

SYHQ 3: Women in the History of Quantum Mechanics: The Project and its New Insights

Time: Monday 16:00–18:00

Location: Forum Wissen

Invited Talk SYHQ 3.1 Mon 16:00 Forum Wissen
Women in the History of Quantum Physics — ●MARGRIET VAN DER HEIJDEN — Eindhoven University of Technology (TU/e), The Netherlands

The narratives of the development of quantum mechanics are as "male-dominated" as this subfield of science itself, science historian Massimiliano Badino noted some nine years ago. The book *Women in the History of Quantum Physics: Beyond Knabenphysik* aims to challenge these conventional "all-male" narratives. In sixteen chapters, the authors – all members of the international and interdisciplinary working group *Women in the History of Quantum Physics* – analyse the work and lives of women who contributed to quantum developments in the twentieth century. Not the handful of famous women like Marie Skłodowska Curie, Maria Goeppert Mayer and Lise Meitner, but the women who remained in the shadows, had to interrupt their careers or whose work was overlooked. By analysing and comparing their lives and work, themes can be distilled that are relevant to understanding why women's participation in physics research remains low even today. I will explore some of these themes and illustrate them with the lives and experiences of some of the protagonists of the book chapters.

Invited Talk SYHQ 3.2 Mon 16:30 Forum Wissen
Molecular WiHQP Vignettes: Hertha Sponer and Elizabeth Monroe — ●PATRICK CHARBONNEAU — Duke University, Durham, NC, USA

Hertha Sponer spent her early years in Göttingen, at the center of the quantum revolution. Training as an experimentalist under Peter Debye and then heading James Franck's spectroscopy labs as his assistant uniquely positioned her to contribute to the development of quantum theory and to the emergence of molecular physics. She did so by providing novel interpretations of hitherto unexplained spectrographic data, and by suggesting new applications of the theory to diatomics. Her name has nevertheless been largely written out of scientific accounts of these years. Extant descriptions almost exclusively

concern her postwar years at Duke. By that time quantum theory was well established, and her research had pivoted in other directions.

Elizabeth Monroe did not spend time in Göttingen, but trained with two scientists who did: Emmy Noether at Bryn Mawr and John E. Lennard-Jones at Cambridge. Her PhD work on computational methods for solving the electronic structure of simple diatomics followed from that influence. World War II, however, took her away from quantum mechanics. She joined John G. Kirkwood at Cornell to study hard sphere crystallization and later worked on the Manhattan project to develop implosion technology. Following the birth of her son, who suffered from a severe developmental disability, she took up public advocacy, building on her training to move research and policy forward. Others took up computational quantum chemistry.

Invited Talk SYHQ 3.3 Mon 17:00 Forum Wissen
Grete Hermann: A pioneer of the philosophical debate about the foundations of quantum mechanics and a political activist — ●ANDREA REICHENBERGER — TU Munich

Grete Hermann, the first doctoral student of mathematician Emmy Noether and private assistant of philosopher Leonard Nelson, was one of the early contributors to the foundations of quantum mechanics. She was also one of Göttingen's most important philosophers. With the advent of National Socialism, Hermann, like many of her colleagues, left Göttingen. While other émigrés had a lasting impact on physics and mathematics abroad, after the war, Hermann instead chose to return to her home country in 1946. As a political activist in the anti-fascist resistance and in post-war education and politics, she played a key role in the social democratic development of the Federal Republic of Germany. A common thread through her work are the Kantian questions: What can I know? And what should I do? My talk explores Hermann's answers to both of these.

30 min. discussion