



Ben-Gurion University of the Negev

## **The Jacques Loeb Centre for the History and Philosophy of the Life Sciences**

A joint seminar with the Department of Life Sciences

# **Colloids and epigenetic marks: Controversies, then and now, over the molecular concept of genetic information**

**Ute Deichmann, Jacques Loeb Centre**

The recognition of DNA as a non-uniform macromolecule in the 1940s was the pre-requisite for understanding its function as carrier of genetic information. Before the rise of (macro-) molecular biology, colloidal biology had dominated the field of biochemistry for decades. Biocolloidists rejected the 19th-century idea of macromolecules, regarding these compounds instead as colloidal aggregates of small molecules. The notion of macromolecular DNA as sole carrier of genetic information was challenged again in the late 20th-century by the discovery of epigenetic marks, interestingly enough, small chemical molecules.

Based on historical sketches of biocolloidy and epigenetics, I will demonstrate similarities in reasoning and attitudes across differences of time and analyze the scientific and philosophical motivation behind them. I focus on the shared preferences for attributing biological specificity (such as genetic or enzymatic specificity) to small molecules, not to macromolecules. The talk will conclude with a short overview on how researchers' scientific outlooks have been influenced by non-scientific predilections such as a mechanistic or anti-mechanistic worldview, and/or preference for, or rejection of, "Lamarckian" inheritance.

**June 9th (Monday), Building 38 ([map](#)), Auditorium 10, 14:00**

The Jacques Loeb Centre seminars provide an interdisciplinary forum, in which historians and philosophers of science, as well as scientists, present and discuss new research related to science with a special focus on the life sciences. Case studies and surveys examine the impact of political, socio-economic and personal factors on the conduct of science, the ethics of research, and the causes of progress and setbacks.

**Faculty and students from all disciplines are invited!**

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