

Time to recognise the influence of gender on research outcomes



The

importance of gender in research has been underestimated

A new report explains how to harness the power of gender analysis for discovery and innovation

The League of European Research Universities, LERU, launches today, 16th September 2015, a new [report](#) showing how Gendered Research and Innovation (GRI) can foster new knowledge and solutions to global challenges. And such challenges are not minor. Indeed, research failing to account for sex and gender specificities can put lives at risk and be costly. For example, between 1997 and 2000, ten drugs were [withdrawn](#) from the US market because of life-threatening health effects. Eight of these posed greater health risks for women than for men. Not only does developing a drug in the current market cost billions—but when drugs failed, they cause human suffering and death.

Doing research right has the potential to [save lives](#) and money. This is the goal of [Gendered Innovations](#) in Science, Health & Medicine, Engineering, and Environment. This Stanford University initiative brought together seventy scientists, engineers, and gender experts from across the US, Europe, Canada, and Asia. Its goal is to explore how gender analysis can open doors to discovery. International collaborations supported by the European Commission and the US National Science Foundation developed state-of-the-art methods for sex and gender research.

Why gender matters

Once you start looking, you find that understanding gender can improve almost everything. Ever use Sycstan or [Google Translate](#)? What if you are a woman and the article is about you? The machine defaults to “he”: for instance, Londa Schiebinger, “he” wrote, “he” thought, occasionally, “it” said. With one algorithm, these translation programs wiped out 40 years of revolution in language and progress toward gender equality. And they did not mean to do that. This is unconscious gender bias.

The fix? A couple of years ago the Gendered Innovations project held a workshop where we worked with natural language processing experts. They listened for about 20 minutes, they got it, and they said, “we can fix that!”

In medicine, [osteoporosis](#) has been conceptualised primarily as a women’s disease. Yet, after a certain age men account for nearly a third of osteoporosis-related hip fractures. And when men break their hips, they tend to die. We don’t know why. Gendered Innovations in osteoporosis research has developed new diagnostics for men, and the search for better treatments is underway.

In civil engineering, understanding physiological differences between men and women can help reset outdated standards. A recent [article](#) published in [Nature Climate Change](#) revealed that the thermal comfort standards for residential buildings and offices set in the 1960s were based on the resting metabolic rate of an average male. Or more precisely on a European male, 70kg, aged 40. These standards, used world-wide, may overestimate female metabolic rates by up to 35%.

Researchers in the Netherlands have now developed new metabolic metrics for composite thermal insulation. They hypothesize that an accurate representation of thermal demand for all occupants--men, women, seniors, etc.--may lead to energy savings of 30% of total carbon dioxide emissions from residential buildings and offices.

Gendered Innovations add value to research and engineering by ensuring excellence and sustainability in outcomes. Gendered Innovations stimulate gender-responsible science and technology, thereby enhancing the quality of life for both women and men worldwide.

Funding incentive

Funding agencies are tackling the issue by tying funding to results. In December 2013, the European Commission (EC) designated [137 subfields](#) where data showed that gender analysis could benefit research—these range from computer hardware and architecture to nanotechnology, oceanography, geosciences, organic chemistry, aeronautics, space medicine, biodiversity, ecology, biophysics, among other. The EC Gender Advisory Group has published an [advisory paper](#), in March 2015, on how to prepare grants that integrate the gender dimension into research. The EC has taken the global lead in policy in this area; expert execution will be key to holding onto that lead.

In June 2015, the US National Institutes of Health rolled out new [guidelines](#) for sex inclusion in research. In August 2015, the Canadian Institutes for Health Research rolled out the [first](#) of three trainings for Sex and Gender in Biomedical Research. These granting agencies are well on the road to transforming medicine by increasing the pace of new discoveries, diminishing errors of extrapolation between sexes, and mitigating adverse events in the drug development pipeline.

Now, there is much work to be done!

Researchers need to learn sophisticated methods of sex and gender analysis. Universities need to incorporate these methods into their curricula. [Granting agencies](#) need to ask applicants to explain how sex and gender analysis is relevant their proposed research. [Editorial boards](#) of peer-reviewed journals need to require sophisticated sex and gender analysis when selecting papers for publication. Industry needs to incorporate the smartest aspects of gender in innovative products, processes, services, and infrastructures.

Eyes have now been opened—and we cannot return to a world that ignores gender.

Innovation is what makes the world tick. Gendered innovations spark creativity by offering new perspectives, posing new questions, and opening new areas to research. Can we afford to ignore such opportunities?

[Londa Schiebinger](#)

Londa is Hinds Professor of History of Science at Stanford University. Director of the European Union/United States Gendered Innovations in Science, Health & Medicine, Engineering, and Environment project.

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