

Engineering Innovation in Women's Health

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Engineering is an integral part of healthcare innovation, from advances in medical imaging technology to inventing new methods to sequence entire genomes. Engineers have long teamed with physicians and scientists to build an ecosystem of precision medicine from diagnosis to therapy to cure. Yet, attention to women's health has traditionally lagged, where the most basic characteristics of female anatomy and physiologic processes remain understudied and misunderstood. Women's health is a broad category encompassing reproduction, fertility, maternal health, normal and abnormal pregnancy, and the sequelae associated with birthing injuries. Women's health also includes sex and gender differences in many diseases and pathologies, such as: cancer, cardiac disease, osteoporosis, mental health, autoimmune disorders, substance abuse, obesity, and others. This list is not exhaustive with new scientific frontiers developing based on the evolving discourse of medicine for all. Engineering innovations directed towards women's health ultimately improves the quality of life for everyone.

In this session we feature female engineers, academics and an entrepreneur who focus on women's health including cervical cancer, infertility, preterm birth, birthing injury, and everyday reproductive health. The women featured in this session span engineering disciplines and numerous early career stages. Mercy Asiedu is a post-doctoral researcher who is empowering women in Africa to screen for cervical cancer using a low-cost, speculum-free camera device. Kristin Miller has spent the last 5 years dedicating her lab to the biomechanics of the reproductive tract to understand the causes of preterm birth and characterize birthing related injuries. Ariella Shikanova's lab has spent the last 8 years leading tissue engineering of artificial ovaries to give families the hope of growing their family. For the last 4 years Ridhi Tariyal has led NextGen Jane, which is a women's health start-up that uses data-driven resources to empower women to track their own health using their menstrual blood.