

International Collaborations as a Strategy for Strengthening Leadership Roles of Women:

Experience from UNESCO and Academia

Gretchen Kalonji



Our key strategic question

- The practice of international science and engineering increasingly relies on large-scale international and interdisciplinary collaboration;
- This changing practice of science calls for new highly nuanced leadership roles, aspects of which map well onto differential strengths and interests of women.

Key Question: Can we better structure our international research and educational collaborations to enhance participation and professional development of women and girls, while simultaneously strengthening the contributions of our research in service to society?

Women in STEM; Women in global programs

- Almost everywhere, women are under-represented in science and engineering disciplines;
- Women are usually over-represented in “study abroad” programs, in international and language studies, etc., and show strong interest in science in service to social needs;
- Programs which **integrate** interdisciplinary, multinational projects into science and engineering curriculum in our research universities provide a powerful approach;
- Some experience from academia and UNESCO – some ideas for the future.

Design features of new integrated approaches

- Research projects chosen are of high level strategic importance to participating regions;
- Map onto institutional research priorities and strengths;
- Intrinsically require, or significantly benefit from, collaborations across national boundaries;
- Have the prospect of being **integrated into curricular structures**, from freshman to doctoral levels, and which effect large numbers of students, rather than the fortunate few;
- Invoke deep partnerships with other allies, including industry, civil society, state and local government, international organizations;
- Can be incorporated into individual **project-based** courses (offered at distributed campuses) to full-blown collaborative degree programs, incorporating **reciprocal** exchanges, language and cultural studies, in addition to research.

Innovations in collaborative research through in a jointly taught course



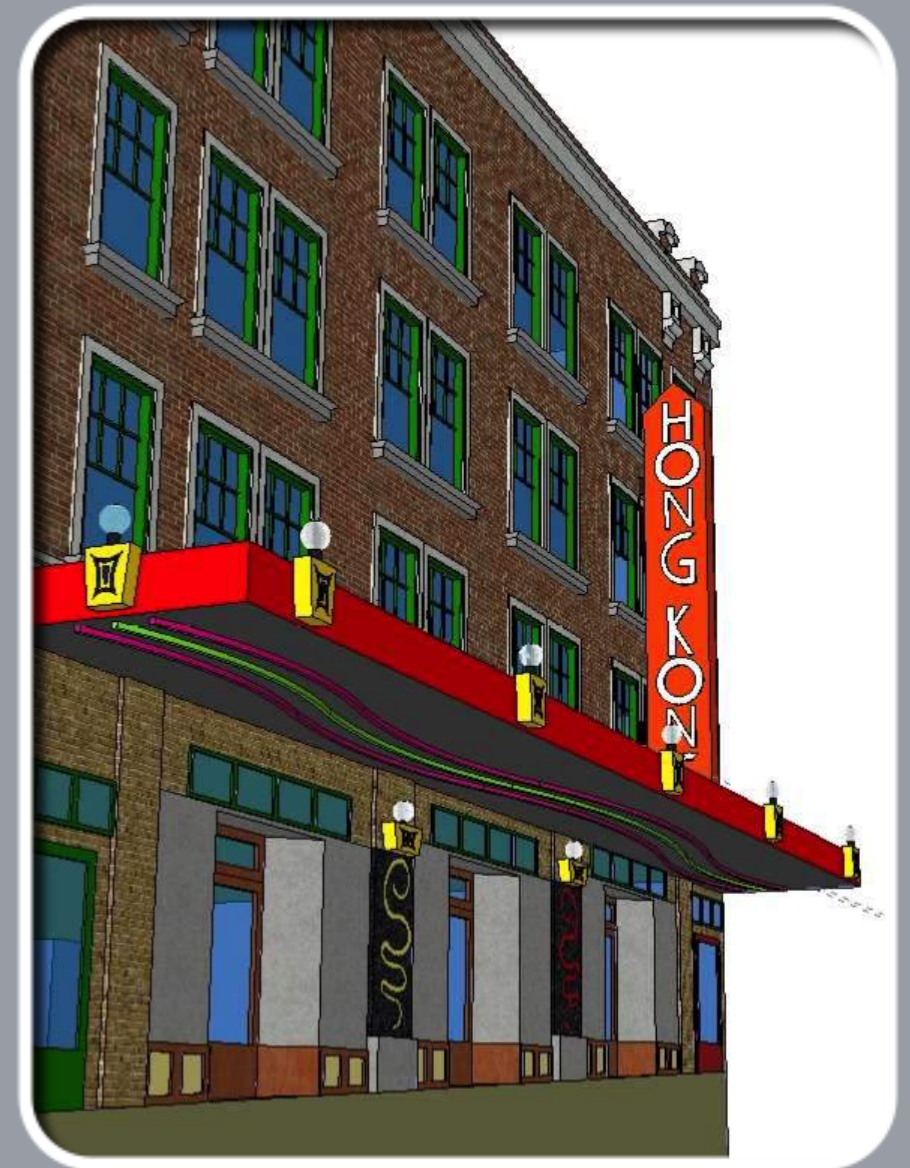
The Tohoku University-University of Washington collaboration on **first year engineering design**.

Focus on student creativity and entrepreneurship.

Incorporates on both sides understanding of culture, language, and design.

Other Projects in the “Bite-Sized” UW-Tohoku Mode

- UW-University of Tokyo (international contract law)
- UW-University of Port Elizabeth, S Africa
(marine affairs)
- UW-Tsinghua University, Beijing
(art and graphic design)
- UW-University of Asmara, Eritrea
(the Biography Project)
- UW-San Andrés University, Argentina
(the Global Citizen Project)
- UW-Chiba University, Japan (urban design)
- UW-University of Asmara (social work)



Example: a full four-year collaborative
research-based curriculum

The UW-Sichuan University
Joint Program on

***Challenges to the Environment
in the US Pacific Northwest and
Southwest China***



UW-Sichuan Program Elements

Early and extensive undergraduate research experience

Learning through working in multinational teams on common problems

In-depth study of language and culture

A year-long, reciprocal exchange, focusing on research

Senior thesis/design project

Was nucleus of subsequent collaboration on doctoral education

Strong record of attracting women students





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Science at UNESCO: Meta-goals

- Mobilize collaboration on on scientific topics that **require** large-scale multinational cooperation, e.g. oceans, freshwater, biodiversity, etc.
- Assist member states in building **capacity** to meet their own goals for **strengthening STI ecosystems in service to society**
- Focus on areas where we can **realize** the broader goal of “science for peace”, e.g. effort in transboundary aquifers.

Overarching focus on gender equality in all of the work



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Sciences at UNESCO

- Strong existing programs, e.g. in ocean and fresh water sciences (IOC and IHP); ecological sciences (MAB); geological sciences (IGSP); basic sciences (IBSP); science policy; indigenous knowledge
- An incredible network of UNESCO-related institutions, including the International Center for Theoretical Physics (ICTP), the Academy of Sciences for the Developing World (TWAS) (both in Trieste), the UNESCO-IHE, in Delft, and 30 “category 2” centers around the world.
- Very competent, energetic and creative field offices - the main science bureaus are in Cairo, Jakarta, Montevideo, Nairobi and Venice, but we also have science officers in 53 countries
- Powerful platform of World Heritage sites, Biosphere Reserves, Geoparks as “living labs for sustainable development”
- 300+ UNESCO Chairs around the world with science research foci

Example of gender efforts in UNESCO centers

- ISTIC, the International Science, Technology and Innovation Center for South-South Cooperation, in Malaysia, has as one of its core goals the promotion of women in leadership roles in STI.

Workshop on “Harnessing Women’s Talents in Science, Technology and Innovation”, Kuala Lumpur, May, 2015

In collaboration with NAM Institute for the Empowerment of Women, Malaysia

Participants from more than 35 countries

www.istic-unesco.org



Gender issues and the UNESCO Chairs

- Creation of the “Global Network of UNESCO Chairs on Gender”, a collaboration between UNESCO and the UNESCO Chair on Women in Science and Technology in Latin America, under Dr. Gloria Bonder.
- The Global Network brings together 12 UNESCO Chairs developing gender research, training and advocacy in different fields around the world. Universities, research centers, NGOs, donors and cooperation agencies, regional and international organizations working on gender equality are also invited to join this Network.
- See: www.catunescomujer.org/globalnetwork/

Gender InSITE Program

- Gender InSITE, gender in science, innovation, technology and engineering, is a collaborative initiative aimed at increasing access of women along with men to education and careers in SITE and to support use of SITE to improve women's lives.
- Founding members included, the Gender Advisory Board of the UN Commission on Science and Technology for Development, TWAS (The World Academy of Sciences for the advancement of science in developing countries), and the Organization for Women in Science for the Developing World (OWSD), under UNESCO. Effort supported by SIDA.
- Three regional focal points: two in sub-Saharan African and one for Latin America and the Caribbean.

GenderinSITE Program, cont.

Activities to date include:

- Development of a website focused on Gender and SITE issues
- A workshop with SciDev.net (reporting on gender and STI)
- A workshop with SPRU (gender dimension of STI policy)
- Participation in the Gender Summit in South Africa (African regional focal points)

- A separate but coordinated activity supported by the Elsevier Foundation provides comparative national assessments on gender and STI (see www.wisat.org)

For more info see: <http://genderinsite.net>

UNESCO-L'Oréal “For Women in Science”

- The L'Oréal-UNESCO For Women in Science Awards, given each year to five outstanding women scientists – one per continent – for the contributions of their research, the strength of their commitments and their impact on society.
- The UNESCO-L'Oréal international Fellowships. Granted annually since 2000 to 15 promising young women scientists, doctorate or post-doctorate, they encourage international scientific cooperation and the development of cross-cultural networks.
- The L'Oréal National Fellowships with the support of the UNESCO National Commissions, which anchor the For Women in Science programmes in countries around the world, while respecting their particularities and specific needs.

Incorporation of gender in all programs: example of water efforts at UNESCO IHP

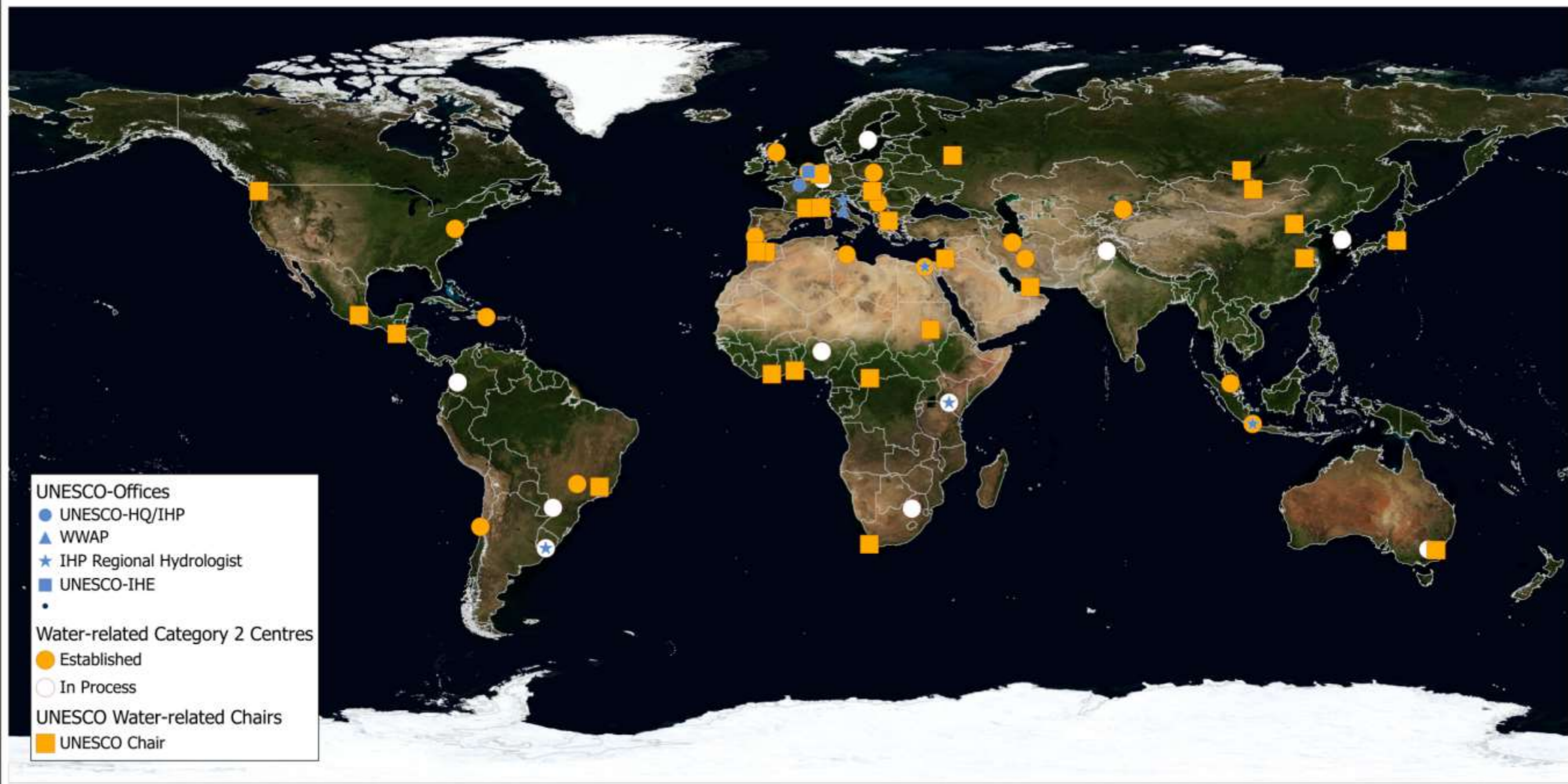
- IHP: National committees (169) and focal points; Council and its Bureau
- UNESCO staff: HQ-Paris (HYD, IHP Secretariat and other sector's areas), IHP Regional hydrologists, Cluster and National officers implementing IHP
- Cat 1 Institute: UNESCO-IHE Institute for Water Education
- 28 Cat 2 water-related centres under the auspices of UNESCO
- 30 UNESCO Chairs and UNITWIN networks
- WWAP: the World Water Assessment Program

In collaboration with IHP Partners (Decision Makers, UN, Professionals and Scientists, Associations, IGOs, NGOs, etc.)



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Prospects for future collaborations

We need a comprehensive, multinational study to address:

- What are the prospects of international collaborations for attracting women to science and engineering?
- What are the impacts on career trajectories of female professionals from participating in/leading international collaborations?

Build on alliances and networks:

To integrate multinational research projects into the curriculum, both at undergraduate and graduate levels with the goal of enhancing the diversity of the STI workforce, while simultaneously dramatically strengthening the impact of our research.