



Science and Mathematics Industry

Careers in STEM (Science, Technology, Engineering, and Math) represent the fastest-growing professional sector; however, women are severely underrepresented in these fields. Today, women now make up half the national workforce, earn more college and graduate degrees than men and by some estimates represent the largest single economic force in the world. Yet the gender gap in science persists, to a greater degree than in other professions, particularly in high-end, math-intensive fields such as computer science and engineering.

As America continues to fight to regain its economic footing, there is a rising drumbeat for the country to raise its performance in science and math. The National Inventors Hall of Fame recognizes monumental individuals whose innovations have not only changed the way we live today but set the standard for American ingenuity. This year, the National Inventors Hall of Fame will induct four women for their outstanding achievements. Two of them provide an inspiring example for the next generation of women with aspirations to become career biotechnologists or engineers.



Mary-Dell Chilton

Mary-Dell Chilton is one of the founders of modern plant biotechnology and led a research team that produced the first transgenic plants in 1983. Chilton's work provided evidence that plant genomes could be manipulated more precisely and efficiently than was possible with traditional plant breeding and pollination techniques. Her

groundbreaking research has formed the basis for one of the main methods used throughout modern plant biotechnology.

The World Food Prize named Chilton one of their 2013 Laureates because of her breakthrough achievements in founding, developing and applying modern agricultural biotechnology. Chilton made it possible to develop crops with increased yields, resistance to insects and disease and the ability to tolerate adverse environmental conditions resulting in increased incomes and providing food for a growing global population.



Edith Clarke

Edith Clarke invented the graphical calculator that greatly simplified the calculations necessary to determine the electrical characteristics of long electrical transmission lines. Throughout her career, Clarke was known as a pioneering female electrical engineer and for her application of mathematics to electrical engineering.

Starting in 1912, she assisted National Inventors Hall of Fame Inductee George Campbell and learned much about transmission lines and electrical circuits

from him. She eventually managed the female computers responsible for calculations for the AT&T's Transmission and Protection Engineering Department during World War I.

In 1918, she left AT&T to study electrical engineering at MIT. Clarke was a female of firsts. Her electrical engineering degree was the first one ever awarded by MIT to a woman and with opportunities for women limited, she went to work as a computer again, this time at General Electric. It was while at General Electric that she invented her calculator and other inventions to improve the electrical distribution system. In 1922, she was promoted at GE to the Central Station Engineering Department and became the first professionally employed female electrical engineer in the United States. She was also the first female full voting member of the American Institute of Electrical Engineering (which would become the IEEE in 1963). In February 1926, she presented a paper entitled "Steady-State Stability in Transmission Systems" and became the first woman to present a paper before the AIEE. She retired from GE in 1945 and was named a fellow of AIEE in 1948, another first. In 1947, she was appointed to the faculty of the University of Texas at Austin, making her the first full female professor of electrical engineering in the country and the first female to teach engineering at UT.