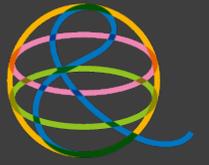




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# The Natural Disaster and the Role of Science Museums

16 Nov. 2017

Daegil Hong, Ph.D.  
Daegu National Science Museum in Korea



## Daegil, HONG, Ph.D.

Science Communication Designer

Director, Daegu National Science Museum, Korea

- BS in Astronomy, The Seoul National Univ.
- MA in Broadcasting and Journalism, Sogang Univ.
- Ph.D in Design, The Seoul National Univ. of Science and Technology
- Former Reporter, the Science Dong-A and the Digital Times
- Former Representative, NASA Museum Alliance in Korea



Over 30 years, I authored several science books for children. I engaged in producing a TV series related to science, 'Hogisim Cheonguk" (Curiosity Heaven)'. I had a key role in founding a bi-weekly science comic magazine, 'Children's Science Donga,' and two newspapers including 'The Digital Times'. I designed and managed a lot of science events and contests including the 'Nobel Science Essay Contest'.

# I. Science Technology Risk & Social Issues in Korea

# Science Technology Risk and Hazard

Science Technology Risk	Hazard
Risks by the science and technology	GMOs, radioactive waste, chemicals, vaccines, antibiotics, nanotechnology, transmission towers, nuclear power, cybercrimes, industrial accidents, genetic manipulation, etc.
Risks through science and technology to find causes or find countermeasures	Environmental pollution, epidemics, natural disasters (earthquakes, tsunamis, typhoons, volcanic activity, heatwaves, heavy snow, heavy rain, dust, dirt, floods, drought, wildfires)

## Case I : *Sewol Ferry Disaster (16 April 2014)*



Deaths : 304 persons  
(students 261 persons)

The Sewol Ferry disaster contributed to the political downfall of President Park Geun-hye, at last ending her presidency.

**Park Blue House doctored files on Sewol sinking**

- Korea JooAng daily, Oct 13,2017

**Documents indicate former president lied about her role during Sewol sinking**

- The Korea Herald , Oct 12, 2017

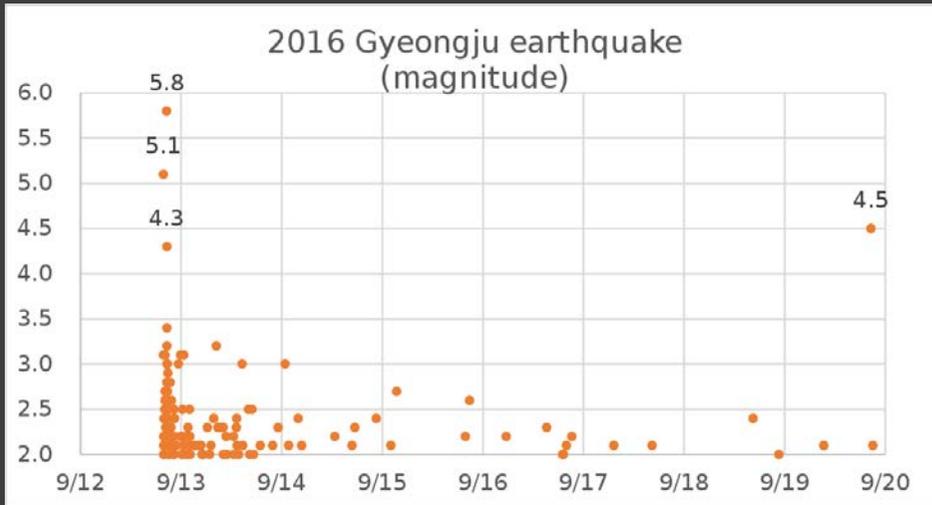
## Case II : Gyeongju earthquake(12 September 2016)

Strongest-ever earthquake hits Korea, tremors felt nationwide

- The Korea Times, 2016-09-12

After Gyeongju earthquake, stress tests for nuclear power plants moved up one year

- The Hankyoreh, Sep.19,2016



[https://en.wikipedia.org/wiki/2016\\_Gyeongju\\_earthquake](https://en.wikipedia.org/wiki/2016_Gyeongju_earthquake)

Status of nuclear power plants in Korea



Gyeongju earthquake (16 April 2014)

## Major earthquake hits Pohang, CSAT delayed

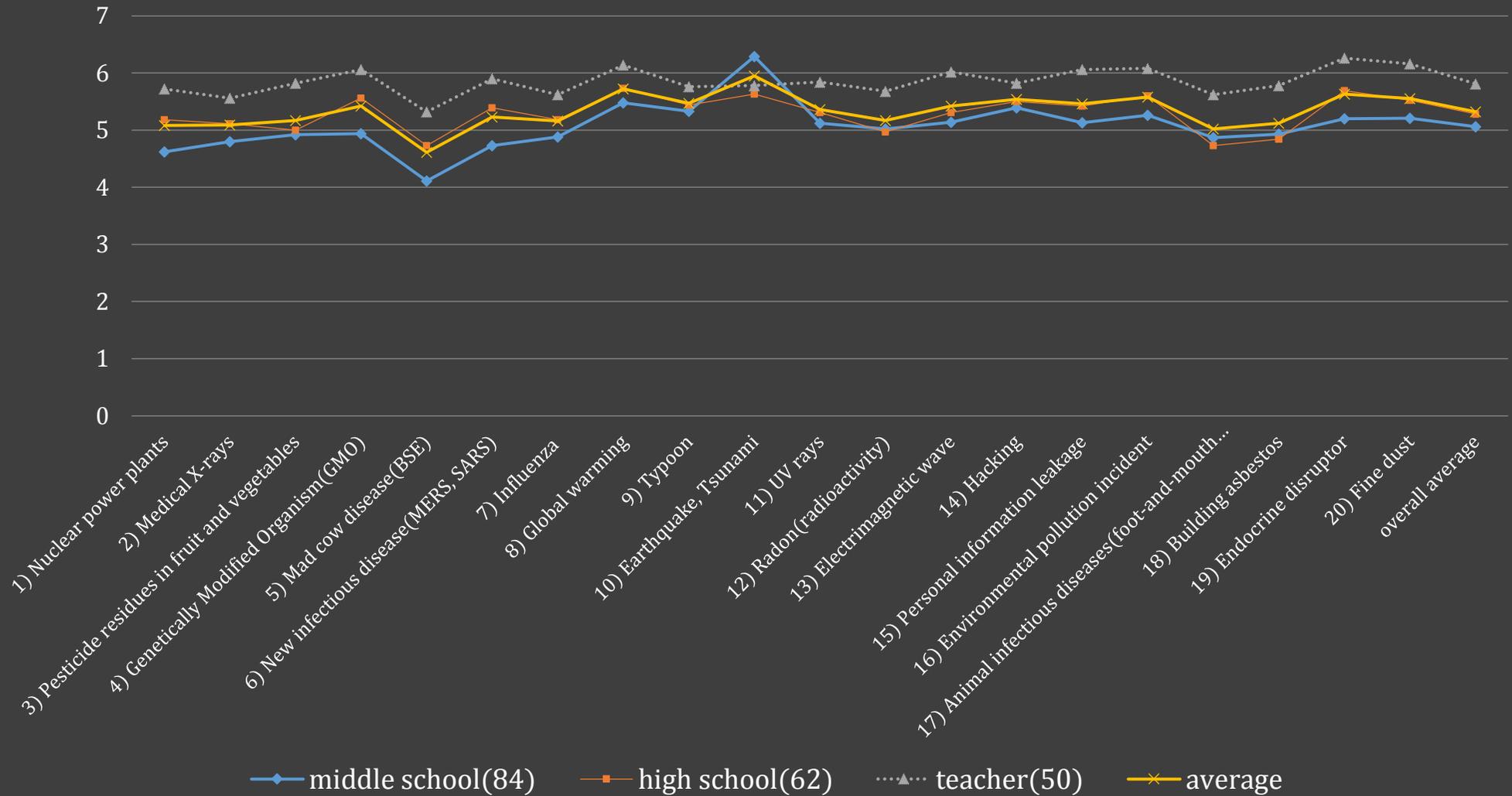
- Korea JoongAng Daily, Nov 16,2017



Source : Korea JoongAng Daily, Nov 16,2017

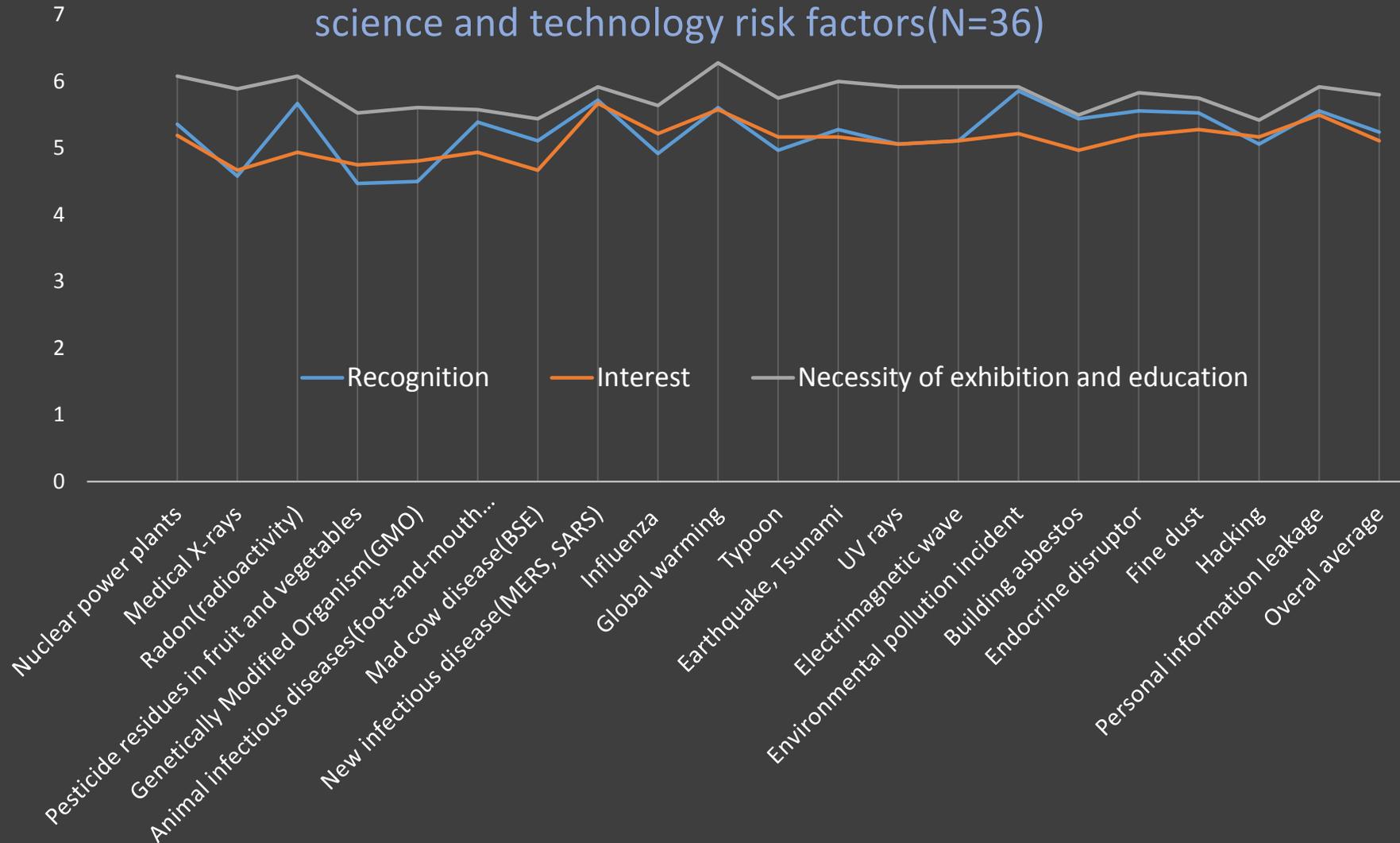
# III. Science Technology Risk & Science Museum

## Do you think the following risk factors need to be exhibited and educated in the science museum?(N=196)



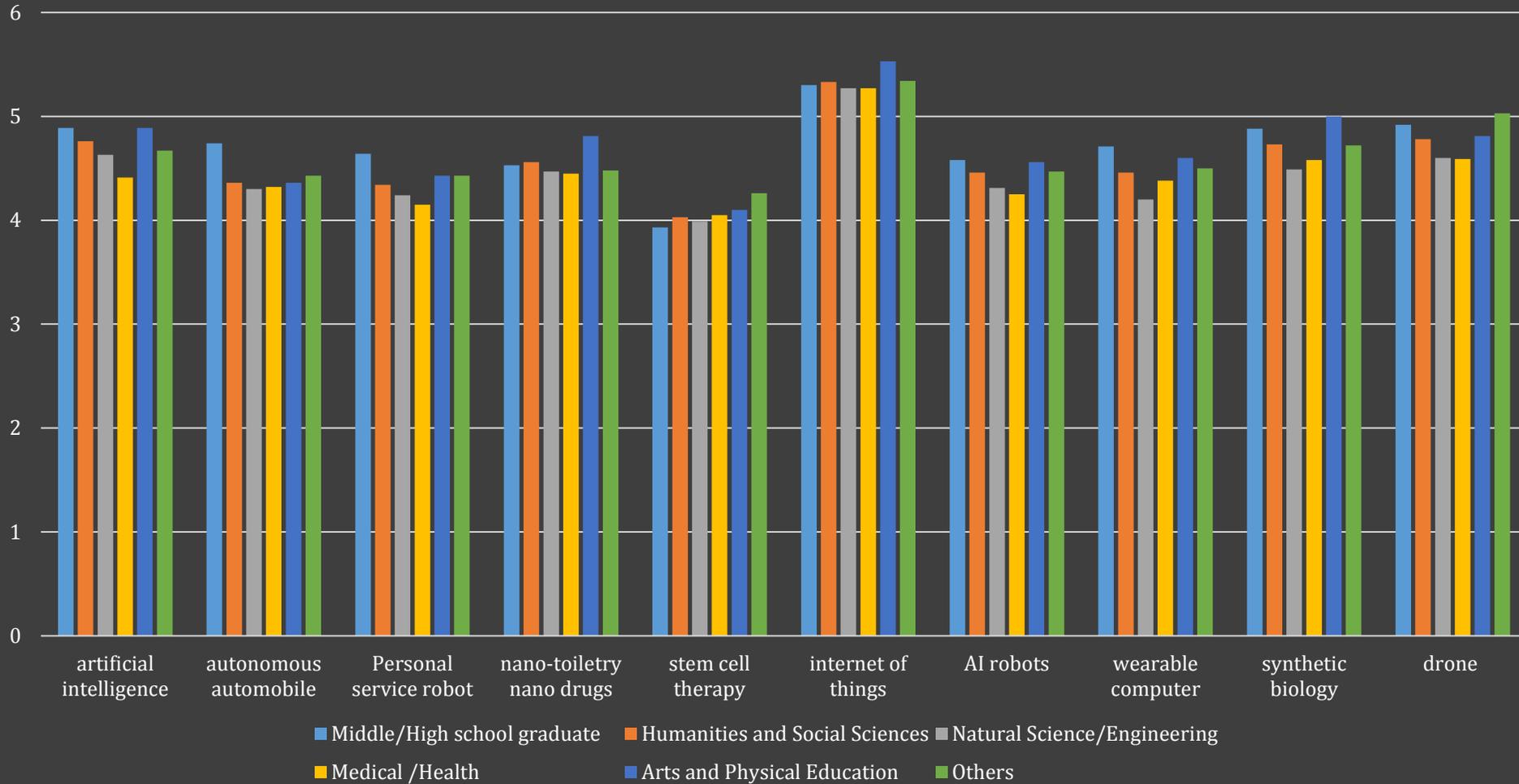
Source : D. Hong. (2016), Risk Information Communication in Science and Technology Between Science Museum and Users in the EPL Model

## Recognition / interest / necessity of exhibition and education of science and technology risk factors(N=36)



Source : D. Hong. (2016), Risk Information Communication in Science and Technology Between Science Museum and Users in the EPL Model

## Future science and technology risk perception by major(N=1,154)



Source : D. Hong. (2016), Research on future science and technology risks, KOFAC

## science museums for risk information communication

**Science museums influence the knowledge and attitudes of the individual.**

According to a survey(Hong, D, 2016)

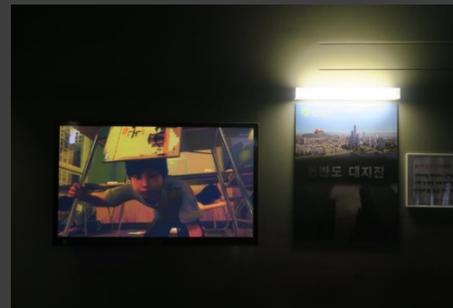
1. Science Museum has insufficient communicative function, but high reliability.
2. Users have a need for exhibition and education about the risks of S&T.
3. Users demonstrated trust in the information provided by science museum. The level of this trust correlated with the level of trust in the science museum itself.

## IV. Natural Disaster & Science Museum

# Exhibits and Activities for Risk Information Communication in Daegu National Science Museum



Science Newspaper



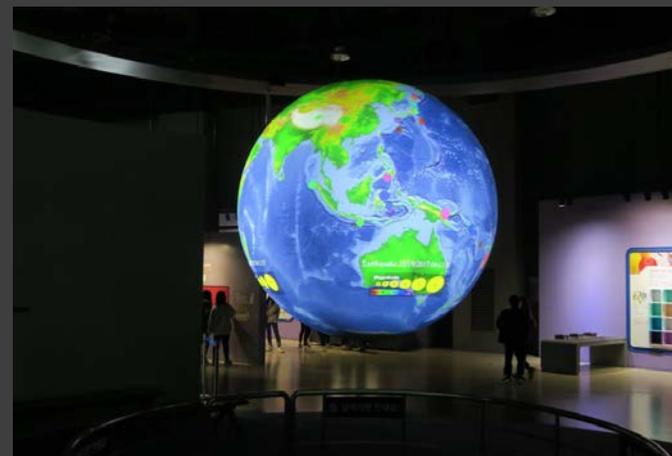
4D theater on earthquake



Survival backpack



Lecture on earthquake



Real time earthquake of Science on Sphere



Doing CPR

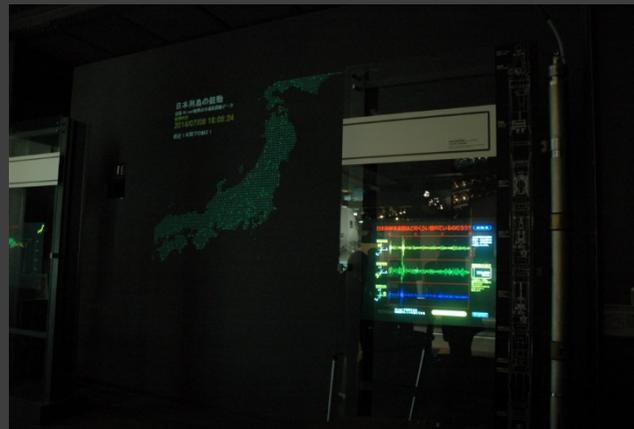
# Disaster Response Safety Drill in Daegu National Science Museum Nov. 2 2017



# V. International Cooperation



Earthquake Education  
Science Museum  
(Tokyo, Japan Science Foundation)



Realtime earthquake display  
Miriakan  
(Tokyo)



Early seismometer  
National Museum of Nature and Science  
(Tokyo)



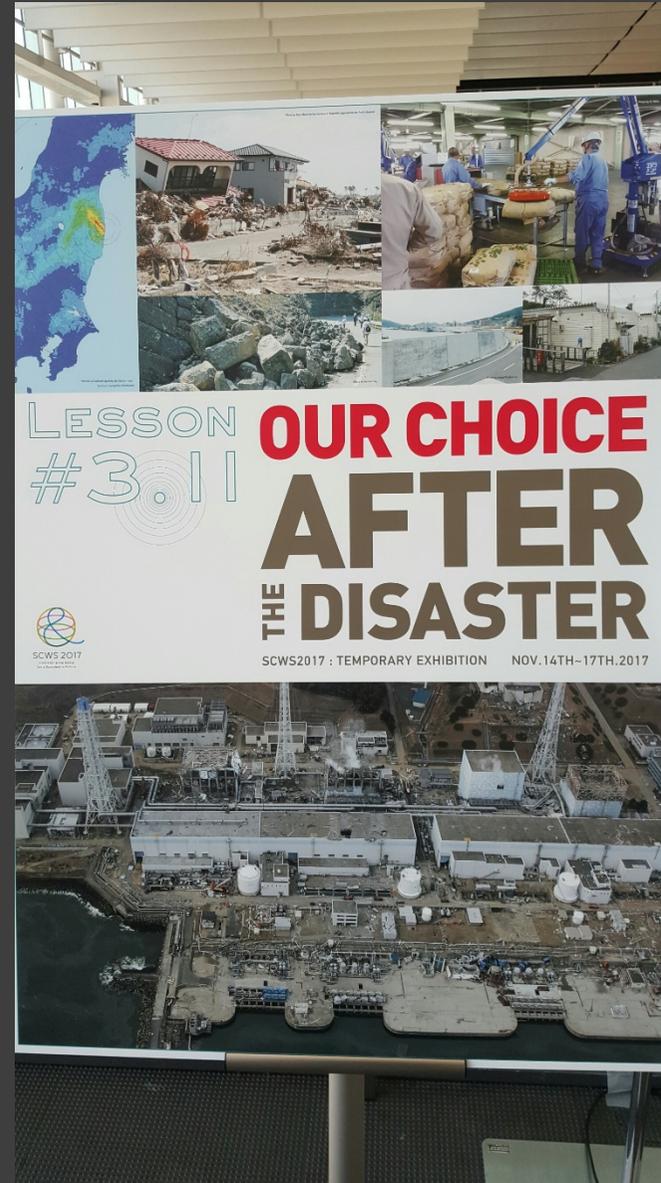
Chinese old seismometer  
( Dongguan Science Center)



Realtime seismometer  
( New York, American Museum of Natural History)

I'd like to propose the building of a system for international cooperation between science museums in order to share information on natural disasters taking place around the world, such as earthquakes (tsunami earthquakes), epidemics, climate anomalies, etc.

The system will promote exhibitions and educational programs in science museums.



# Thank you.

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