

Gender Summit 6- Asia Pacific 2015

# Female Participation in Research and Innovation: Evidence in China

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# Outline



- Science and Innovation in China

- Gender Based Innovation in China



- Policy for better female participation of Science and Innovation



# China is world innovation



- High speed train
- High speed computing
- High voltage grid
- High volume internet
- High yields hybrid rice



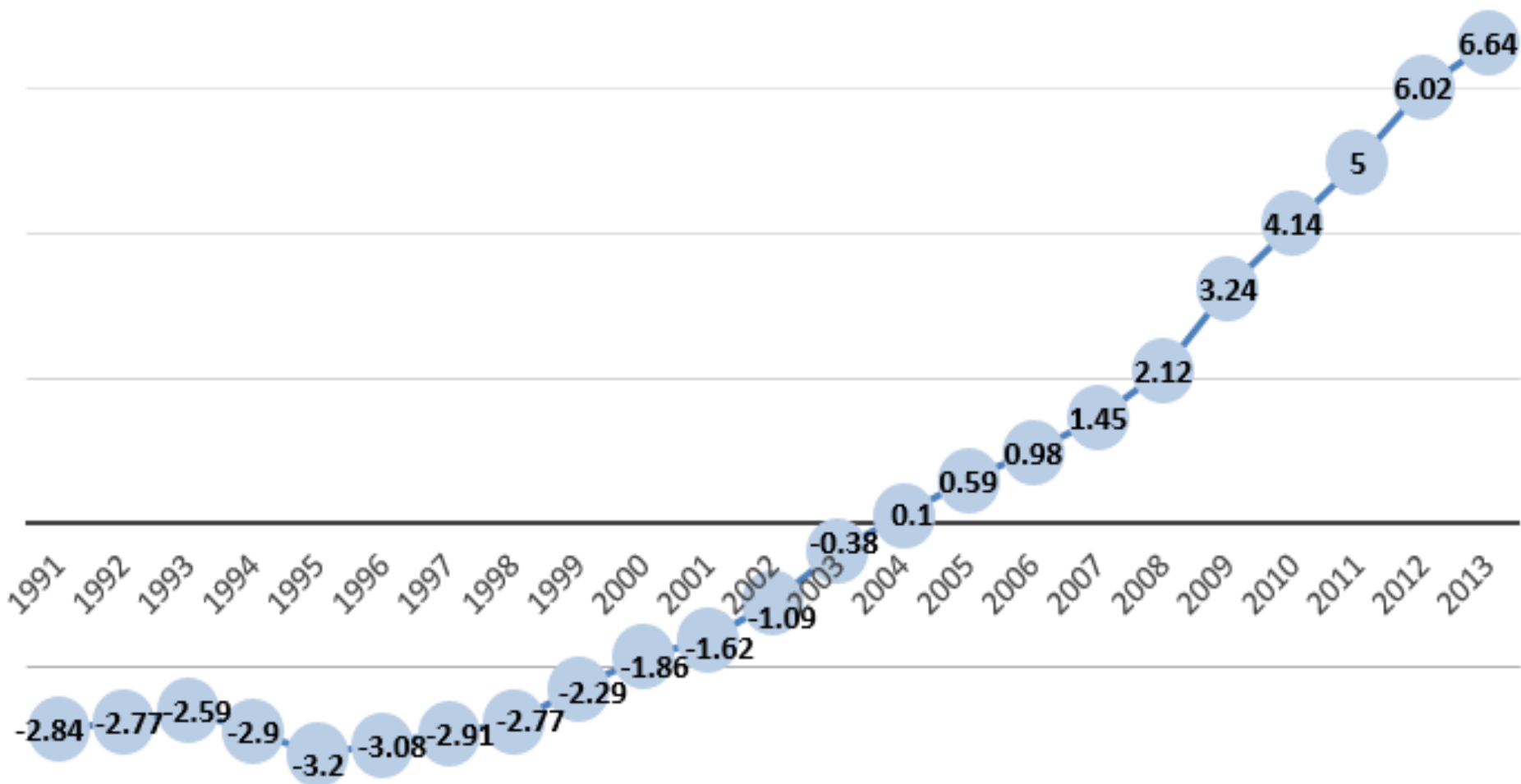
# Science and Innovation in China

科学精神





Reverse Innovation: China gets succeed in 350  
KM/h and 380KM/h in the world and expected to  
600-800 KM/h



## China's Innovation Index (1991-2013)

Source: Bluebook of China's Innovation 2015 (Edited by Chen Jin, forthcoming)

# Oriental Innovation



- Western way: Risk taking and Make a change



- Eastern Way: Fast learning and Integration



# China's Way



- China's way: The harmony between man and nature (天人合一), or even man over nature in china (人定胜天)
- Concentrate our forces on a major task(集中力量办大事)
- Women could be the half of the heaven (妇女能顶半边天)





# Gender Based Science in China

Gender Science



# China's Way



- China's way: The harmony between man and nature (天人合一), or even man over nature in china (人定胜天)
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# China's Way



- Women Scientists occupies 1/3 of the total R&D staff
- Female Ph.D. students occupied 1/3 of the total Ph.D. students

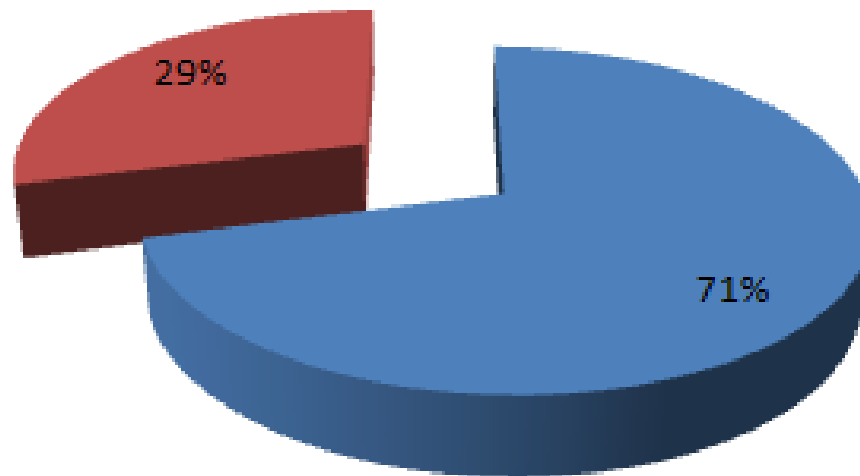


# Zhejiang University



The proportion of females of graduate students in Zhejiang University

■ Total ■ Female

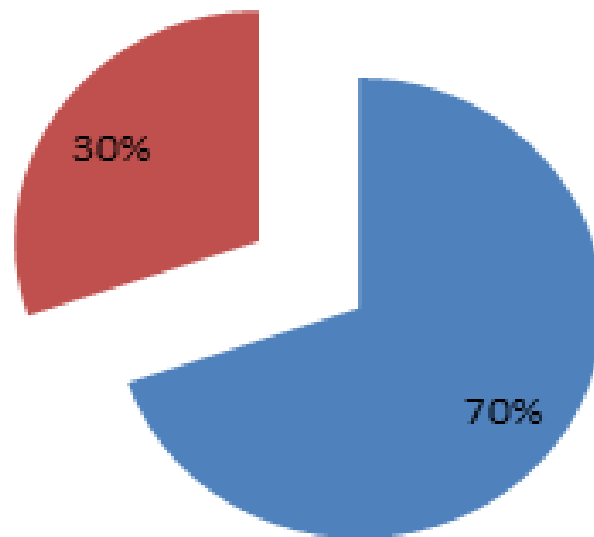


# Zhejiang University



## The proportion of females of Master students

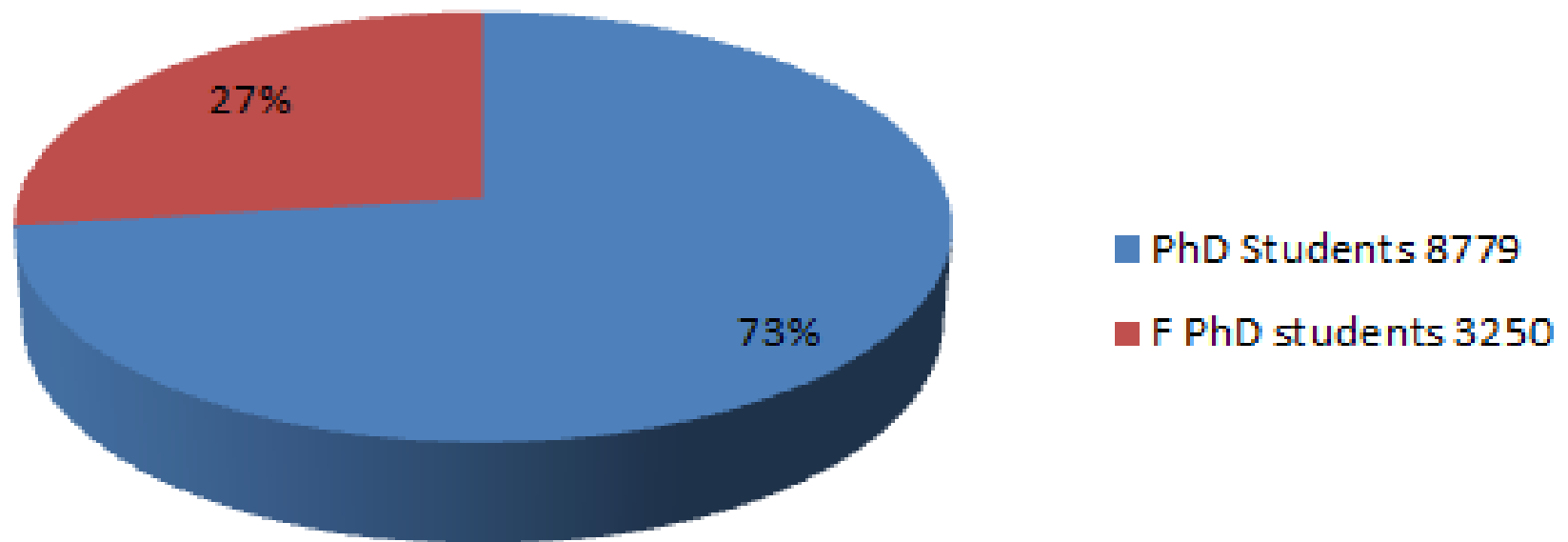
■ Master students 13952    ■ F Master students 6053



# Zhejiang University



## The proportion of females of PhD students



## Applied Projects for Junior Youth Excellent of NSFC

Department	Gender		
	Total	Female	Male
	<b>1199</b>	<b>238</b>	<b>961</b>
%	100%	19.85%	80.15%
Math and Physics	150	17	133
%	100%	11.33%	88.67%
Chemistry	173	33	140
%	100%	19.08%	80.92%
Life Science	169	41	128
%	100%	24.26%	75.74%
Geoscience	117	21	96
%	100%	17.95%	82.05%
Engineering and Materials	220	36	184
%	100%	16.36%	83.64%
Information Science	165	24	141
%	100%	14.55%	85.45%
Management Science	44	14	30
%	100%	31.82%	68.18%
Medical Science	161	52	109
%	100%	32.30%	67.70%

# Applied Projects of Youth Excellent of NSFC

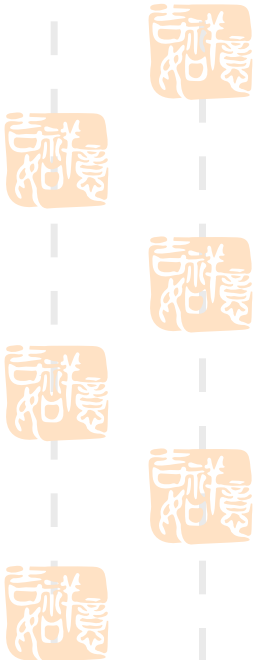
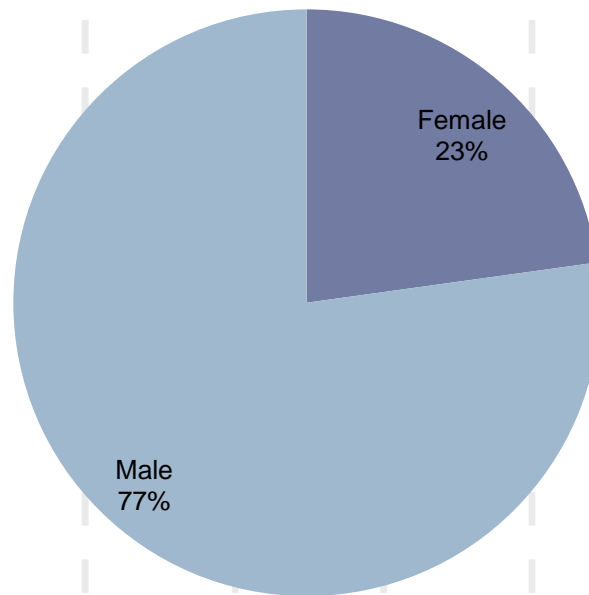
Department	Gender		
	Total	Female	Male
	<b>3232</b>	<b>277</b>	<b>2955</b>
%	100%	8.57%	91.43%
Math and Physics	493	14	479
%	100%	2.84%	97.16%
Chemistry	454	42	412
%	100%	9.25%	90.75%
Life Science	559	61	498
%	100%	10.91%	89.09%
GeoScience	336	24	312
%	100%	7.14%	92.86%
Engineering and Material	565	45	520
%	100%	7.96%	92.04%
Life Science	370	20	350
%	100%	5.41%	94.59%
Management Science	98	10	88
%	100%	10.20%	89.80%
Medical Science	357	61	296
%	100%	17.09%	82.91%



# Chinese Female Scientist

- Female Winner of the National Science Fund for Distinguished Youth

2013 Winner of the National Science Fund for Distinguished Youth



# L'Oréal-UNESCO For Women in Science Awards-Chinese Scientists



- Li Fanghua (simplified Chinese: 李方华; born 6 January 1932) is a Chinese physicist.
- She is a member of the Chinese Academy of Sciences, the World Academy of Sciences, and the International Union of Crystallography.
- She is also the director of Chinese Society of Physics and China Union of Crystallography, and an editor of the Journal of Chinese Electron Microscopy Society, J. Electron Microscopy, Chinese Physics Letter, and Chinese Journal of Physics.
- Li is fluent in English, French, German, Japanese, and Russian.
- Li won the L'Oréal-UNESCO Award for Women in Science in 2003.



# L'Oréal-UNESCO For Women in Science Awards-Chinese Scientists



- ▶ Nancy Ip(叶玉如) was born in British Hong Kong on July 30, 1955, with her ancestral home in Taishan, Guangdong.
- ▶ She received her Bachelor of Arts in Chemistry and Bachelor of Biology degrees from Simmons College in 1977. And she earned a doctorate in pharmacology from Harvard University Medical School in 1983. After graduation, she spent the early part of her scientific career in the USA, and was Senior Staff Scientist at Regeneron Pharmaceuticals Inc., New York.
- ▶ She became a professor at Hong Kong University of Science and Technology since 1993.
- ▶ She was elected a fellow of the Chinese Academy of Sciences in 2001.
- ▶ In 2004, she received the L'Oréal-UNESCO Awards for Women in Science Award at the 6th Annual L'Oréal-UNESCO For Women in Science Awards.



# L'Oréal-UNESCO For Women in Science Awards-Chinese Scientists

- Professor Vivian Wing-Wah Yam (任咏华)(born February 10, 1963) is a chemist from Hong Kong. The youngest member to be elected to the Chinese Academy of Sciences (as of 2013),
- 2011 L'Oréal-UNESCO Awards for Women in Science laureate "for her work on light-emitting materials and innovative ways of capturing solar energy."



# L'Oréal-UNESCO For Women in Science Awards- Chinese Scientists

- Yi Xie was born on July 23, 1967
- She entered Xiamen University in September 1984, majoring in chemistry at the Department of Chemistry, where she graduated in July 1988. After college, she was assigned to a chemical plant in Hefei as an assistant engineer.
- In September 1992, she was accepted to University of Science and Technology of China, studying chemistry under Qian Yitai, and she earned a doctorate in May 1996. Then she taught at there. From September 1997 to July 1998, she studied at Stony Brook University.
- Xie became a professor at University of Science and Technology of China since November 1998 and doctoral supervisor since April 1999.
- In August 2013, she was elected a fellow of the Royal Society of Chemistry.
- On December 19, 2013, she was elected a fellow of the Chinese Academy of Sciences.
- On March 3, 2015, she won the L'Oréal-UNESCO Awards for Women in Science Award at the 17th Annual L'Oréal-UNESCO For Women in Science Awards.



# Young Women Scientists



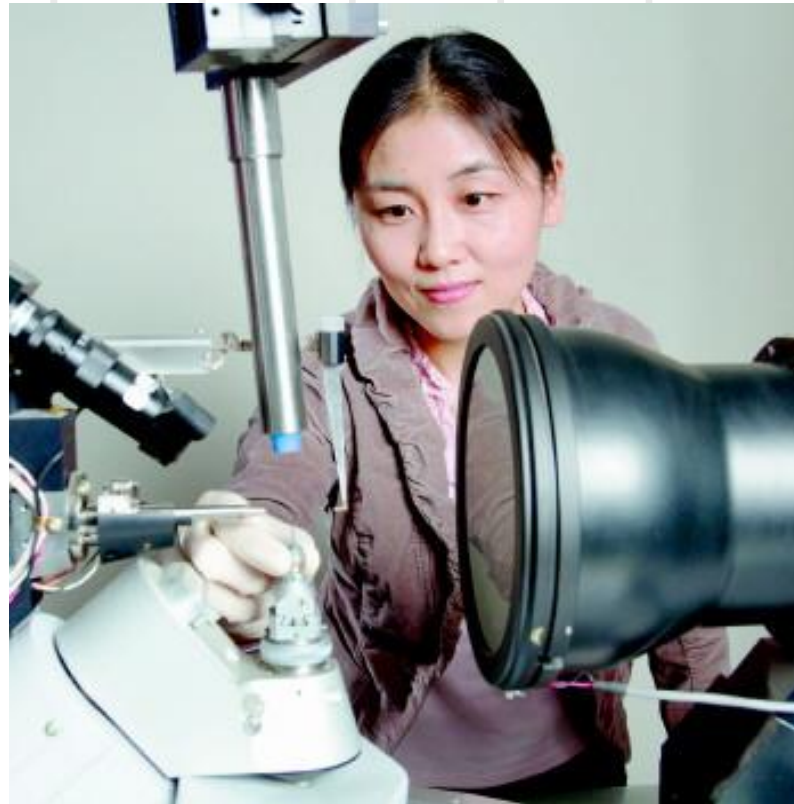
- Ning Yan, PhD. Born 1977
- Professor in Tsinghua University
- 1996-2000 B.S., Department of Biology, Tsinghua University
- 2000-2004 Ph.D., Department of Molecular Biology, Princeton University
- 2005-2007 Postdoc, Department of Molecular Biology, Princeton University
- 2007 Professor, School of medicine, Tsinghua University





# Research is Beautiful

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# Critical Successful Factors for Women Scientists



- Quality Higher Education

- Research Grants



- Working Environment



- Family Harmony





# Science Policies for China

科学政策



# Education Policy



- Invited more female students joining graduate and Ph.D. studies
- Promote oversea studies



# Research Policy



- Prolong the age limitation of young excellent grants
- Prolong the research period of female principals
- Increase the female scientists to review process



# Technology and Innovation Policy

- Increase the number of national high level science and technology awards for women scientists

■ Reward more beyond research.

Encourage the engagement in technology, engineering and business.

# L'Oréal: Women in Science 中国青年女科学家奖



**ACWF: All-China Women's  
Federation**

**CSTA: China Science and  
Technology Association**

**China National Commission  
for UNESCO**

**L'Oréal**



# Link Science and Business



- Only 3 of the patent holders are female
- (3.66% in 2009, 2.4% in 2010 in Zhejiang University)



From half to whole

香齋





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Thanks