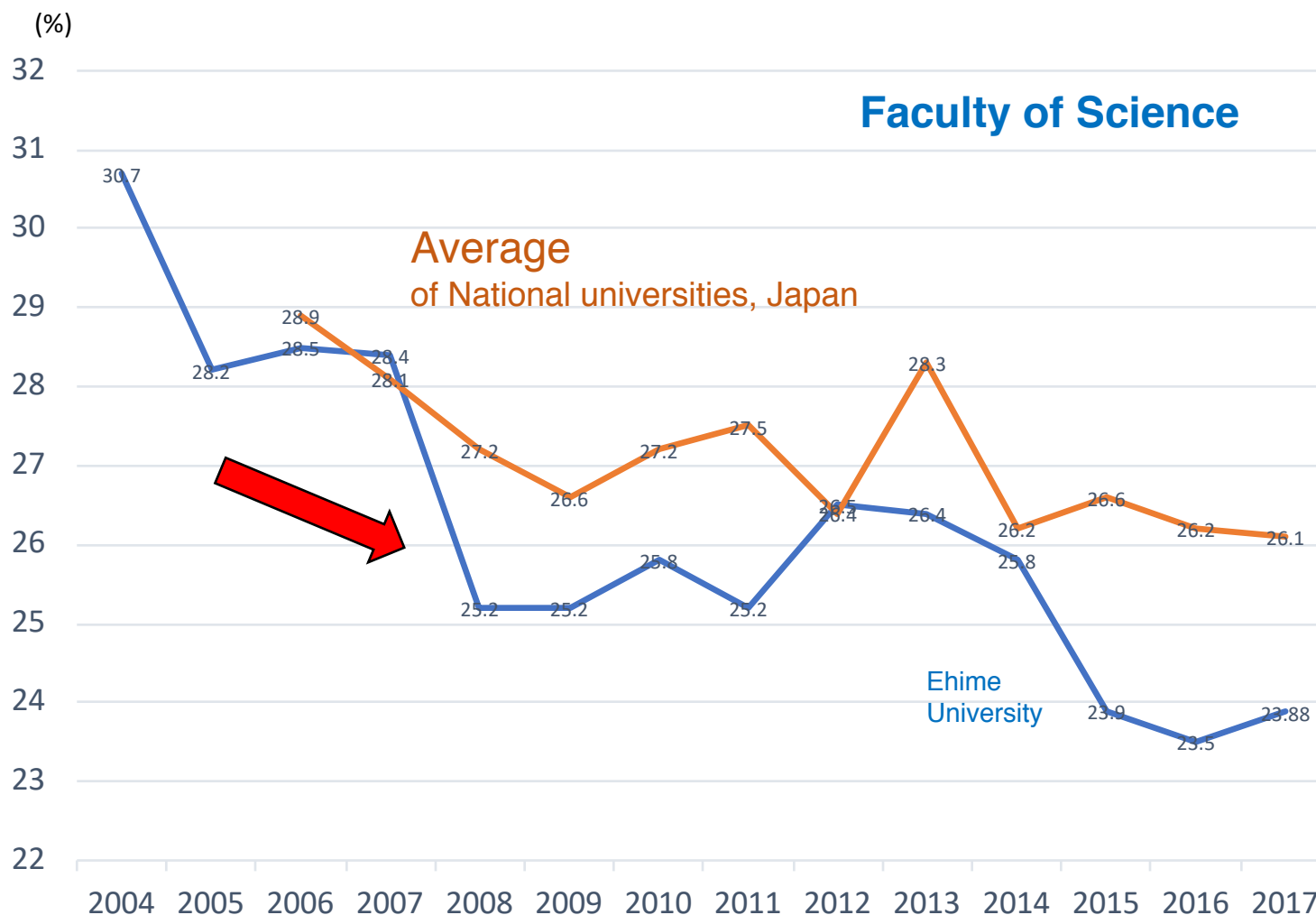
* 2006; Japanese government action started.

“Supporting Activities for Female Researchers” Funds by MEXT.

* 2006; Academic classification system in university changed.

“Research Assistant” positions established, and included in the total of academic staff positions of universities.

Female student percentages in National universities, Japan.



In Japan, there are many STEM education activities available for female high and junior high school as well as elementary school students. These activities and programs aim to help women to choose their future careers unconstrained by social bias, such as parents' wishes, or the lack of familiar role models. However, a decreasing enrollment trend in the Faculty of Science during the same time is worrying and needs to be addressed.

Action for gender equality in Japan

2003: **30% by 2020** Leadership positions in *All fields in Society*

Gender Equality Bureau Cabinet Office in Japan

2005: 2nd Basic Plan for Gender Equality in JAPAN & 3rd Science and Technology Basic Plan

Percentages women in Natural Science up to **25%**

2006: Fund by MEXT started "**Supporting Activities for Female Researchers**" of the Special Coordination Funds for Promoting Science and Technology of the Ministry of Education, Culture, Sports, Science and Technology (MEXT)

2009: Acceleration program for gender equality in Scientific filed by MEXT to JST (Japan Science and Technology Agency)

2011: **Cut-off Fund** of acceleration program

2016: 4th Basic Plan for Gender Equality in JAPAN & 5th Science and Technology Basic Plan

<**Law** to promote women in the workplace> established
managerial posts: 11 % (women) the second lowest in OECD
(Any companies (>300employees) should act since April 2016)

For 30% by 2020

OPENeD

See <https://www.opened.network/english/about/> for details.

Development of the All Nippon Diversity Network since 2018

In collaboration with the Ministry of Education, Culture, Sports, Science and Technology of Japan (MEXT), the All Nippon Diversity Network (OPENeD) has been established to realize a more inclusive society in which both women's and men's contributions are equally valued and individual uniqueness and talent is appreciated by connecting universities, research institutions, and corporations that are working to improve their research environment/research capabilities for female researchers.

The network collects data regarding domestic and international organizational trends and best practices and shares its findings on this website, contributing to the development and popularization of diversity and inclusion throughout Japan.

Two essential pillars were established to support this organization.

- The first pillar.

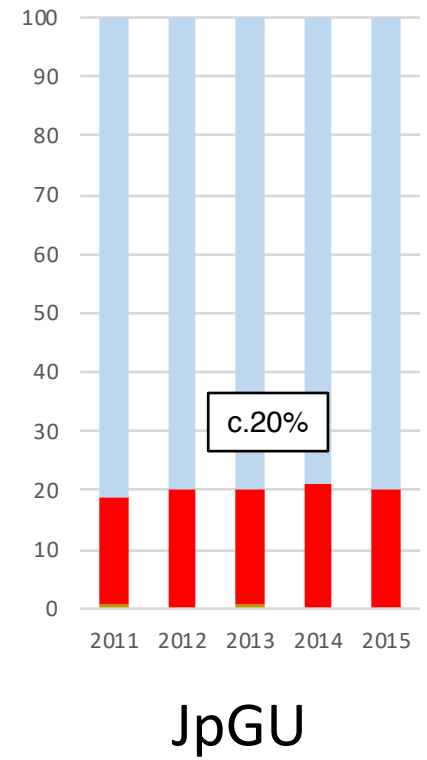
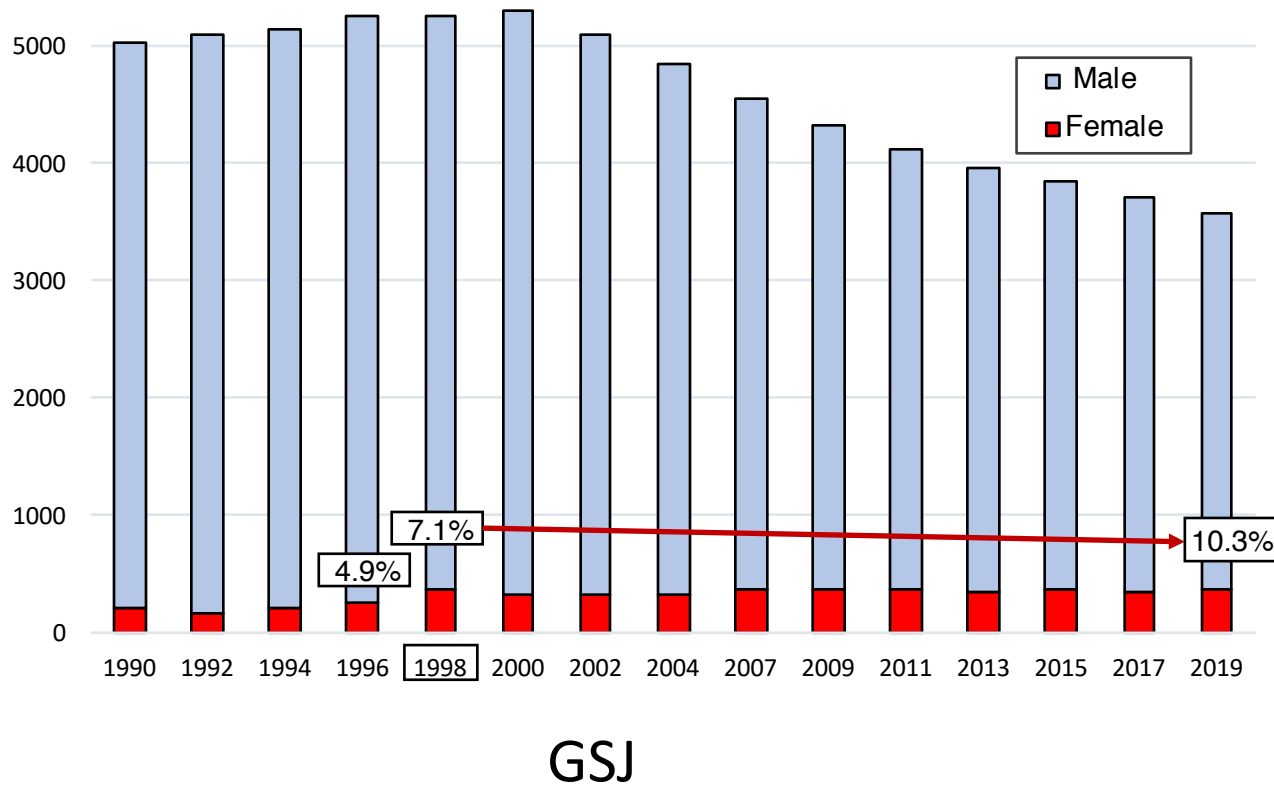
Institutions will have face-to-face meetings where issues and best practices are shared. To maximize the effectiveness of this initiative, the nation has been divided into eight blocks with administrative lead universities in each block developing activities best suited to meet regional characteristics.

- The second pillar

This platform works toward developing an open, diverse online community by providing information through the web, including practical examples for realizing diversity, conducting research investigation in cooperation with IBM Japan and the Science Council of Japan, and connecting private companies with female students aspiring to become researchers.

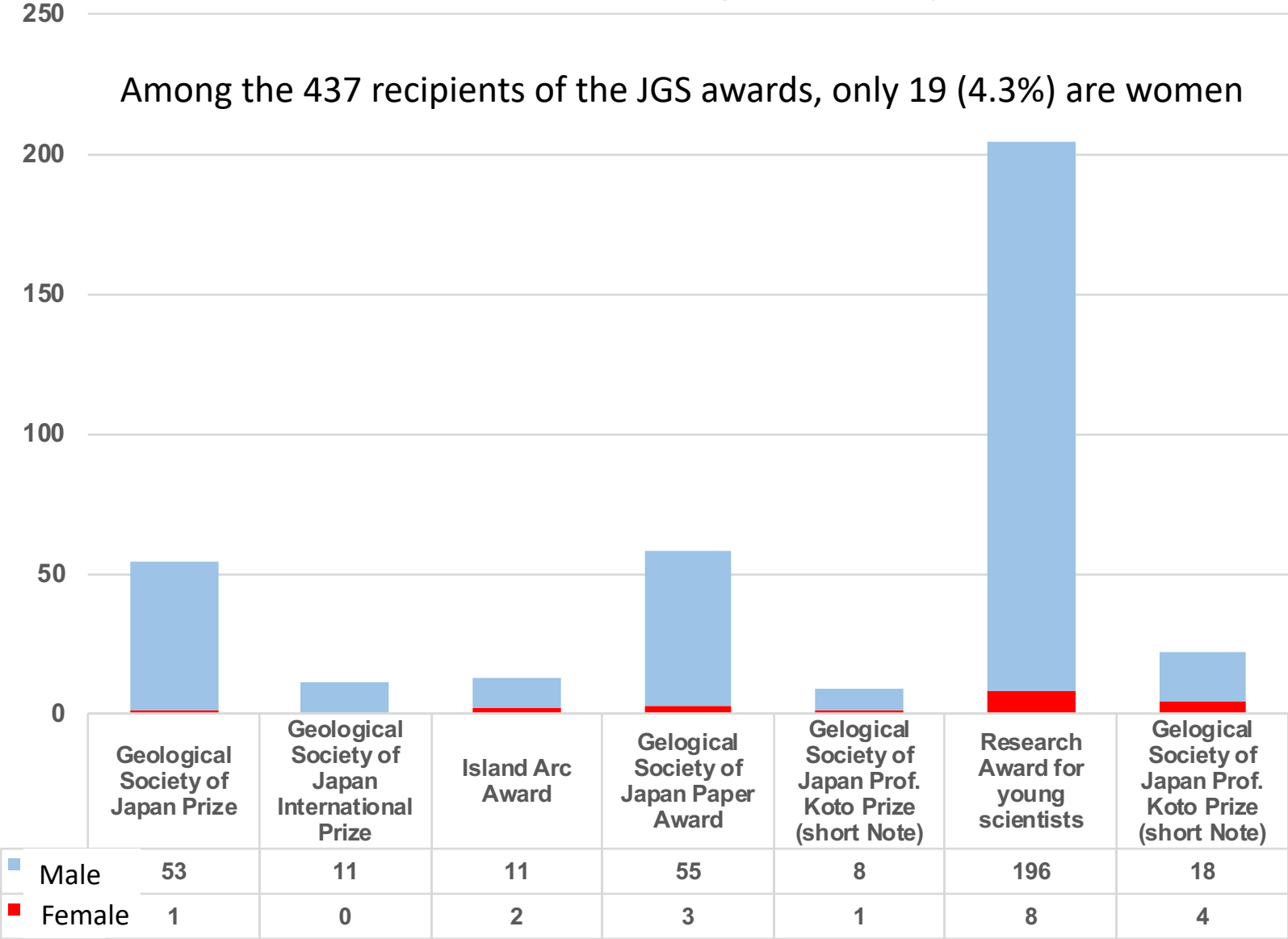
Gender equality in geosciences of Japan

Female ratios in Geoscientific Societies of Japan

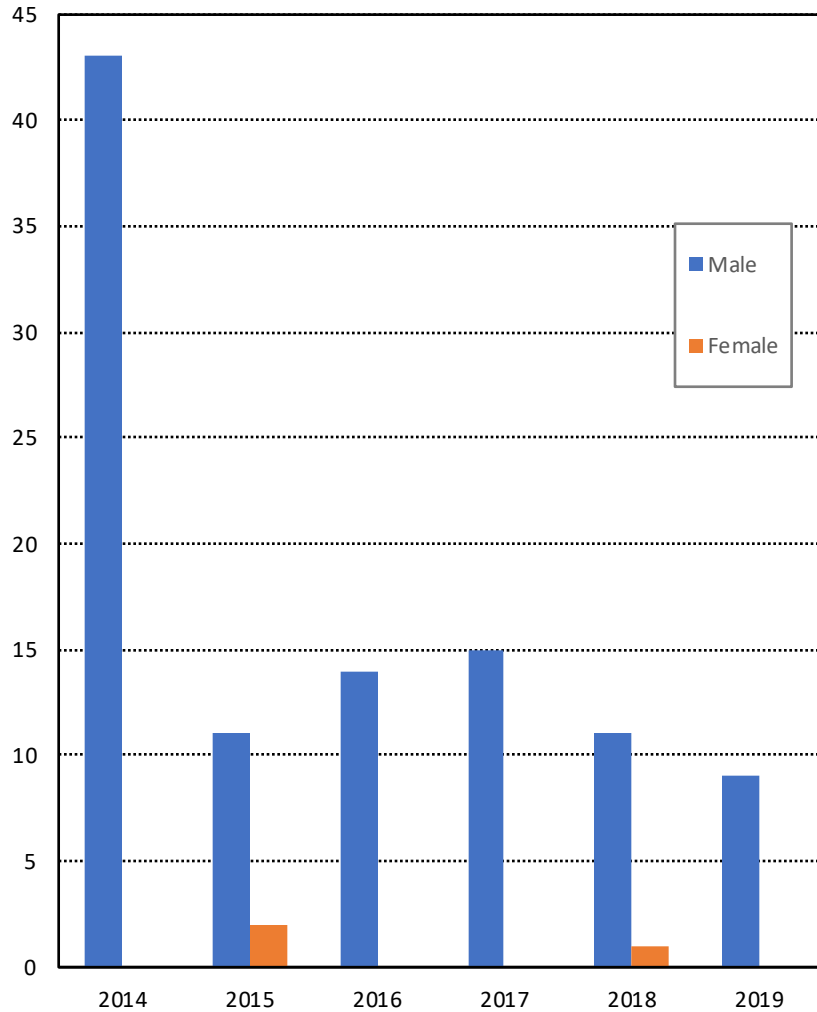


Geological Society of Japan Awards

Among the 437 recipients of the JGS awards, only 19 (4.3%) are women

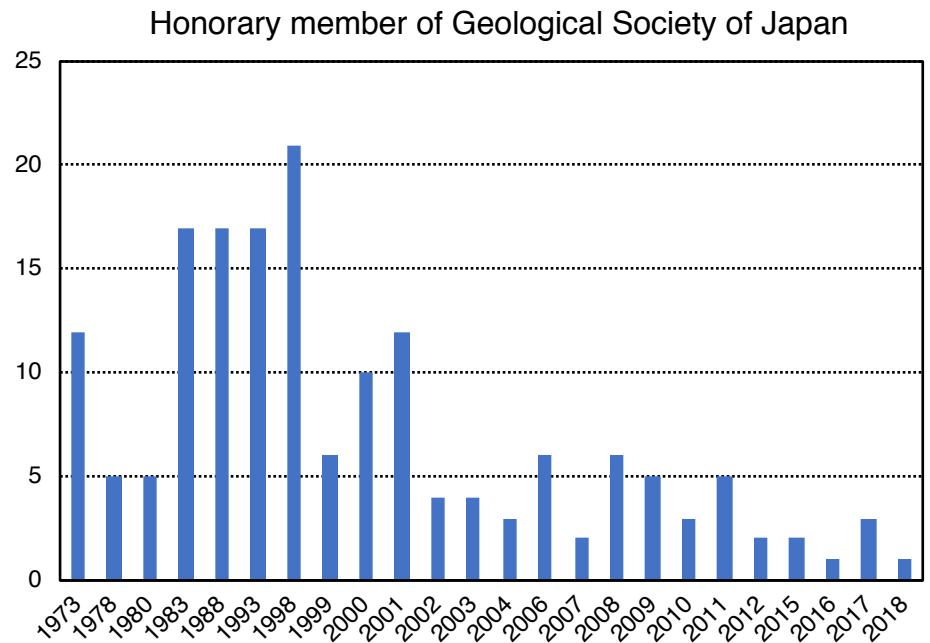


Awards in Geoscience filed of Japan Female ratios of Fellow/Honorary members



JpGU Fellow members since 2014 to 2019.
There is **3 female** members among 106 total Fellows.

NO Female honorary members



Honorary members of **Geological Society of Japan** since 1973 to 2018.
There is no female members among 169 total honorary members.

Summary and conclusion

We have recognized the following 3 main problems concerning gender issues in Japan,

- (1) The improvements in gender equality in Japanese academia is very slow.
- (2) The number of undergraduate students in Sciences is decreasing.
- (3) Unconscious bias exists against women researchers.

To provide

Good bias avoidance training systems/
better and varied role models in science

To need

Strong Leadership for change the system/fund support



Continuing to clarify problems of this issue in public is essential