

SCIENCE LIVES

Curie's intellectual offspring

The scientist did much to inspire and advance the careers of other women researchers

By **Vijaysree Venkatraman**

When pressed to write a memoir, Marie Curie—two-time Nobel Prize winner and the only person to win for two different fields of science—said that her life could be summed up in three sentences: “I was born in Warsaw of a family of teachers. I married Pierre Curie and had two children. I have done my work in France.” Fortunately, a number of other authors have felt more details were warranted, and Curie has since been the subject of many acclaimed biographies, including one written by her younger daughter, the journalist Ève Curie (*1*).

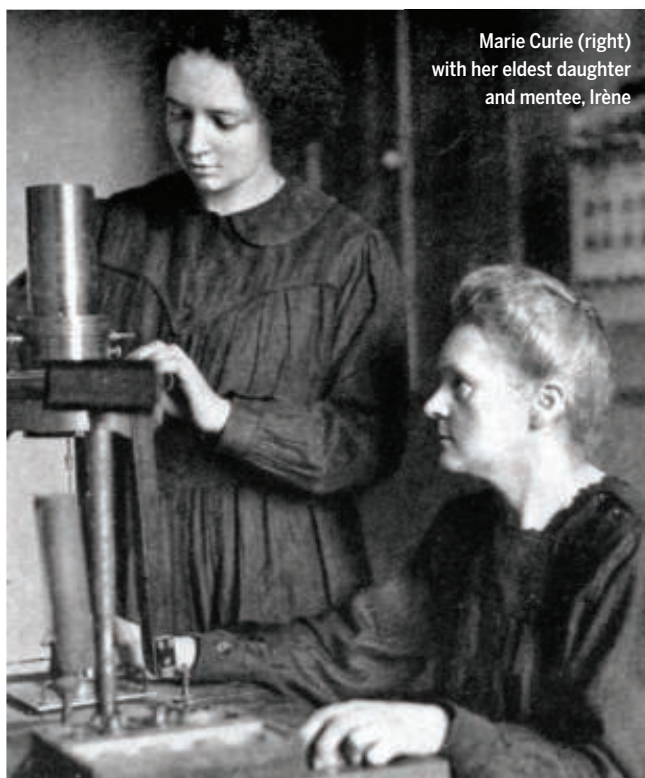
What then remains to be said of the scientific icon? In *The Elements of Marie Curie*, Dava Sobel offers a vivid narrative that uses Curie's well-known story as scaffolding for tales of the brilliant young women who trained in her lab and became part of her scientific legacy. Sobel, a 2000 finalist for the Pulitzer Prize for Biography, has unearthed these stories from letters, scientific publications, and articles or books written about Curie's mentees.

An early protégée, Ellen Gleditsch, a trained pharmacy assistant and radioactivity enthusiast from Norway, would be the first woman chemist to be elected to the Academy of Sciences and Letters in her home country. Curie's last lab “daughter,” Marguerite Perey, who topped a Parisian class of female lab technicians, arrived without a letter of recommendation from any top scientist. She went on to discover the element francium. One notable mentee was, of course, Irène Joliot-Curie, Curie's eldest daughter. After Marie's death, Irène and her husband Frédéric won the Nobel Prize in Chemistry for what they described as the “synthesis of artificial radioelements.”

Forty-five female researchers passed through Curie's lab in her lifetime. Some left early, when it became clear that their men-

tor, who was frequently hospitalized, would not be accessible during their planned period of stay. Others, like Gleditsch, came back for additional stints and became advocates for research opportunities for women.

During World War I, when x-ray technology was still new, Curie's innovative mobile x-ray units ensured that surgeons did not have to operate blindly on injured soldiers. She tapped her alumnae network to train personnel, including women with no more



Marie Curie (right) with her eldest daughter and mentee, Irène

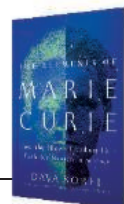
than an elementary education, for the vital job of x-ray technician. The army dubbed its truck-based mobile units “petites Curies.”

The wartime service did much to restore Curie's reputation, which was tarnished in 1911 by an affair with a married colleague, the physicist Paul Langevin. (There was no public outcry when the same man, still unhappily married, later fathered an illegitimate child with a former student, Sobel notes.)

When a member of the Royal Swedish Academy of Sciences advised Curie not to receive her second Nobel Prize in person because of this scandal, she refused to back

The Elements of Marie Curie: How the Glow of Radium Lit a Path for Women in Science

Dava Sobel
Atlantic Monthly Press, 2024.
336 pp.



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down. In her acceptance lecture, delivered in Stockholm that December, she described the steps she took to place radium, and the much rarer polonium, on the periodic table. Enraged by the public's preoccupation with her personal life, fellow scientist Albert Einstein wrote to her that same year expressing his admiration for her intellect, her drive, and her honesty.

Others were compelled by Curie's simplicity. Marie Mattingly Meloney, an American journalist for a women's magazine, was reportedly so moved by the “gentle woman in a black cotton dress” that she vowed to procure an additional gram of radium—then prized at \$100,000—for the scientist's research. The target was accomplished, largely thanks to the generosity of women in the United States. To thank her benefactors in person, Curie toured the United States in 1921, despite her failing health.

Curie's radium research, always arduous, would ultimately prove fatal. Sobel notes the cognitive dissonance common among “radioactivists,” who were better equipped than anyone to appreciate the destructive power of the elements they handled but often believed that the health setbacks they caused could be alleviated by, say, a brief holiday.

After winning the 1903 Nobel Prize, Curie told reporters who visited the lab: “In science, we should be interested in phenomena, not in individuals.” She was only partially right. Even during her lifetime, she would inspire many young women to study radioactivity, which she described as “an entirely separate kind of chemistry... which we might well call the chemistry of the imponderable.” This superbly rendered portrait of Curie and her intellectual offspring could inspire many bright minds to follow in the scientist's footsteps for generations to come. ■

REFERENCES AND NOTES

1. E. Curie, *Madame Curie: A Biography* (Doubleday, 1937).

10.1126/science.adr2515

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