Biography Handout
Marietta Blau, Austrian Particle Physicist

Marietta Blau was a particle physicist who played an important role in developing photographic techniques to detect particles. After completing her doctorate in 1919 at the University of Vienna, she could not find any suitable research positions with income or status in Vienna. She pursued her own research as an unpaid volunteer at the Institute for Radium Research in Vienna, where she performed groundbreaking research throughout much of the 1920s and 1930s. While at the Institute, Blau developed photographic nuclear emulsions, a way to take pictures of high energy interactions of nuclear particles. She recruited doctoral student Hertha Wambacher to aid her, and together in 1937 they discovered cosmic ray "disintegration stars" – micro configurations of particle paths resulting from the split of a nucleus hit by a cosmic ray. She also worked on identifying alpha particles and protons and attempting to determine their energy, among other new research.

Blau faced great prejudice due to her gender and Jewish religion. When Hitler annexed Austria in 1938, Blau was working in Norway but was forced to flee. With the help of a recommendation from Albert Einstein, she acquired a secure position as a professor in Mexico City. Before she left Austria, her scientific papers were confiscated by German officials in Hamburg, some of which included plans for future research. Later on, some of the ideas were published by her former collaborator Wambacher and G. Stetter, both who were supporters of the Nazi party. Blau spent a few years in Mexico before moving to the United States in 1944 to further her research.

In 1950, Cecil Powell won the Nobel Prize for Physics for applications of the photographic method that Blau developed early in her career. Powell decided to make this his field of research once he had been alerted to Blau and Wambacher's previous research of the topic. Blau was also nominated for the 1950 Nobel Prize due to her development of photographic nuclear emulsions but did not win.

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