

Promising Practices for Improving the Inclusion of Women in Science, Engineering and Medicine: Lessons from Kuwait and the United States

Session 1: Gender Stereotypes and Gendered Family Roles

Session Chairs: Hala AlEssa, Kuwait University; Maria Charles, University of California Santa Barbara

Taken-for-granted cultural belief systems and the social structures and practices that grow out of these belief systems have important negative effects on women's aspirations and opportunities to become STEM professionals and to advance in STEM careers – both in affluent Western and Arab societies. Important cultural influences include: (1) divisions of family labor that are built around ideologies of intensive motherhood and primary domestic care-taking, and male breadwinning, (2) stereotypes about women's innately non-technical and people-oriented dispositions, and (3) stereotypes about the intrinsically masculine and asocial nature of technical work. This session will explore the content of these ideologies and stereotypes, how they may operate to reduce women's presence in STEM occupations, and how they vary across countries, and across demographic groups defined by race, class, and immigration status.

Culture, Gender Norms and Barriers to Women's Access to Paid Employment in the Arab World

Rana Hendy, American University of Cairo, Cairo

According to the opening statement of the 2004 International Labor Organization's report on global trends in women's employment: "One of the most striking phenomena of recent times has been the increasing proportion of women in the labor force, enabling women in many regions to use their potential in the labor market and to achieve economic independence". In the Arab region, despite the strike increase in women's educational attainment, the region continues to have the lowest rates of women labor force participation in the world "the MENA gender paradox".

At a time when policy makers in different parts of the world have become increasingly interested in promoting women's engagement with the labor market, there are persisting barriers that pose a challenge in the Arab region: Cultural norms, unequal division of work within the family and, family-unfriendly labor laws among other barriers. As stated by Hendy; 2015, a marriage mismatch exists, whereby marital conditions and responsibilities do not respond to labor market needs and vice versa.

My talk will be organized as follows:

- Why and how is women's labor market participation crucial for economic Development?
- Marriage: A turning point in Arab women's lives
- Time allocation and division of work with the family
- Policy recommendations

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Rana Hendy is currently an Assistant Professor of Economics and Public Policy at the School of Global Affairs and Public Policy (GAPP) at the American University in Cairo (AUC). Hendy is also a research associate at the Economic Research Forum in Cairo where she served as the thematic director for Equity and Inequality as well as for Gender-related projects between 2012 and 2014.

Hendy received her doctorate in labor and development economics from the Paris School of Economics in 2011 and a master degree in labor and demographic economics from the same school. From 2006 to 2011, Hendy received a full fellowship from the Research Center in Economics and Statistics (CREST) in France.

Hendy researches labor and demographic policies in developing countries with a focus on the Middle East and North Africa. Her current work focuses on gender inequality, inequality of opportunity in education, labor markets, family formation and international migration, as well as the impact of trade and fiscal policies on inequality and poverty.

Between 2016 and 2019, Hendy was an Assistant Professor of Economics at the School of Public Administration and Development Economics at the Doha Institute for Graduate Studies. Before that, Hendy served for three academic years at the College of Business and Economics at Qatar University. She worked as an Economist for the Economic Research Forum from 2011 to 2014. Hendy has served as a consultant to several international organizations as the World Bank Group, the International Labor Organization and the International Development Research Center and the United Nations Economic and Social Commission among others.

She has a number of publications in peer-reviewed journals such as Applied Economics, International Journal of Educational Development, Demographic Research, Journal of North African Studies, Middle East Development Journal, and, International Trade Journal. She also contributed to four Oxford University Press volumes on labor markets in the Middle East and North Africa region.

Demystifying Support Systems of STEM Women in Kuwait

Fawzeyah Al-Awadhi, Kuwait University, Kuwait

This presentation will discuss the underlying trajectories of direct and indirect impact of family's ushering their daughters into STEM major/career. It has identified (to this moment) 1. the positive impact of a good support network within the family; 2. The normalization of the STEM experience due to the presence of a family member who is in a STEM career (i.e. seeking these majors and working in them becomes the norm in this family due to several factors one of which is knowing the ways in); 3. Peer clicks reinforce family support network in filtering obstacles and overriding them.

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Fawzeyah Ibrahim Al-Awadhi, PhD, received her BA in English education with a focus on applied linguistics from Kuwait University (2000), MA from the university of Cincinnati, Ohio with a focus on Peace Philosophy and Conflict Resolution (2008), and PhD from the University of Cincinnati, Ohio (2014) focusing on Ethics of Care. She is a faculty member in the Foundations of Education Department in the College of Education and a program designer for the Teaching Excellence Team at Kuwait University, as well as a qualitative researcher, and an oral historian. Currently, she is interested in the ideology of gender stratification in STEM fields and narratives on identity formation. She is a happy mother of eight and is currently exploring the best way to be effective and functional in busy days.

Enabling Women in STEM Careers: KFAS Approach

Layla Al-Musawi, Kuwait Foundation for the Advancement of Sciences, Kuwait

In Kuwait, females consist more than 70 per cent of higher education students in the various STEM fields. This is reflected in the fact that a high percentage of women are engaged in STEM professions afterwards. However, they are still struggling in climbing up the career ladder, and underrepresented in leadership positions within STEM education, research, and industry professions. The ingrained traditional practices of closed socio-political circles dwarf their chances at accessing such opportunities.

Since the start of modern Kuwait, women in Kuwait have been pushing forward and are self-empowered. Nonetheless, they need to be enabled and visible. In its new strategy 2017-2021, the Kuwait Foundation for the Advancement of Sciences (KFAS) is providing platforms to showcase women in STEM, telling their stories side by side with their male colleagues. These efforts to increase their visibility aim at shaking off the stereotypes by acknowledging women's success as the norm.

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Layla Al-Musawi, PhD, is the Program Manager for Publicizing and Dissemination of Science and Technology, within the Scientific Culture Directorate at the Kuwait Foundation for the Advancement of Sciences. Dr. Al-Musawi has also served as the Monitoring and Evaluation Advisor to the Director General of the International Center for Biosaline Agriculture (ICBA), and was the team leader of the Kuwait Food Security and Investment Strategy, developed by ICBA, for the Kuwait Investment Authority (KIA). Prior to that, she served as the Scientific Consultant and Program Manager to the Regional Organization to Protect the Marine Environment (ROPME) in Kuwait. Dr Al-Musawi was also extensively involved in the Kuwait Environmental Rehabilitation Program (KERP) to remediate war related damages, funded by the United Nation Compensation Commission (UNCC). She was the lead author to realign Kuwait's National Strategy and Action Plan (NAP) with the 10-Year Strategy of the United Nation Convention to Combat Desertification.

How Gendered Family Roles Generate Career Inequalities in STEM and What Can Be Done About It

Kimberlee Shauman, University of California, Davis, United States

Family roles, which are culturally defined and divided by gender norms, generate and reinforce gender inequality in all societies. Their influence on gender disparities in STEM education and employment is powerful and multifaceted, operating through both expectation and tangible experience, at the micro- and macro-levels. In this presentation, I use the life course perspective to summarize the literature on how gendered family roles affect aspirations, access, and achievement across successive stages of STEM education, career entry and achievement. The review draws from multiple streams of research but will focus particularly on identifying how family role expectations and the division of family labor inform institutional structures and practices in ways that tend to advantage men and penalize women. Mapping these processes illustrates the magnitude of their cumulative impact but it also identifies strategic targets for institutional change. I conclude with a survey of research-informed organizational interventions that can reduce the impact of family roles and generate greater gender equity in STEM careers.

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Kimberlee Shauman is a Professor of Sociology at the University of California, Davis. Her research focuses on social stratification in education and employment, family, demography, and quantitative methodology. Dr. Shauman is principal investigator of the Evaluating Equity in Faculty Recruitment study of how gender and race/ethnicity affect academic labor markets. She has studied gender differences in educational and occupational trajectories, the career causes and consequences of residential mobility among dual-earner couples, trends in post-retirement employment, and the demographic impact of persistent racial differences in mortality. Dr. Shauman is coauthor of *Women in Science: Career Processes and Outcomes* (Harvard University Press, 2006), a comprehensive analysis of the underrepresentation of women in science from middle school to the labor market. She was co-PI of an NSF ADVANCE Institutional Transformation grant and founding director of the UC Davis ADVANCE Program. Her research has been supported by the National Science Foundation, the National Academy of Education, the Spencer Foundation, and private organizations. Dr. Shauman received her doctorate in sociology, population demography and ecology, from the University of Michigan.

Asymmetrically Changing Gender Role Stereotypes Limit Women's Career Opportunities

Alyssa Croft, University of Arizona, United States

Gender equality is often perceived as a “women’s problem.” Most gender equality movements have aimed to allow women access to the rights, privileges, and roles automatically afforded to men, and progress has been made during the past century. For example, since WWII, women have played an increasingly important role in the workforce, slowly earning their place among the ranks of men, who have traditionally been the primary breadwinners for their families. This major shift toward egalitarianism, however, only represents one piece of a much larger gender-equality puzzle; there is still a distinct asymmetry in the extent to which gender roles are changing for men as compared to women. Specifically, whereas women’s traditional roles of caregiving and domestic responsibilities have been expanding to include paid work outside the home, men’s roles have not been expanding in a complementary fashion. In this talk, I will present research exploring how this asymmetry in changing gender roles might constrain broader efforts to enhance equality and limit opportunities for women (e.g., in STEM).

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Alyssa Croft is an Assistant Professor in the Department of Psychology at the University of Arizona. She received her PhD in Social/Personality Psychology from the University of British Columbia in Canada in 2016. Her research interests span a range of psychological topics relating to social roles, identity, and group membership (e.g., gender, race, political affiliation). She is particularly drawn to questions exploring how, when, and why people are constrained by invisible psychological barriers, such as stereotypes and societal expectations. In 2018, Dr. Croft was awarded a prestigious British Academy Visiting Fellowship, which enabled her to spend nearly five months collaborating on research with colleagues at the University of Essex. Her research has been disseminated internationally to the broader public, through popular news outlets such as New York Times, Wall Street Journal, the Economist, etc. She currently serves as a member of the University of Arizona’s Commission on the Status of Women, where she contributes to the Family and Self-Care Workgroup with the goal of overcoming impediments to the full participation of women and other under-represented groups in university life. She also serves as a board member on the Science and Culture Advisory Committee for a local non-profit organization called Ben’s Bells, whose mission is “to teach individuals and communities about the positive impacts of intentional kindness and to inspire people to practice kindness as a way of life.”

Observed Microaggressions Predict Lower Engineering Identification Among Women in Engineering Group Project Teams

Denise Sekaquaptewa, University of Michigan, United States

Women's underrepresentation in engineering may be due in part to women's identification with engineering being threatened by gender stereotypes disparaging their competence. In our studies we examined behavioral manifestations of these gender stereotypes – microaggressions – as a contributor to diminished engineering identification among female engineering students. We assessed microaggressions as self-reported, and as assessed by independent observers of mixed-gender undergraduate engineering group project teams. Video recordings of the teams' interactions were scored by two independent raters trained to use a behavioral coding rubric. The rubric assessed observed microaggressions (behaviors reflecting gender stereotyping) as well as observed disrespectful behavior (reflecting negative but non-gender stereotypic behavior), to test whether any type of negative treatment diminishes women's outcomes (i.e., engineering identification), or whether microaggressions play a specific role. Results showed that observed microaggressions predicted lower engineering identification among women, not men, on the engineering teams. This association emerged only for observed microaggressions, not for self-reported microaggressions or general (non-gender stereotypic) disrespect.

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Dr. Denise Sekaquaptewa is the University Diversity and Social Transformation Professor of Psychology at the University of Michigan, Ann Arbor, USA. Her research program in experimental social psychology focuses on stereotyping, implicit bias, and the experiences of women and underrepresented minorities in science and engineering. Her research program has been supported by the National Science Foundation, and the National Center for Institutional Diversity. Dr. Sekaquaptewa served as associate editor for the American Psychological Association journals *Personality and Social Psychology Bulletin*, and *Cultural Diversity and Ethnic Minority Psychology*. She is an elected Member-at-Large for Science Programming at the Society for Personality and Social Psychology, and serves on the Committee on Opportunities in Science at the American Association for the Advancement of Science. She received the Harold R. Johnson Diversity Service Award (2015), and the Sarah Goddard Power Award (2012), from the University of Michigan for her work on diversity-related issues.