

ALU – WOMEN’S STUDIES E. NEWSLETTER

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Theme – **Women in Science and Technology**

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Editor’s Desk

"Certain people – men, of course – discouraged me, saying [science] was not a good career for women. That pushed me even more to persevere." – Francoise Barré,

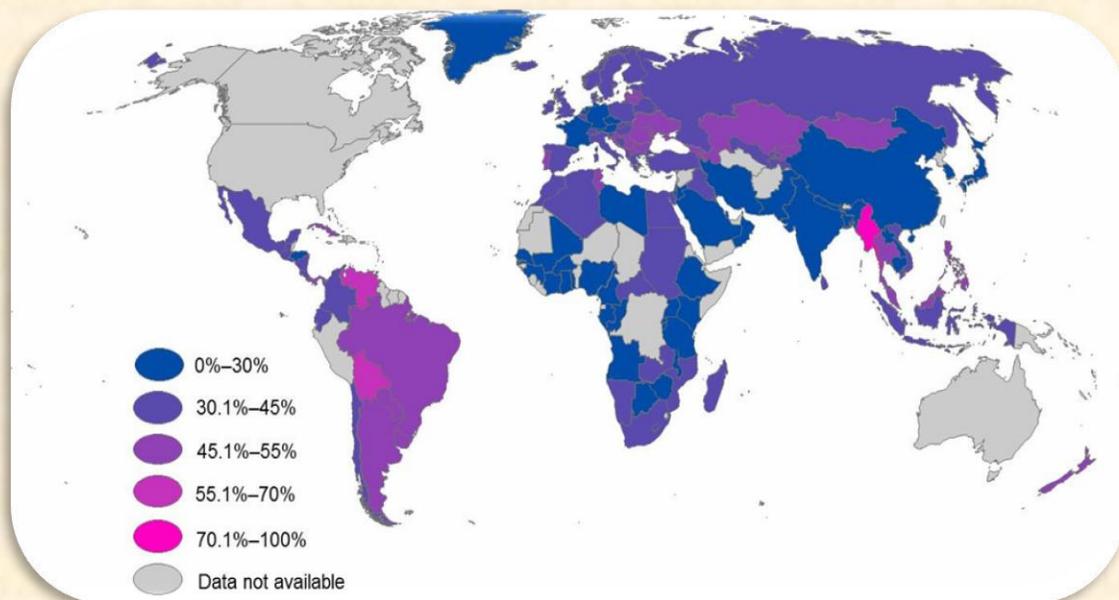
(Virologist and winner of the 2008 Nobel Prize in Physiology or Medicine)

Science and technology play an extremely important role in the contemporary society. The roles of men and women have changed dramatically in the contemporary society. Women play an important role in a lot of spheres in the contemporary society. They make a great contribution to the development and improvement of life in a lot of spheres. The history shows a lot of examples of great input made by women to the development of Science and Technology. It is hard to estimate the role of women in the development of different sphere. Scientific and industrial field, as well as other technological industries are influenced and dominated by men. Despite the fact that there are women who have played an important role in the development of Science and Technology industry, their names are rarely mentioned. For example, Ada Byron, the daughter of the famous Lord Byron, became the first computer programmer. She also was a prominent mathematician. Unfortunately, her name is rarely mentioned in the history of the development of the computer industry and when people speak about this sphere they remember the names of famous male specialists. From recent history, it is worth to mention Grace Hopper, a Ph.D. in mathematics. She became one of the leaders in the field of software development and made a great contribution to the development of new programming techniques. The National Assessments on Gender and Science, Technology and Innovation report states that women still

have worse access to information and technologies in comparison to men. Women's role in the technological development is still badly defined. Technological resources are scantily used to support women's activities and occupation. In addition, the percentage of women in science and technology is very low. "Women remain under-represented in engineering, physics and computer science — less than 30% in most countries. In addition, women have less access to different resources, which would help them to take a leadership position and have an active influence on social processes. Women usually have lower access to finances, property, education and technology. This is very true from the developing countries, but in the developed countries this tendency is also actual. Generally, women who try to enter technology profession experience gender prejudices, lack of female role models, glass ceilings, violence, harassments and difficulties in balancing the private and public works. In addition, economic status and political power also play an important role in female parity in science and technology. Gender equality and normal work conditions for both, men and women are the characteristics of any normal society and it is necessary to pay attention to the problem of gender inequality in science and technology. Creating a gender balance and providing a conducive environment for women scientists in Science and Technology would promote the sustainable development of the country.

The gender gap in science

Women as a share of total researchers, 2014

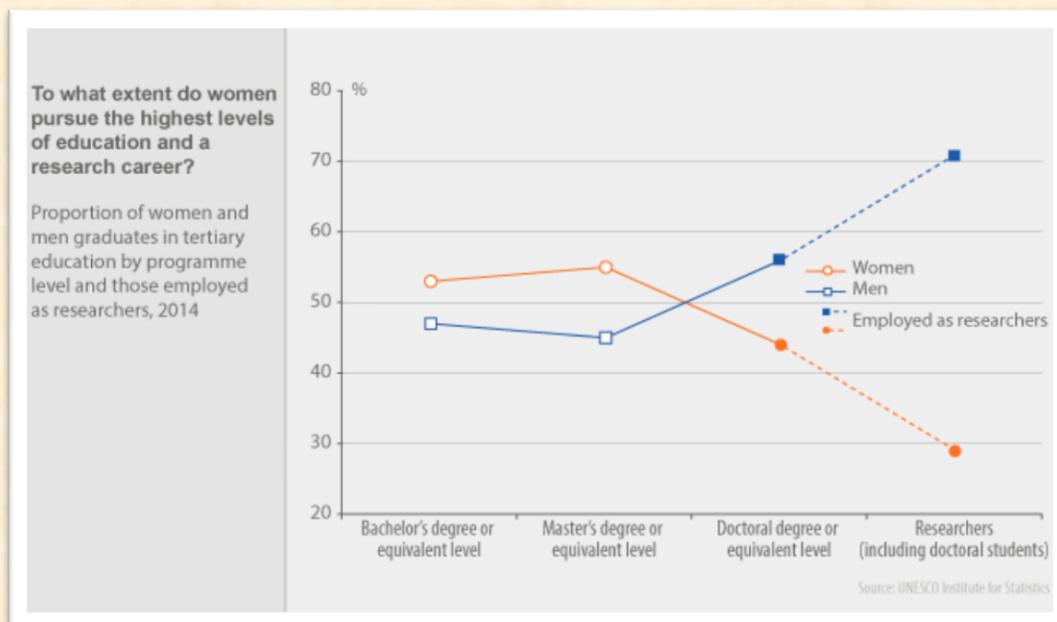


Source: UNESCO Institute for Statistics, August 2016.

The regional averages for the share of female researchers (based on available data only) for 2014 are:

- 28.8% -World
- 39.9% - Arab States
- 39.6% - Central and Eastern Europe
- 47.2% - Central Asia
- 22.9% - East Asia and the Pacific
- 44.7% - Latin America and the Caribbean
- 32.2% - North America and Western Europe
- 19.0% - South and West Asia
- 30.4% - Sub-Saharan Africa

Women are Missing from the Ranks of Higher Education and Research



PROMINENT WOMEN SCIENTISTS IN THE WORLD

Some of the greatest scientists of all time were females who have made important discoveries in a variety of fields in science. Several of their contributions throughout history have even surpassed those of their male counterparts. Our list of the most famous female scientists below are organized in order of popularity and to understand the advancements they made.

Marie Curie

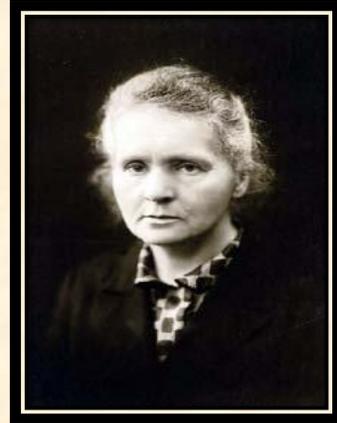
Born: *Nov 7, 1867 in Warsaw, Kingdom of Poland, then part of Russian Empire*

Field: *Physics, chemistry*

Famous For: *Radioactivity, polonium, radium*

Awards: *Nobel Prize in Chemistry (1911), Matteucci Medal (1904), Nobel Prize in Physics (1903), Davy Medal (1903)*

Died: *July 4, 1934 (at age 66) in Passy, Haute-Savoie, France*



Marie Curie was born Maria Sklodowska in 1867 in Warsaw, Poland. She was the first woman to win the Nobel Prize and the only woman to have won the award on two different occasions. Her efforts with Pierre Curie, her husband, led to the discovery of radium and polonium.

Rita Levi-Montalcini



Born: *Apr 22, 1909 in Turin, Kingdom of Italy*

Famous For: *Nerve growth factor*

Awards: *Nobel Prize in Physiology or Medicine (1986), National Medal of Science (1987)*

Died: *Dec 30, 2012 (at age 103) in Rome, Italy*

Rita Levi-Montalcini was an Italian neurologist and a Nobel Prize winner in medicine and physiology in 1986 for the discovery of Nerve Growth Factor (NFG). She also held the distinction of being the oldest living Nobel laureate as well as the first ever to reach their 100th birthday.

Lise Meitner



Born: Nov 7, 1878 in Vienna, Austria-Hungary

Field: Physics

Famous For: Nuclear fission

Awards: Enrico Fermi Award (1966), Max Planck Medal (1949), Lieben Prize (1925)

Died: Oct 27, 1968 (at age 89) in Cambridge, England

Lise Meitner was born an Austrian born physicist who conducted research on nuclear physics and radioactivity. She became one of the first to discover that a uranium atom would split when it was bombarded by neutrons. Many think of Meitner as the most important woman scientist of the twentieth century. Albert Einstein called her the "German Marie Curie."

Maria Mitchell



Born: Aug 1, 1818 in Nantucket, Massachusetts

Field: Astronomy

Famous For: First female U.S. professional astronomer, Discovery of C/1847 T1

Died: June 28, 1889 (at age 70) in Lynn, Massachusetts

Maria Mitchell was the first female professional astronomer in the United States. In 1847, she discovered a comet and named as "Miss Mitchell's Comet," and was consequently awarded a gold medal by the King of Denmark. She was a strong supporter of girls' education, a view she shared with her father. In 1994, Mitchell was elected to the National Women's Hall of Fame.

Elizabeth Blackburn



Born: *Nov 26, 1948 in Hobart, Tasmania, Australia*

Field: *Molecular biology*

Famous For: *Study of telomere and telomerase*

Awards: *Nobel Prize in Physiology or Medicine (2009), L'Oréal-UNESCO Award for Women in Science (2008), Louisa Gross Horwitz Prize, and many others*

Elizabeth Blackburn is an Australian-born American biologist. She is world famous for her study of telomeres and the co-discovery of telomerase, an enzyme that controls telomeres. The telomere is part of the end of a chromosome which protects them.

Caroline Herschel

Born: *Mar 16, 1750 in Hanover, Germany*

Field: *Astronomy*

Famous For: *Discovery of comets*

Awards: *Prussian Gold Medal for Science (1846), Gold Medal of the Royal Astronomical Society (1828)*

Died: *Jan 9, 1848 (at age 97) in Hanover, Germany*



Caroline Herschel worked closely together with her brother Sir William Herschel throughout their careers as astronomers. Caroline discovered several comets, one of which, the 35P/Herschel-Rigollet, is named after her. She was the first woman scientist to be recognized by the United Kingdom.

Gertrude Elion

Born: *Jan 23, 1918 in New York City*

Field: *Biochemistry, pharmacology*

Famous For: *Development of various drugs, research that led to the development of the AIDS drug AZT*

Awards: Lemelson-MIT Lifetime Achievement Award (1997), National Inventors Hall of Fame (1991), National Medal of Science (1991), Nobel Prize in Medicine (1988), Garvan-Olin Medal (1968),

Died: *Feb 21, 1999 (at age 81) in North Carolina*

Gertrude B. Elion was a joint-winner of the Nobel Prize in Physiology or Medicine in 1988 “for discoveries of important principles for drug treatment.” One of her most notable creations was the development of the AIDS drug AZT.



Chien-Shiung Wu

Born: *May 31, 1912 in Liu Ho, Shanghai, China*

Field: *Physics*

Famous For: *The Manhattan Project, Beta decay research, parity violation experiments*

Awards: *Wolf Prize (1978), National Medal of Science (1975), Bonner Prize (1975), Comstock Prize in Physics (1964)*

Died: *Feb 16, 1997 (at age 84) in New York City, United States*

Chien-Shiung Wu is known for her work on the Manhattan Project and her help with finding the process for separating uranium into U-238 and U-235. She has several nicknames including the “Chinese Marie Curie” and the “First Lady of Physics.”



Dorothy Hodgkin

Born: *May 12, 1910 in Cairo, Egypt*

Field: *Biochemistry*

Famous For: *Development of Protein crystallography, Determining the structure of Insulin*

Awards: *Lomonosov Gold Medal (1982), Copley Medal (1976), Nobel Prize in Chemistry (1964)*



Died: *July 29, 1994 (at age 84) in Ilmington, Warwickshire*

Dorothy Hodgkin was a British chemist, who is known as the founder of the science of protein crystallography. She was awarded the Nobel Prize in chemistry for her work with Vitamin B12 in the year 1964. During that time, the Nobel Prize committee also cited her contribution in the determination and confirmation of the structure of penicillin, in addition to vitamin B12.

Irène Joliot-Curie

Born: *Sep 12, 1897, in Paris, France*

Field: *Chemistry*

Famous For: *Joint discovery of artificial radioactivity with Frederic Joliot-Curie*

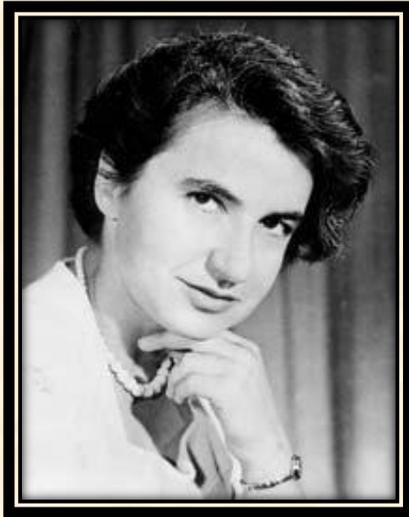
Awards: *Nobel Prize for Chemistry (1935)*

Died: *Mar 17, 1956 (at age 58) in Paris, France*



Daughter of famed Marie Curie, Irene Joliot Curie won the Nobel Prize in Chemistry in 1935 for the finding of artificial radioactivity. She, along with her husband Frederic, also turned boron into radioactive nitrogen as well as aluminum into phosphorus and magnesium into silicon.

Rosalind Franklin



Born: *July 25, 1920 in Notting Hill, London*

Field: *X-ray crystallography*

Famous For: *Fine structure of coal and graphite, Structure of DNA, structure of viruses*

Died: *Apr 16, 1958 (at age 37) in Chelsea, London*

Rosalind Franklin was a X-ray crystallographer and biophysicist whose work greatly contributed to the comprehension of molecular structures. Her most notable work revolved around X-ray diffraction images of DNA. Her work in this resulted in the finding of the DNA double helix.

Jane Goodall

Born: *Apr 3, 1934 in London, United Kingdom*

Famous For: *Welfare of animals, conservation, study of chimpanzees*

Awards: *DBE (2004)*

Jane Goodall is known worldwide for her groundbreaking studies on primates. She is considered as the top expert on chimpanzees in the world and is perhaps best known for her 45 year study on the social lives of these animals in Tanzania.



Women have made significant contributions to science from the earliest times. Women scientists need recognition for their contribution and should be made visible to the nations. Gender balance should occur in the field of science and Technology as women are half of the population their contribution is a vital thing for the development of the nation.
