Best Practices for Gender Equality in Science

Eun Hee Cho
Chosun University
Gwang-ju, Korea
Best Practices

Diagnosis
- Deliberate data collection
- Careful analyses
- Quantitative and Qualitative

Customized Practices
- Promote Individual competitiveness
- Educate more female students
- Laws and Policies
- Provide funding
- …
Institutional Transformations

1. Promotion of Research and Teaching on Gender Issues

2. Data Collection

3. Funding
   - U. S. National Science Foundation's ADVANCE (Advancement of Women in Academic Science and Engineering Careers) program
   - the European Commission's Women and Gender in Research programs
   - the Austrian Science Fund's Gender Mainstreaming program.
Family-Friendly Policies

- "Stop the Tenure Clock" (STC) policies
  - To allow faculty to extend their probationary periods and postpone tenure reviews to account for major life events, such as the birth or adoption of a child.

- Childcare Services
  - Quality childcare, emergency childcare, and care at conferences.

- Dual-Career Academic Couples
  - Policies for couple hiring can significantly improve a university's hiring competitiveness.
Re-Entry Fellowships

- **United States National Institutes of Health (NIH) Reentry Grant Supplements**: grant supplements to facilitate reentry of scientists who have taken time off to care for a child or parent.

- **The Wellcome Trust & the U.K. Daphne Jackson Trust** also provides re-entry fellowships.

- **US NSF**: To defer grant-funded work for as long as a year due to childbirth or adoption (US NSF).

- **The University of Wisconsin**: Life-Cycle Research Grant Program that support women scientists at critical junctures in their professional careers when their research productivity would be affected by personal life events, such as illness, childcare, and pregnancy.
Recruiting Strategies

- The University of Pennsylvania

- Increased recruitment of women physicians by including information about the University's broad goals and public health mission in job descriptions, as well as providing information about the University's family-friendly policies (such as daycare facilities and mentoring programs) in "resource packets" for both women and men applicants.

- This strategy tripled the representation of women in surgery over eight years.
Strategies and Tactics for Recruiting to Improve Diversity and Excellence (STRIDE)

- the University of Michigan (UM)

- An innovative program designed to reduce subtle gender and race bias

- This program maximizes the likelihood that a group of diverse, well-qualified candidates for faculty positions will be identified.

- New hires in science and engineering; women comprised 39% in 2004 vs 13% in 2001.

- A total of eight women have been appointed department chairs in science and engineering since ADVANCE programs began.
The Promotion Project

- the University of Tromsø (UiT) in Norway

- To increase the percentage of women full professors and docents at the University of Tromsø

- from its current level of 25% to a new level of 30%.

- It allows women associate professors who are approaching qualification for promotion to
  - (a) undergo a trial evaluation with no penalty, and
  - (b) access funding which can offer buy-out from teaching duties, directly support research, etc.
Efforts in Korea

1. Legislations and Government Policies

2. Education: Activities of WISET
   (Center for Women in Science, Engineering & Technology)

3. Promoting Leadership: KOWFST
   (Korean Federation of Women’s Science and Technology Associations)
Level 1. Governmental Policies

- **Act on Fostering and Supporting Women Scientists and Engineers**, enacted in 2002

- **Affirmative Action Policies for Women in S&T**
  - A quota of 30% employment and promotion of women in national and governmental S&T institutes
  - A quota of 30% (35%) women in governmental committees in ministries related to S&T fields
  - Action plan to employ more female faculties in national universities
  - Policies supporting women scientists in research
  - WISE Center (→ KAI WISET)
Level 2. Education : WISET

WISET
Center for Women in Science, Engineering and Technology

WISET; We SET the FUTURE

Female Middle- and High-school students
Female Undergraduates and Graduates
Employed Women in SET
Job-seeking Women in SFT
Fostering Female Students in Science and Engineering

Girl-Friendly Engineering Education Program
- Lab visits (for middle and high school students)
- Research lab visits (for high school students)
- Advice on further education

Gender-Mainstreaming in Engineering Colleges
- Gender-sensitive teaching workshop (for professors)
- Professional empowerment for female students
- Improvement of curriculum, research environment and legal system
Organizing Research Team

- Project leader: one graduate student (master or doctoral degree)
- Researchers: two undergraduate and four high school students
- Mentor group: an adviser, a guidance teacher and a female engineer working in a relevant industry

Research Activity

- Each team conducts autonomous research
- Mentors give guidance when necessary
- Participation in online mentoring is mandatory
- Site visits can be scheduled to the related research laboratories or industries

Capability Building Workshop

- Research capability development workshop (April)
- School-industry mentoring collaboration workshop (August)
- Research presentation (October)

Research Career Development

- Publicize research results in domestic or foreign academic societies and apply for patents
Travel Grant

- Support research activities of female doctorates in science and engineering in contractual positions
- Support participation in domestic and foreign academic societies: Oral and slide presentations
- Support overseas training

Young Female Researcher Award

- Rewards and cash prizes for emerging female scientists and engineers’ research papers or posters at professional science and engineering societies
- Open To: Graduates and Post-doctorate students in science and engineering

R&D Returnee Program

- Support women scientists and engineers to return to work and research after maternity leave, in order to prevent career discontinuity
- Help female scientists and engineers to return to research fields
- Help non-regular scientists and engineers avoid career discontinuity
- Support training and employment of research equipment specialists (In collaboration with Korea Basic Science Institute)
Leadership Training
- Offer leadership and development training targeted to the needs of women at all stages of their career

Consulting Technology-based Venture
- Consulting by venture biz-plan (6 times a year)
- Partial support for patent application
- Provide practical information introduce government support projects and educations

Science Service and Communication Training
- Science Communicator Course

Management of Technology (MOT)
- Open To: Incumbent doctorate female scientists and engineers
- Strengthen R&D task management
- Subjects: MOT strategy, technology innovation, commercializing technology, project management, R&D manpower management, etc.

Career Management Consulting
- 1:1 sessions with professional consultants to help build successful careers
Online Life Long Mentoring

- WISET's mentoring site provides advice from mentors regarding school admissions, career goals, paths and management. It also connects mentors with those who need support.
- Study-path mentoring (further education advice): provides information to female middle and high school students regarding majors, universities and/or research centers in science and engineering.
- Career-path mentoring (employment and career development): provides information for students of science and engineering in their search for employment and the setting of career paths.
- Career management mentoring: helps women in science and engineering to successfully overcome career stagnation and discontinuity, offers advice on how to balance life and work and much more.

Open Mentoring
Symposia and Conferences

- April
  - Annual Conference of Women in Science and Engineering (co-sponsored by KOWFST)
- July
  - Women’s Division at Korea Conference on Innovative Science and Technology (co-conducted with KOFST)
  - KOFWST-WISET-STEPI Joint Forum
- August
  - Wisdom Donation Lectures
  - Girls’ Engineering Week (GEW)
- November
  - Mentoring Day
  - Achievement Presentation

Supporting Networks of Women Scientists and Engineers

- Support activation of organizations and network strengthening projects
- Discover and publicize outstanding organizational activity case
- Achievement rewards

Domestic and International Cooperation
Knowledge and Information Sharing

WISET provides information necessary for female scientists and engineers in the fields of employment, scholarship, research and policy, etc. We also make knowledge information-processes concerning our business such as periodicals, statistics and trends, etc. open to all.

Information Sharing and Public Relation

- Provide Information
  - Employment information: job advertisements
  - Employment news
  - Scholarship information
  - Research information
  - Policy information
- Publish Newsletter (biweekly)
- SNS: social websites, blog reporter group

Knowledge and Data Resources

- Publications
  - Research or survey reports
  - Periodicals
    - WISET Journal of Junior Science & Technology
    - WISET Policy Brief
  - Books: Casebooks, etc.
- Promotional materials such as brochures
- Statistics
  - Investigation statistics on the current situation of female scientists and engineers
  - Re-analysis of government statistics
  - Domestic and foreign Statistics in related fields
- Trends
  - Using both domestic and foreign related materials
Level 3: Promoting Leadership

- KOFWST, The Korea Federation of Women Science and Technology Associations Established in 2003
Member Associations

Women's Network for Science & Technology in Gwangja-jeonnam | http://www.wonese.or.kr
Association of Daegu-Gyeongbuk Women in Science and Engineering | http://www.dgwise.or.kr
Korean Home Economics Association | http://www.khea.or.kr
Korea Institute of Registered Female Architects | http://cafe.daum.net/kirfa
Korean Women Dental Association | http://www.kwda.co.kr
Association of Women Korean Oriental Medicine | http://www.womma.or.kr
Korean Society of Community Nutrition | http://www.koscom.or.kr
Women's Committee of the Korean Chemical Society | http://newkcsnet.or.kr
Women's Bioscience Forum | http://www.womenbioforum.org
Network for Aspiring Women Scientists & Engineers | 051-720-2236
Association of Chungbuk Women in Science and Technology | 043-230-3755
Korean Society of Nursing Science | http://www.kan.or.kr
Women's Committee, Korean Society of Industrial Engineering Chemistry | http://www.ksiec.or.kr/sub2/sub2_3pl
Women's Committee, Korean Professional Engineers Association | http://www.kpea.or.kr
Women in Physics Committee | http://home.icpr.or.kr/~wip/
Korean Association of Human Ecology | http://www.kahe.or.kr
Women's Committee, Korean Ceramic Society | http://www.kcers.or.kr/
Special Committee for Woman in Korea Water Resources Association | http://www.kowra.or.kr

Korea Senior Woman Scientist Association | 041-540-9591
Korean Society of Food Culture | http://www.food-culture.or.kr
Korean Society of Food & Cookery Science | http://www.kfcs.or.kr
Korea Women's Society of Architects & Engineers | http://www.kowsae.or.kr
Korean Institute of Female Architects | http://kifaonline.com
Women in Science, Engineering, and Technology in Korea | http://www.witeck.or.kr
Korea Women Inventors Association | http://www.inventor.or.kr
Korean Women in Mathematical Sciences | http://www.kwms.or.kr
WIN-Korea (Women in Nuclear-Korea) | http://www.winkorea.or.kr
Women Information Technology & Science Association of Korea | http://www.wininfo.or.kr
Korea Society of Women Ocean Forum | 031-400-6263
Korean Medical Women's Association | http://www.kmwa.or.kr
Korean Nutrition Society | http://www.kns.or.kr
Korean Society of Clothing and Textiles | http://www.ksct.or.kr
Women's Committee, Korean Electrochemical Society | http://www.kees.or.kr
Women's Committee, Korea Information and Communications Society | http://www.kics.or.kr
Women's Committee, Korean Institute of Chemical Engineers | http://www.kiche.or.kr
Korea IT Business Women's Association | http://www.kibwa.org
Missions

- Encourage raising *competitiveness of women scientists* and engineers through networking
- **Nurture the next generation** of female scientists and engineers
- Review and suggest **policies from a gender equality perspective**
- Support establishment and development of new women’s S&T associations
- Promote cooperation and exchange with international organizations
Expanding Knowledge & Networking

- Annual Conferences and Assemblies
- KOFWST/Press/National Assembly/NGO Joint Forum Series (4)
- Women Leader’s Forum Series (38)
  - Towards a Bright Future
  - The Role of Women Leaders in Globalization of Commerce
  - Leadership in Science and Technology
  - Women Politicians: Their Bright and Dark Sides
  - Bilateral Relationship in S&T between New Zealand and Korea, and Women Leader’s Role in the Global Society
  - Communication and Small Business
  - The Current Status of Science and Technology Policies and Women Scientists Supporting Systems
  - New Trends in Health and Medicine
Woman Leader’s Forum
Amore-Pacific Woman Scientist Awards

Laureates of Grand Prix, 2006~2010

- **Kim YJ (2006)**
  Pharmacology
  Seoul National Univ.

- **Choi SJ (2007)**
  Chemical Engineering
  Inha Univ.

- **Yoo YS (2008)**
  Biochemistry
  Korea Institute of Science & Tech. (KIST)

- **Kim EK (2009)**
  Chemistry
  Yonsei Univ.

- **Kim V Narry (2010)**
  Biology
  Seoul National Univ.
Publications

- Woman Meets Science (2005)
- Following Delicious Careers through Science (2007)
- Who’s the Next (Vol. 1-4, 2011).
International Symposia

- Korea-Great Britain Women Scientist Forum (2006~2009)
- EU-Korea Joint Conferences (2008~)
- USA-Korea Joint Conferences (2010~)
- Canada-Korea Joint Conferences (2010)
- Asia Women Eco-science Forum (2011~)
Expanding KOFWST’s scope to Serve Public through Mission-Oriented Programs

Convergence:
Converge the competencies of prominent women in diverse expertise and bridge the gap between ‘two cultures’

Communication:
Listen deeply to stakeholders, lay persons, policy makers, and experts in other fields to help them understand one another

Scientific Diplomacy:
Facilitate dispute resolution and consensus building in a reasonable and efficient way
Nuclear Communication Forum

- Analyze differences in the public's perception of nuclear energy safety
- Recommend ways to overcome differences in perception between the general public and experts
- Propose ways to educate the public and to train specialists to increase public acceptance of nuclear energy
- Propose measures to strengthen governance for nuclear power plant safety management
Cultural Forum for a Digital Society

- Conduct a survey on public awareness of and demand for sound internet use

- Hold forums for focus groups, e.g. students, parents, teachers, youth activists, etc.

- Hold Parents’ Workshops on protecting their children from internet addiction

- Hold an International Issue Forum on Youth Internet Addiction
Welfare Technology Forum for an Ageing Society

- Examine the current status of research and development on an ageing society
- Conduct an interdisciplinary study on constructing social infrastructure to implement new technology for an ageing society
- Develop policies to benefit an ageing society that converge life science, medicine, pharmacology, nutrition, information technology, nanotechnology, material science, etc.
Why KOFWST?

- Diverse Expertise, from physics to consumer science

- Experiences through ‘Women Leaders Forum’, to learn issues beyond our specialties and communicate with people in other fields.

- Sense of Balance, as primary caregivers of children, decision-makers in household consumption, and experiences as a minority

- Opportunities
  - to serve society and to foster leadership
  - to practice our expertise in solving complex problems
THANK YOU FOR YOUR ATTENTION!