FASSBERG SEMINAR SERIES

special date & time

Mary Herbert
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Replacing the maternal mitochondrial genome to prevent transmission of disease

The fertilised egg inherits its nuclear DNA from both parents and its mitochondrial DNA (mtDNA) only from the mother. Maternal transmission of both genomes can be hazardous. First, meiosis, the specialised cell division required for gametes transmit a single copy of each chromosome, becomes increasingly error prone as women get older. As a consequence, the chance of establishing a viable pregnancy declines markedly from the age of ~35 onwards. Second, women who carry pathogenic mtDNA mutations are at risk of transmitting life-limiting metabolic diseases to their children. The severity of disease is largely determined by the relative levels of mutated and wildtype mtDNA. In the worst cases, children die before reaching the age of five. Because of a phenomenon known as the mtDNA genetic bottleneck, it can be very difficult to predict the risk of disease transmission. This makes for profoundly difficult reproductive decisions. Work in my lab seeks to develop reproductive technologies to prevent transmission of mtDNA disease and to better understand the principles governing mitochondrial genome inheritance.

Host: Melina Schuh

Thursday / 14.11.2019 / 13:00

Max Planck Institute for Biophysical Chemistry
Large Seminar Room / Administration Building