

## GI-MS45-O3

### Women in science, the long road to gender parity

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Women have been involved in the different fields of Science since the beginning of History. In 2700 BC the Egyptian Merit-Ptah, the first female scientist named in History, was described as “chief physician”. In Babylonian Mesopotamia, around 1200 BC, Tapputi-Belatekallim is considered the first chemist. In ancient Greece medicine, mathematics or astronomy were open to women, and Egyptian female scientists, mainly in Alexandria, were involved in applied chemistry, as Mary the Jewess, considered the first alchemist.

The arrival of the European Middle Ages (476 BC), together with the death of the philosopher, astronomer and mathematician Hypatia of Alexandria in 415 AD, changed the scene, almost completely obliterating the presence of women in science and culture during the following centuries.

In the 11th century, most of the first universities only allowed the presence of men as teachers and students. The University of Bologna was a rare exception, allowing female students since its founding in 1088.

Some small changes appeared during the 17th century, when women began to collaborate in research in natural sciences (mainly astronomy and botany).

The 18th century marked the beginning of the return of women to science when Laura Bassi earned the first female professorship at a European university, and women were accepted in many Universities and Academies of Sciences throughout Europe.

In the 19th century the University of Zurich became a European reference on women's access to higher education, the first woman was officially accepted at a Spanish University (1872), women began to obtain Doctorate Degrees in Sciences (Medicine in 1849 and Chemistry in 1874) and the University of Oxford created its first no-segregated lectures (1879).

Finally, in 1903 and 1911 Marie Curie received her two Nobel Prizes in Physics and Chemistry, unequivocally confirming the ability of female researchers to compete with their male colleagues.

Regarding crystallography, Kathleen Lonsdale joined in 1924 the new research group created by William H. Bragg at the Royal Institution, and in 1964 Dorothy Crowfoot Hodgkin was awarded the Nobel Prize in Chemistry for her work in crystallography. Nowadays, data suggest that around one third of the people who work in crystallography in the world are women.

However, according UNESCO, although the ratio of male and female researchers is becoming closer, parity still depends to a large extent on several factors (scientific field, country, employment situation...). Therefore, it is necessary to continue working to finally reach real gender parity in science.

**Keywords:** Science, Women, Parity

## GI-MS45-O4

### Celebrating women in crystallography through the Cambridge Structural Database

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Women have played a pivotal role throughout the history of crystallography and their significant contributions to this field can be demonstrated through the Cambridge Structural Database (CSD).

The CSD is the world's repository for organic and metal-organic structures and contains nearly a million entries. In 1965, Olga Kennard founded the database under the belief that the collective use of data would lead to the discovery of new knowledge. The data, and the accompanying software, are now used by scientists worldwide working in over 70 countries and the knowledge derived from the structural data has underpinned fundamental chemical discoveries and played a key role in designing new materials from drugs to pigments.

The database itself also contains structures authored by women worldwide from many different areas of crystallography. This talk will celebrate some of their contributions to the CSD, from the structures of Vitamin B12 by Dorothy Hodgkin, to structures from Judith Howard, Biserka Kojić-Prodić, Zoya Starikova, Kathleen Lonsdale and Helen Stoeckli-Evans to name but a few.

**Keywords:** Women, Crystallography, Database