



Mujeres participando en STEM / Engaging Women in STEM

Presenters: Dra. Renetta Tull and Dra. Maria Larrondo-Petrie; WEEF, Cartagena, Colombia, September 2013

Conversatorio: Mujeres participando en STEM / Discussion: Engaging women in STEM at the 2013 World Engineering Education Forum (WEEF) in Cartagena, Colombia, was designed to engage women and discuss initiatives for women in Science, Technology, Engineering, and Mathematics (STEM). Using outcomes from the August 2013 LACCEI session on "Women in STEM" in Cancun, Mexico as a platform for the discussion, we addressed men and women from universities, agencies, and industry at WEEF. "Conversatorio: Mujeres participando en STEM" continued the discussion from LACCEI 2013 which connects to the Women in Engineering Initiative started in 2010 by LACCEI and the Organization of American States (OAS) Engineering for the Americas (EftA), and supports the OAS Ministers of Science and Technology's [Vision 20/25 in Science, Technology, and Innovation for the Americas: Hemispheric Cooperation for Competitiveness and Prosperity in a Knowledge Economy and Plan of Action of Panama \(Group 2\)](#). This Plan of Action proposes to increase the number of female and male graduates in science, technology, engineering and technical education. The Vision 20/25 and Action Plan target the goal for 2025 to increase by at least 50% the number of female and male graduates in STEM.

The "Conversatorio" at WEEF 2013 included excerpts from presentations from the "Women in STEM Forum" at LACCEI 2013. Contributions included key statistics on women in engineering from Central and South America: *Martha Beltrán-Martínez* (Organization of American States); and overviews of best practices from programs that advance women from: *Beatriz Zayas* (Universidad Metropolitana (UMET), National Science Foundation's ADVANCE Hispanic Women in STEM Project, Puerto Rico, with video from UMET Chancellor Carlos Padín), *Delia Valles-Rosales* (Department of Industrial Engineering, LSAMP/CCLI/TUES/STEP programs, New Mexico State University, USA), *Autumn Reed* (University of Maryland Baltimore County, UMBC ADVANCE program and Office of the Provost, USA), and *Claudia Patricia Mendieta Cardona* (Facultad Ciencias Económicas, Universidad de San Buenaventura, Cali, Colombia). Assistance was provided by *Frances Carter-Johnson* (ADVANCE Hispanic Women in STEM.)

During LACCEI 2013, participants in the Women in STEM Forum were asked to provide information for the "Conversatorio" at WEEF in Cartagena. Participants were asked about their knowledge and interest in participating in more initiatives for women, and biggest needs. Results revealed that women wanted male champions, mentors and opportunities to mentor, research collaborations, recognition, and visibility. Male and female representatives from the following institutions at LACCEI 2013 contributed to the results: Purdue University and Purdue North Central University (USA), Universidad Tecnológica (Panamá), Universidad del Bío-Bío-Concepción (Chile), University of Bristol (United Kingdom), Pontificia Universidad Católica del Perú (Perú), University of Texas El Paso (USA), Escuela Superior Politécnica del Litoral – ESPOL (Ecuador), Universidade de São Paulo (Brazil), and Universidad Santo Tomás (Colombia). The WEEF presentation was also informed by 2013 LACCEI meeting input from Bevlee Watford (Associate Dean and Professor of Engineering Education, Virginia Tech University), who serves as Vice President of External Affairs for the American Society of Engineering Education (ASEE). Our presentation also included an introduction to projects from the U.S., such as the NSF PROMISE AGEP program, and the Quality of Life Technology Center (QoLT), and Engineering Research Center, from the University of Pittsburgh and Carnegie Mellon University that engages women in STEM at all levels.

Following the formal presentation of the results from Mexico's LACCEI 2013, the *Conversatorio* at WEEF in Cartagena had input from faculty and students from universities in Colombia and Ecuador, and members of the International Federation of Engineering Education Societies (IFEES), including LACCEI and the Korean Society of Engineering Education. There were high levels of engagement from several emerging women engineers who are pursuing their undergraduate studies. Of particular note were young women from universities in Colombia who voiced the sentiments in the room: ***Women want to be equally recognized for their engineering talents and abilities. They also want efforts that will encourage more women and girls to enter and stay in engineering fields. Overall, there is a call to facilitate women's pursuit of excellence in engineering without barriers, and without detracting language or actions that would discourage participation.***