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Article abstract

Ursula Franklin was born in Germany in 1921 and moved to Canada in 1949 after surviving the Holocaust. She joined the University of Toronto's Department of Metallurgy and Materials Science in 1967, and became the institution's first female "university professor" in 1984. This memorial recounts her influence on the author, among the many others Ursula Franklin touched during her remarkable life and career.

In memoriam

Dr. Ursula Martius Franklin (1921–2016)

Monique Frize

Keywords: Ursula Franklin, University of Toronto, science and technology, society

Abstract: *Ursula Franklin was born in Germany in 1921 and moved to Canada in 1949 after surviving the Holocaust. She joined the University of Toronto's Department of Metallurgy and Materials Science in 1967, and became the institution's first female "university professor" in 1984. This memoriam recounts her influence on the author, among the many others Ursula Franklin touched during her remarkable life and career.*

Résumé : *Ursula Franklin est née en Allemagne en 1921, et s'est établie au Canada en 1949, après avoir survécu l'Holocauste. Elle a intégré le département des sciences de la métallurgie et des matériaux de l'Université de Toronto en 1967, et est devenue la première femme professeure de l'établissement en 1984. Cet hommage souligne son influence sur l'autrice et sur les nombreuses autres personnes qui ont été touchées par la vie et la carrière remarquables de Mme Franklin.*

IT IS AN HONOR FOR ME TO WRITE about Ursula Franklin, a woman I greatly admire, a mentor and a friend. My path crossed Ursula's several times between 1989 and 2002, while we both worked towards improving the life and work of women in science and engineering. The following tribute presents some examples of our interaction and my view of Ursula Franklin's impact on the quest for equity, justice, and harmony for women choosing these non-traditional education and career paths.

In May 1989, a press conference at the University New Brunswick (UNB) announced the creation of an academic chair with financial support from the Northern Telecom and the Natural Sciences and Engineering Research Council (NSERC). I applied for the position, was interviewed in September, shortly after completing a doctorate at Erasmus University in The Netherlands, and was selected for the position on November 8, 1989, with a starting date of December 11. The mandate of the Northern Telecom/NSERC Women in Engineering Chair was to increase the participation of women in engineering education programs and in the profession, a role which covered the entire country. One of my first priorities, after hearing of my appointment, was to attend a biomedical engineering conference, organized by the Engineering in Medicine and Biology Society (EMBS), which was held November 9-12 in Seattle (Washington); this would allow me to see the current state of research in my field and help me to develop an academic-research program.

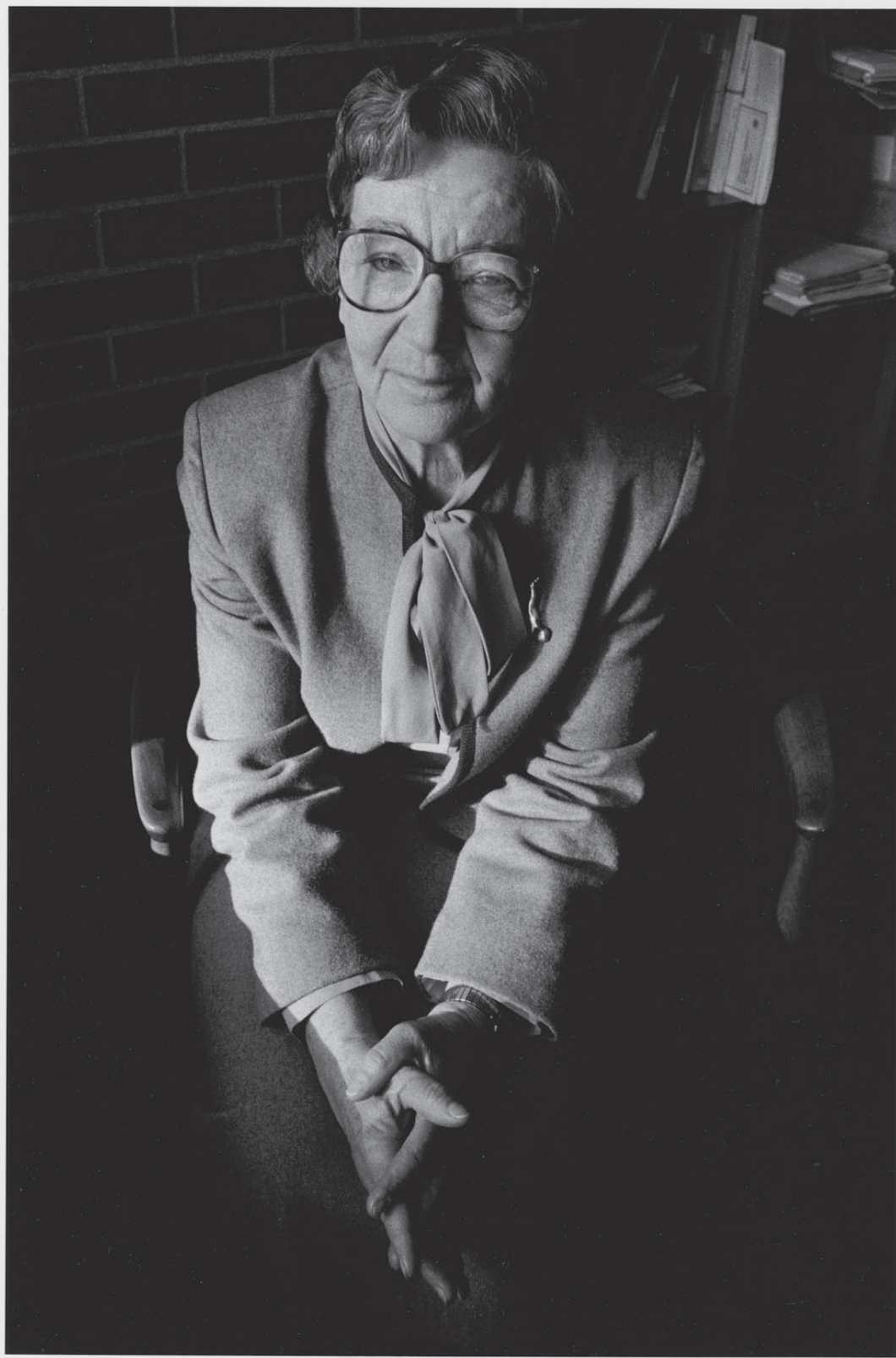


Figure 1. Ursula Franklin, 1989. Credit: Pamela Harris/Library and Archives Canada, 1991-151-NPC.

On November 9, 1989, while waiting for my flight to Seattle at Pearson Airport in Toronto, I called Dr. Franklin at the University of Toronto to discuss the new position and ask for some advice. I had heard about Ursula Franklin's excellent work on this topic and thought she could give me some insight on tackling this intimidating role. Dr. Franklin took my call even though she had never heard of me. I explained the new exciting position and role and she shared with me some very wise ideas. The main point she made during our telephone conversation was that the approach needed to be more than just numbers; that women were to be recruited for their feminine perspectives and approaches, not just to make up the number of engineers. At this time, the profession claimed that many more engineers were needed in Canada. Ursula's words added an important dimension to the need for more engineers: the need for balanced gender perspectives in engineering work and technological innovations. I thought about this during the entire trip to Seattle and on my way back home, trying to understand exactly what Ursula meant and how to make it happen. This thought was to inspire my entire work on women's issues for the next twenty years.

Ursula and I met again in Victoria in 1990. We sat together on a panel to speak about women in science and engineering, along with Peta Tancred (McGill University), and Rose Sheinin (Concordia University). Elizabeth May had organized the event on behalf of the Royal Society of Canada (RSC). I spoke about early findings of the Canadian Committee on Women in Engineering (CCWE) of which I was the chair, and Ursula gave an inspiring and original talk on the question of feminist scholarship. She argued that most fact-makers (scientists) were male; they decided what questions needed to be asked and for whom the benefits would apply. She used an analogy: boys making facts in their sandbox with their tools and letting girls in if they helped them in their fact-making. But the girls may want their own fact-making with their own sandbox and their own tools. This is a simplification of course, and Ursula's full talk can be found in her book, *The Ursula Franklin Reader: Pacifism as a Map*, published in 2006. In "The Sandbox and The Tools", she states: "I think the challenge of feminist scholarship is in fact a struggle for the sandbox and the tools. That one can go around having a different process of fact-making, finding a different methodology, finding a different process of consensus and sanctioning..."¹

The next time I met Ursula was in May 1991, at the National Conference organized by the CCWE. As chair of the conference "Women in Engineering: More than Just Numbers," I invited Ursula to give the keynote address. The conference was part of the CCWE's information gathering for a report to be delivered in the spring of 1992. In her speech, "Overcoming the Obstacles vs. Removing the Obstacles," Ursula Franklin made it clear that she favoured the latter option; she left us with excellent ideas that we took into consideration during our CCWE discussions. The final report bore the same title as the

1991 Conference, released in April 1992. It is easy to guess how this title was chosen!

On June 22, 1992, I met with Ursula Franklin again; this time, the meeting included Bill Vanderburg (a professor at the University of Toronto with expertise on technology and society), Jim Parr (an engineer, poet, composer, and Deputy Minister of Colleges and Universities in Ontario), and the Science and Technology Coalition (Ontario). This was another thought-provoking meeting at which I learned many new ideas about technology and society. Ursula and Bill were experts on this topic; Ursula's 1989 CBC Massey Lectures, *The Real World of Technology*, had been published and Bill had written much on this subject.² This enabled me to strengthen my lectures to engineering students on the impact of technology on society.

In May 1995, at the second "More than Just Numbers" conference, Dr. Ursula Franklin gave a memorable closing speech. Entitled "Looking Forward, Looking Back," the speech provided an excellent summary of the conference and included a key message: Ursula wanted us to make engineering fit for women, rather than women fit for engineering. She wanted us to avoid the situation where women in engineering classes had to adapt to masculine culture and become 'one of the guys.' Dr. Franklin was right in thinking that this happened all too frequently. She and I had witnessed sexist acts in which women were willing participants, likely signifying a desperate need to belong. Her speech was a road map for what should be accomplished over the next decade—the real changes that were needed to make engineering a friendlier place for women. In her speech, Ursula stated: "The exclusion of women has meant that some of the values that women traditionally bring to their tasks have been missing in the habits of work and thought in engineering."³ Everyone should read Ursula Franklin's words—not only those at the closing of the 1995 CCWE Conference—but all of her speeches, which are so thought-provoking and wise! I was especially touched by Dr. Franklin's tribute to my efforts for women in engineering:

To me, it is not only important to honour what [Monique] has done— but—even more so—how she has done it. There has been a very special spirit of generosity that has flown through all of her work, work that culminated in this conference; it was also present in all phases of the process of the investigation she chaired. This combination of generosity and professional competence, which Monique has exhibited, is something very rare, and I would like to salute Monique here and say, Monique, yours is a job well done and well to be continued.⁴

Ursula and I met again in May 2000 at the BAITWorM (Biology as if the world mattered) Conference held at the Ontario Institute for Studies in Education (OISE) in Toronto. She gave another one of her inspiring speeches and the networking opportunities were excellent. I also spoke at the event, along with Claire Deschênes (**Figure 2**), a professor of engineering at Université Laval who also held the NSERC/ALCAN Chair for women in science and engineering in Quebec. Ursula received the Worm of the year award! Below is an extract of



Figure 2. Dr. Ursula Franklin and Dr. Claire Deschênes at Dr. Franklin's launch of her book *Ursula Franklin Speaks. Thoughts and Afterthoughts* at the University of Toronto, May 23, 2014. Reproduced with the permission of Dr. Monique Frize.

her talk at the BAITWorM Conference in May 2000:

Women must have the education and technical literacy that will allow them access to decision-making and to meaningful work in the continually evolving technological society. But women will also have to survive as human beings, as creative, spontaneous, and cheerful persons.

Ursula Franklin came to speak at Carleton University on November 6, 2001; Nadine Faulkner (a collaborator on my upcoming first book *The Bold and the Brave: A History of Women in Science and Engineering*) and I made sure to attend this event. Ursula received a standing ovation after her talk. The next morning, she agreed to have a coffee with Nadine and me to discuss the research for the book. As expected, this proved to be very helpful.

As a devout pacifist Quaker, Ursula Franklin's scholarship and activism was geared towards the condemnation of warfare and of military technologies. She was particularly concerned with the threat of nuclear power and of nuclear weapons. One of her important contribution to science was the discovery of radioactive substances in Canadian children's baby teeth. "It was a little disconcerting because it was my teeth," her son, Martin Franklin, recounted. "I was seven or so at the time and while other children had the tooth fairy, mine were being tested for strontium-90." There is no doubt that Franklin's research helped sway world opinion against nuclear-weapons testing during the Cold War.⁵

In an interview, Ursula Franklin said that she was most interested in

contributing to peace. Her daughter recalled that her mother would get angry when she learned of events such as the Gulf War of the early 1990s, which the scientist referred to as “totally and utterly insane.” “When she saw things she didn’t agree with or didn’t like, she would draw you in and explain why she didn’t like them and what needed to be done,” she explained. Her son told CBC News it was her work as a teacher, which spanned four decades, that made a lasting impact in the lives of many individuals who looked up to her. “Her responsibility to herself was to open doors [for others],” he insisted. Franklin’s children say their mother believed in the value of small acts, which set the stage for the world to embrace bigger ones.⁶

Claire Deschênes reunited with Dr Franklin during the Berkshire Conference on the History of Women held in 2014 at the University of Toronto. Claire chaired a special session on the history of women in science and engineering, organized in honour of Ursula Franklin by Ruby Heap, professor of history at the University of Ottawa, at the request of the Conference organizers. Ursula attended the session and then addressed and exchanged with the audience and session participants. This was a great moment to hear her thoughts on women in science and engineering, all informed by a long and fruitful life and career. Ursula Franklin was an inspiration for many.

This special event included as well a signature session for Ursula’s most recent book, *Ursula Franklin Speaks: Thoughts and Afterthoughts*, written in collaboration with Sarah Jane Freeman. The book includes twenty-two of Dr. Franklin’s speeches and five interviews between 1986 and 2012, in which she shares her insights into the social and political impact of science and technology.⁷

Ursula Franklin, an experimental physicist, University Professor Emerita at the University of Toronto, a former board member of the National Research Council and the Science Council of Canada, and a companion of the Order of Canada, has also been awarded honorary degrees by more than ten Canadian universities. The Ursula Franklin Academy, a Toronto high school, was named in her honor. Fellow of the Royal Society of Canada, she was awarded the Order of Ontario, the Pearson Peace Medal and the City of Toronto award of merit,

Dr. Ursula Franklin passed away at 3:00 pm on Friday, July 22 2016. Ursula, my mentor and friend, is the woman I admired most in the entire world. A philosopher, scientist, pacifist, and the wisest woman I know. She will be missed by many, but we have the consolation that she left behind books, speeches, very wise sayings, and her archives located at the University of Toronto.

In Ursula’s honour, consider small acts that will make the world and our society a better place. Ursula was a proponent of “the earthworm theory”- it is the little acts that prepare the soil and nurture the seedlings so that bigger actions can follow and flourish.

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Endnotes

- 1 Ursula Franklin, "The Sandbox and the Tools," in *The Ursula Franklin Reader: Pacifism as a Map* (Toronto: Between the Lines, 2006) 324.
- 2 Ursula Franklin, *The Real World of Technology*. CBC Massey lectures series, 1992. Revised Edition. (Toronto: Anansi, 1999).
- 3 Ursula Franklin, "Looking Forward, Looking Back," *The Ursula Franklin Reader*, p. 348.
- 4 Ibid., p. 345.
- 5 "Ursula Franklin, renowned Canadian scientist, dead at 94," *CBC News*, posted on July 23, 2016. Retrieved from <https://www.cbc.ca/news/canada/toronto/ursula-franklin-dead-1.3692502>.
- 6 Ibid.
- 7 Ursula Franklin, in collaboration with Sarah Jane Freeman. *Ursula Franklin Speaks: Thoughts and Afterthoughts* (Montreal & Kingston: McGill-Queen's University Press, 2014).