

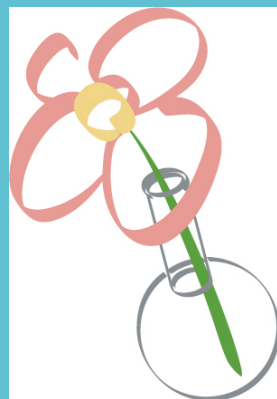
Development of the Next Generation - Summer and Spring Science Schools for Junior and High School Girl Students



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The Physical Society of Japan
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Summer School

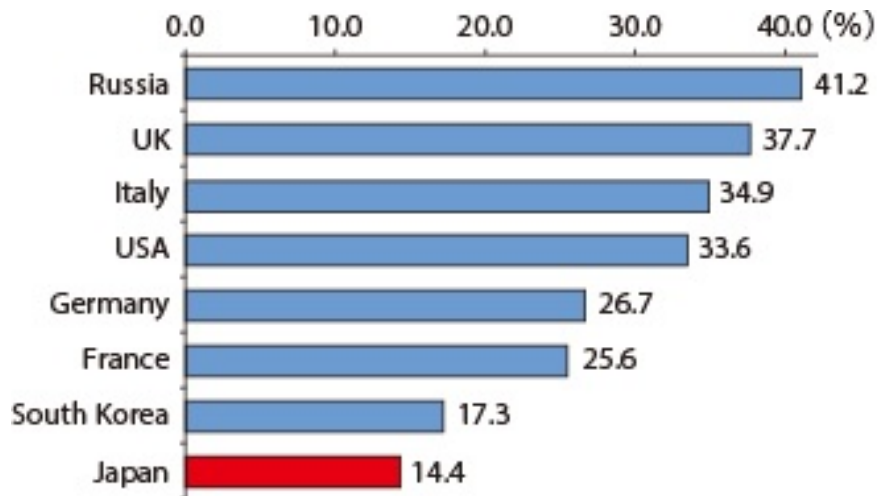


Spring School

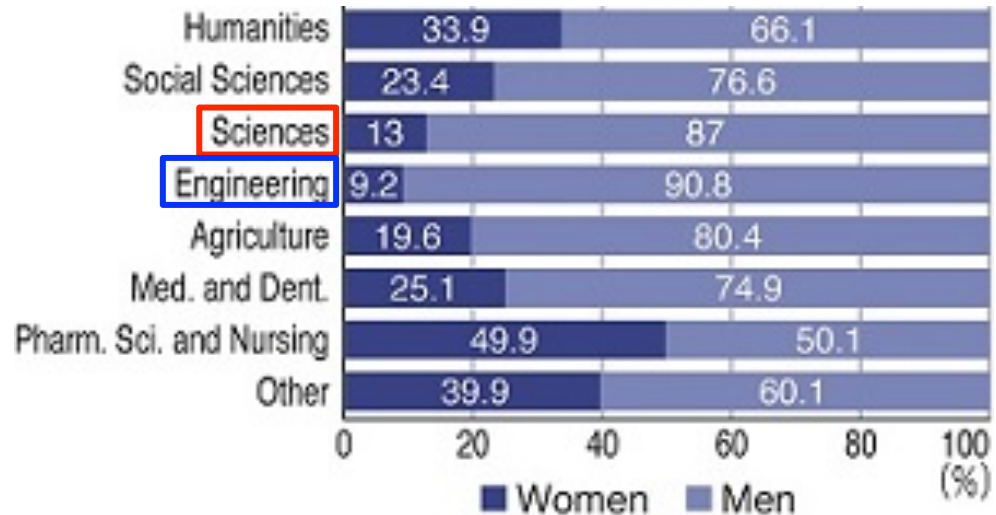
1. History background
2. Activities
3. Advantages of girls' science school

Background

Proportion of female researchers, 2013



Proportion of female researchers, 2013

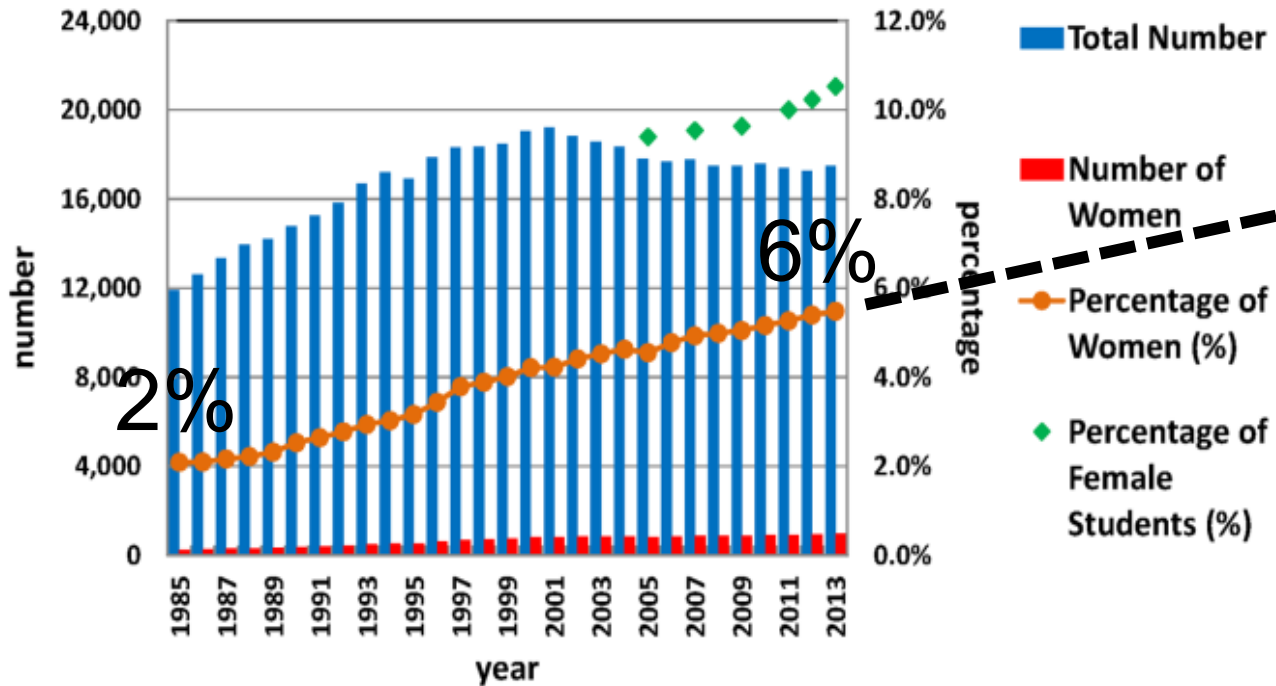


Low % of Japanese female researchers

JPS



Number and Percentage of Women in JPS



Target
→ 30%
After 180
years!?

History

In order to increase # of Japanese female researchers ··· ? ? ? →

Increase # of female students

2005 The Japanese **summer** girls' science school started.

- Stimulated by Korean Physics summer camp
- Supported by Japan Inter-Society Liaison Association Committee for Promoting Equal Participation of Men and Women in Science and Engineering (EPMEWSE), National Women Education Center of Japan (NWECC), and Japan Science and Technology Agency (JST)

Great success! Over 100 high school girls joined the science camp from all over Japan.

2006 The Japanese **spring** girls' science school started in west area of Japan.

Since then, summer and spring girls' camps have been carried out every year.

The 11th **summer** girls' school → Aug. 6-8, 2015

The 10th **spring** girls' school → July 2015 – Mar. 2016

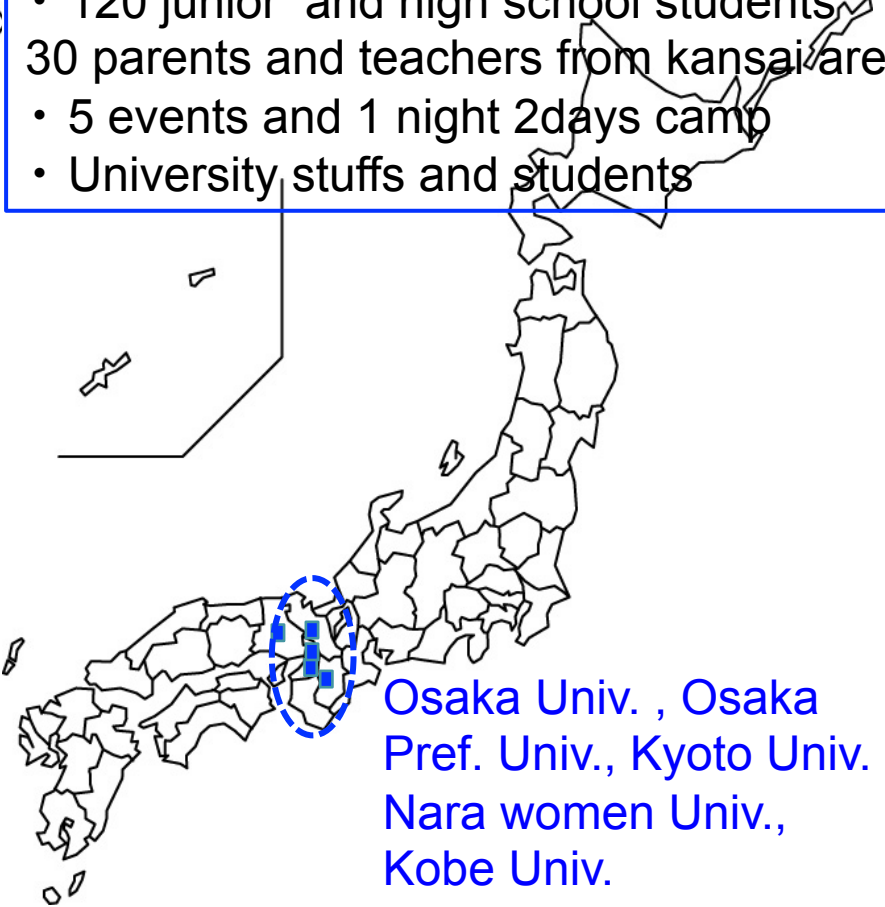
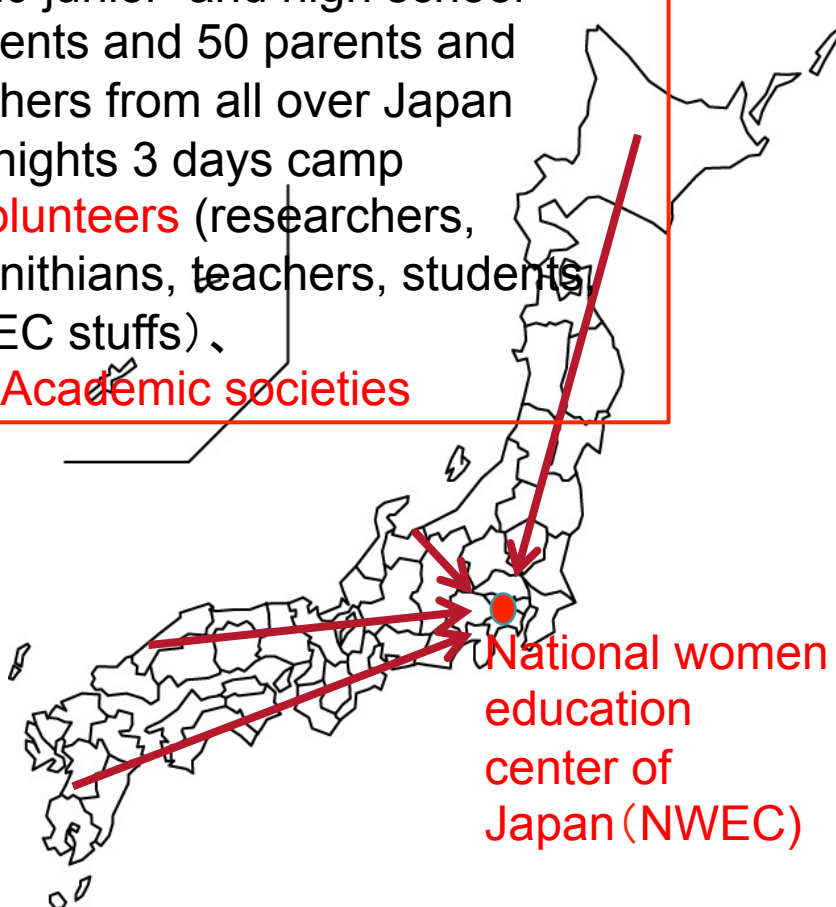
Summer and Spring girls' Science Schools

Summer Science School

- Since 2005
- 120 junior and high school students and 50 parents and teachers from all over Japan
- 2 nights 3 days camp
- **Bolunteers** (researchers, technithians, teachers, students, NWEC stuffs) 、
- >30 Academic societies

Spring Science School

- Since 2006
- 120 junior and high school students
- 30 parents and teachers from kansai area
- 5 events and 1 night 2days camp
- University stuffs and students



Spring Girls' Science School (In 2015: Kobe Univ. and other 4 universities)

6 events (Students can join a part.)

(1) July 26 , 2015

Opening, Lectures of female researchers in company, talk with girls' Univ. students @Kobe Univ.

(2) Aug. 3, 2015

Science tour to ship donk in Kobe Univ. @Kobe

(3) Oct. 18, 2015

Experiments @ Osaka Univ. and Nara women Univ.

(4) Nov. 15, 2015

Experiments @ Osaka Pref. Univ. and Kyoto Univ.

(5) Jan. , 2015

Science tour to computer center @Kobe Univ.

(6) Mar. 20-21, 2015

Science camp of experiments and presentations, Closing @Kobe Univ.

Summer Girls' Science School

Aug. 6-8, 2015

Aug. 6

Opening,

Carrier Lectures (Women researchers in company, graduate female student)

Science battle (Quiz, collecting stamps)

Group discussion of parents and teachers

Aug. 7

Experience the future in science course

Science café

An astronomical observation

International exchange with foreign students

Poster exhibitions and carrier counseling with members from 36 academic societies and associations

Carrier planning

Aug. 8

16 Experiments proposed by academic societies and associations

Closing

36 academic societies and associations support the camp in 2015

No.	団体名	テーマ
1	一般社団法人 日本生物物理学会	WHY BIOPHYSICS(生物物理)?
2	日本蛋白質科学会	蛋白質の形と働き
3	日本発生生物学会	生き物の形作りに学ぶ
4	公益社団法人 日本化学会	世界で活躍する女性化学者ー皆さんもチャレンジしよう
5	公益社団法人 日本天文学会	宇宙を観る・宇宙を知る～天文学最前線で活躍する女性研究
6	地球電磁気・地球惑星圏学会	
7	「分野・地域を越えた実践的情報教育協働ネットワーク」女性部会(WiT)	
8	独立行政法人 国立高等専門学校機構	
9	J-Win 第4期技術系分科会	
10	日立技術士会 「チーム・技魔女」	
11	公益社団法人 土木学会	
12	一般社団法人 電気学会	
13	日本地形学連合	
14	公益社団法人 日本地球惑星科学連合	
15	一般社団法人 ナノテクノロジービジネス推進協議会	
16	特定非営利活動法人 日本分子生物学会	
17	日本海洋学会 教育問題研究会	
18	一般社団法人	

No.	団体名	テーマ
25	公益社団法人 日本火災学会	火災から命と財
26	公益社団法人 日本金属学会	面白いぞ！材料
27	一般社団法人 日本鉄鋼協会	鉄の世界 広が
28	一般社団法人 日本原子力学会	あなたにも将来 原子力・放射線
29	WIN-Japan	日本のエネルギー
30	一般社団法人 日本数学会	結び方と数学
31	公益社団法人 応用物理学会	夢をかたちに～
32	一般社団法人 日本物理学会	(1)ハンドパワ (2)不思議な原
33	一般社団法人 日本木材学会	低炭素社会を築
34	一般社団法人 土木技術者女性の会	いのちを守る土
35	関東学院大学 土木系女子学生の会	私たち、どぼじ ～暮らしを守る
36	特定非営利活動法人日本電磁波エネルギー応用学会(JEMEA)	電子レンジ(マ

Activity 1 : Experiments

3-4 Hours Experiments (Girls' Spring school)

Junior high school students

- "Mysterious Taste"
- "World of ultra-low temperature"
- "Make a clean energy"
- "Find out bacteria"
- "Solar and Heliospheric Observatory"
- "Paleoclimatology ~ Climate estimated by stone"
- "Try out computer simulation"

High school students

- "Person who can drink alcohol a lot or not"
- "Science of thunderstorm"
- "Make a clean water"
- "Catch cosmic ray"
- "Present from earth"
- "Kinetics of spaghetti "
- "Make crystal radio"
- "Simulation of Astronomy "
- "Story of Tasting"

Experiments



Unison of human and music by accelerated sensor



Experience of Superconductivity



Measuring radiation

Activity2:

Presentation of experimental report

After doing experiment

- Preparation in each group
- Poster or oral presentations
- Introduction of experiments to friends and parents

Significance :

- Deeper understanding about experiments by preparing ppt
- Deeper understanding by asking questions to teachers
- Increase of communication ability in a team
- More learning by listening and asking about other students' presentations
- Make Friends

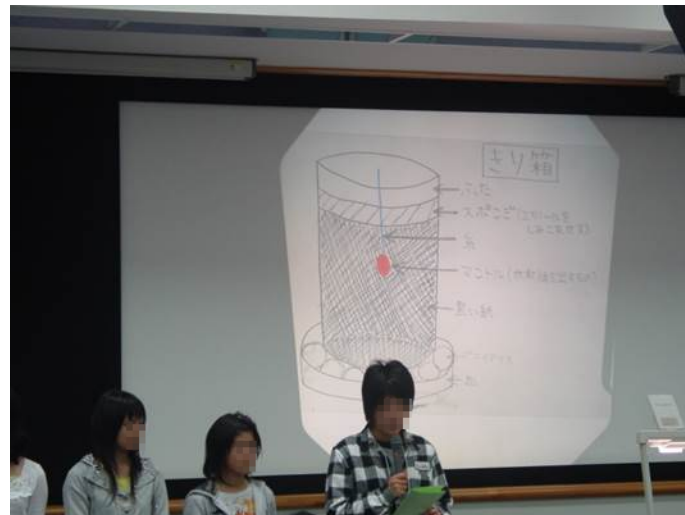
In 2009 Junior open Lab



Catch Cosmetic Ray



In 2007 Science Cafe



In 2007 Science Cafe

Activity3 : Discussion with female researchers

- Lectures
- Discussion
- Scientific tours
- Discussion with Girls' students (Experimental teaching assistant, committee members, OG)

In order to make image of their future in detail after they chose science course.



Activity 4:

Exchange discussion with Korean girls

Summer science camp (Japan) ↔ Physics summer camp (Korea)

Korea-Japan Exchange Program

2008

2009



Initiation Interaction **International**

Advantages of Girls' Science School

- Enjoy science → very important (for us too!)
- Do experiment for themselves (Students have little experience in junior and high school)
- Effect to parents and teachers
(in case of joining events and get information of news letters)
- It is very important that students feels “interesting!”
- Let the barrier to choose science course lower

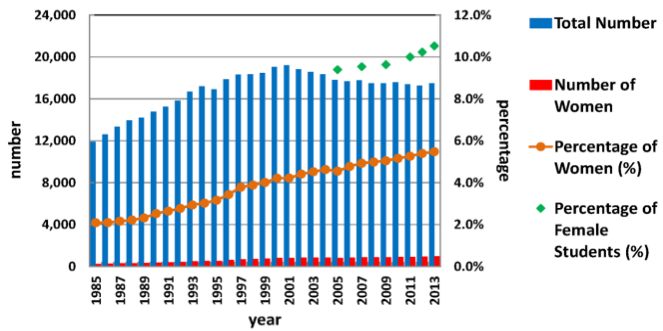
Significance of Girls' Science Schools

- Removal prejudice that girls usually choose liberal arts, pharmacy, or doctor courses.
- Parents and teachers make big influences to students.
- Female students can make friend and be relaxed. (Nobody likes to enter field where there are few females.)
- There are many cases that almna (graduates) become TA, and researchers, who come back to science school again.

At first, we let girls' student enjoy science, and get rid of uneasiness, and show blight feature.

Graduates come back to science school again as supporting stuffs, such as TA, teachers, and researchers.

Number and Percentage of Women in JPS



Comparison of two camps

	Summer camp	Spring camp
Start year	2005	2007
Venue	National women education center of Japan (NWECC, Saitama)	5 Univ. of Kansai area (Kobe, Osaka, Kyoto, Nara, Osaka pref.)
Date	1 night 2 days in Aug. (2005)	1 night 2 days in Mar. (2007-2009)
	2 nights 3 days in Aug. (2006-)	3 events and camp. (2010) 4-5 events and camp (2011)
Administration	National women education center of Japan (NWECC, Saitama)	NPO (2007, 2008) Each University (2009)
Executive committee members	Bolunteers (researchers, technithians, teachers, students, NWECC stuffs)、Academic society members	Academic society members (2007, 2008) University, company (2009)
How many students join?	From all over Japan Junior and high school students 100 (2005-2012), 120 (2013) Parents and teachers 50 (2008-)	Kansai areaを中心に 60人(2006年度)、80-90人(2007-2011年度)、150人(2012年度)、120人(2013年度) 他保護者・教員30人
Event contents	講演、実験・実習、ポスター展示、先輩との対談、クイズ	実験・実習、その発表(サイエンスカフェ風)、講演、先輩との対談、研究所見学
特徴	女子大学生(学部・大学院)ボランティアが企画から参加、30以上の学会等によるキャリアアドバイス、女子中高生どうしの継続的交流、国際交流、卒業生の活用(サイエンスアンバサダー)	実験・実習を重視、グループによる発表コンテスト、付き添いの親・教員も参加
学協会の協力	30以上の学会からのキャリアアドバイス、一部学会からの景品提供	一部学会からの寄付金、景品提供

Differences

- Venue
- 開催回数
- 募集地区範囲
- Organizers

JST project “for junior and high school女子中高生理系進路選択支援事業」に毎年採択され、継続的発展的に実施。