

GENDER AND RADIATION IMPACT Project

TO PROTECT OUR GRANDCHILDREN

The Story of the Gender and Radiation Impact Project
by Mary Olson May 2017

After I gave a public talk on radioactive waste in 2009, a woman raised her hand and posed a simple question: is radiation more harmful to women compared to men? I stopped in my tracks. I was nearly 20 years into my career as an educator and policy analyst with [Nuclear Information and Resource Service](#), and I had been mentored by such 20th Century radiation research icons as Drs. Judith Johnsrud, Alice Stewart, Rosalie Bertell, and even Dr. Helen Caldicott. Yet, none of these brilliant women with advanced degrees and years of commitment to human health had taught me anything about gender as a factor in radiation harm.

Interestingly, this question made me deeply uncomfortable, to the point that I forgot it, until the spring of 2011 when three reactors At Fukushima Daiichi in Japan blew up. Hundreds of thousands of men, women and children forced from their homes brought this fundamental question about gender and radiation back, yet now the question was 1000 times more uncomfortable. In the wake of the disaster, Michael Mariotte, then Executive Director of NIRS and my boss, asked me to reach out to people in Japan. I said yes, but first, I had to get a question answered.

Because of her keen insight and decades of experience in the field, I contacted my mentor and advisor Dr. Rosalie Bertell. I quickly learned that while the question was simple, the answer wasn't: Rosalie said she honestly did not know. She told me that in 2006, the National Academy of Science had published [The Biological Effects of Ionizing Radiation VII Phase 2 \(BEIR VII\)](#) report which contained 60 years of data on cancer incidence and cancer death among the more than 150,000 A-Bomb survivors, or *Hibakusha*, from Hiroshima and Nagasaki Japan. Rosalie said that if there were a difference between males and females that formed a clear pattern, I could find it in those numbers. While Rosalie herself was a mathematician, she was ill, and retired, so it would be up to me.

I protested, as I had no advanced training in math! Rosalie said that fact might *help* since I would keep it simple, offering this advice: "Mary, sharpen your pencils, get a good eraser and go see what you can find." That was the summer of 2011, just a few months after the earthquake and tsunami that set the Japanese reactor disaster in motion. By October, I finished my first original radiation research paper and titled it [Atomic Radiation is More Harmful to Women](#). The findings were clear: when exposure levels and time were constant, for every two men who died of cancer, three women died.

While the numbers were all there, it took me a long time to find this pattern. I had difficulty focusing on the data in BEIR VII when I realized each set of numbers represented *people* - people who endured the most horrific act of violence in human history. Nuclear is an indiscriminate weapon and hundreds of thousands of men, women, boys and girls were vaporized immediately. Yet incredibly, more than 150,000 people survived the bombs were still alive five years later. That is when teams of US and Japanese researchers showed up to study them. This study provides the data that led me to my findings, but incredibly, survivors report that no medical aid was provided by researchers. In personal communications, I heard that scientists thought aid would skew the results of their study, so none was offered.

I still weep when I read the BEIR VII numbers. When I use this data, I become complicit with the horrors of the A-bomb and the inhumanity of the research that followed. That is why I apologize, even only as one woman, every time I present the findings. And I continue to use the data because this is the only source of data that includes people of all ages, both genders, is large enough

for population analysis and has a track over most of the full human life-span. To date, no other published set of numbers allows us to see big patterns across the human life-span.

My paper was published by NIRS the week before an international Symposium on radiation hosted by the International Committee for Radiological Protection (ICRP) was held in Washington DC. The ICRP coming to town caused many federal radiation-related bodies to schedule meetings in the same date-frame. Each of these federal meetings included short public comment periods. In one week, I shared a thumbnail on gender and radiation, and handed out copies of my paper at the Department of Energy's Blue Ribbon Commission on America's Nuclear Future, the Nuclear Regulatory Commission radiation study panel of the National Academy of Science, an Environmental Protection Agency public meeting on a rule-change proposal, and the ICRP Symposium itself.

To my great surprise, my comments at the ICRP Symposium were met with applause! A key point I made was that while we do not know *why* female bodies are harmed more by radiation, we do know *that* gender is a factor and we must not wait. This is the call that drives the Gender and Radiation Impact Project: we must provide greater protection now, even as we gather the resources to do more research.

In the past several years, I have expanded the circle of those interested in the connection between gender and radiation. In 2013, I presented at the Symposium on Fukushima organized by Dr. Helen Caldicott to mark the disaster's second anniversary. A year later, I was invited by Austrian Ambassador Alexander Kmentt to speak at a global conference he was organizing in Vienna on the humanitarian consequences of nuclear weapons. Turned out I was the opening speaker to a room of more than 1000 people. I began my talk discussing the medical impacts of exploding bombs over people and led into my findings on gender and radiation. The event changed my life, and I later found out it was a catalyst for how gender impact on radiation is viewed.

After the Vienna Conference, I was invited by a group of Irish, Swedes and Austrians to be the lead speaker on the Gender and Nuclear Weapons panel at the United Nations during the 2015 review of the Nuclear Nonproliferation Treaty. The room buzzed with nearly 300 people with many questions. Retired Ambassador Henrik Salander was one of the panelists, and one of his comments amazed me: *these findings and the studies behind them are of a truly revolutionary nature. They give a whole new dimension to the 70-year old problem of nuclear weapons.*

I was now clear I had an un-met obligation: to return to Japan and share my findings with people there. I was invited back less than a year later to listen to the people who have been living with both the A-bomb history and now Fukushima and to share my findings. A week of listening in and around Fukushima Prefecture was followed by an almost four week speaking tour from Okayama to Kyoto to Tokyo, and many stops along the way. I was humbled to have Hibakusha A-bomb survivors at all the big talks, and to meet with women displaced by the Fukushima disaster in nearly every community I visited.

On returning from Japan, there was no longer any doubt. The Gender and Radiation Impact Project is the work I was born to do. We have no idea *why* gender is a factor in harm from radiation exposure, but we know that it *is*. And knowing that there is greater risk calls for action. We must protect our grandchildren, particularly our granddaughters – *now*.

I see the work ahead as one of catalytic change: mobilizing people to act in a preemptive way *now*, while planting small seeds to curate research necessary to get the answers we need. It is incredible to think that a small non-profit, in partnership with top thinkers, researchers and professionals in the field, can tackle these problems, but I believe we can. As Margaret Meade said: *Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it's the only thing that ever has.*

I hope you are as ready as I am!