Magdalena Zernicka-Goetz is the Professor of Development and Stem Cells at the University of Cambridge and a Bren Professor of Biology and Biological Engineering at the California Institute of Technology. Spanning the past 25 years, research from the Zernicka-Goetz lab has broken new ground in studies of human embryo post-implantation development *in vitro*, cell fate specification in mouse and human embryos, and the creation of 3D embryos by combining multiple stem cell types. The Zernicka-Goetz Lab aims to uncover the fundamental principles and molecular mechanisms that regulate cell identity, pluripotency, and embryo plasticity, size, shape, and self-organization.