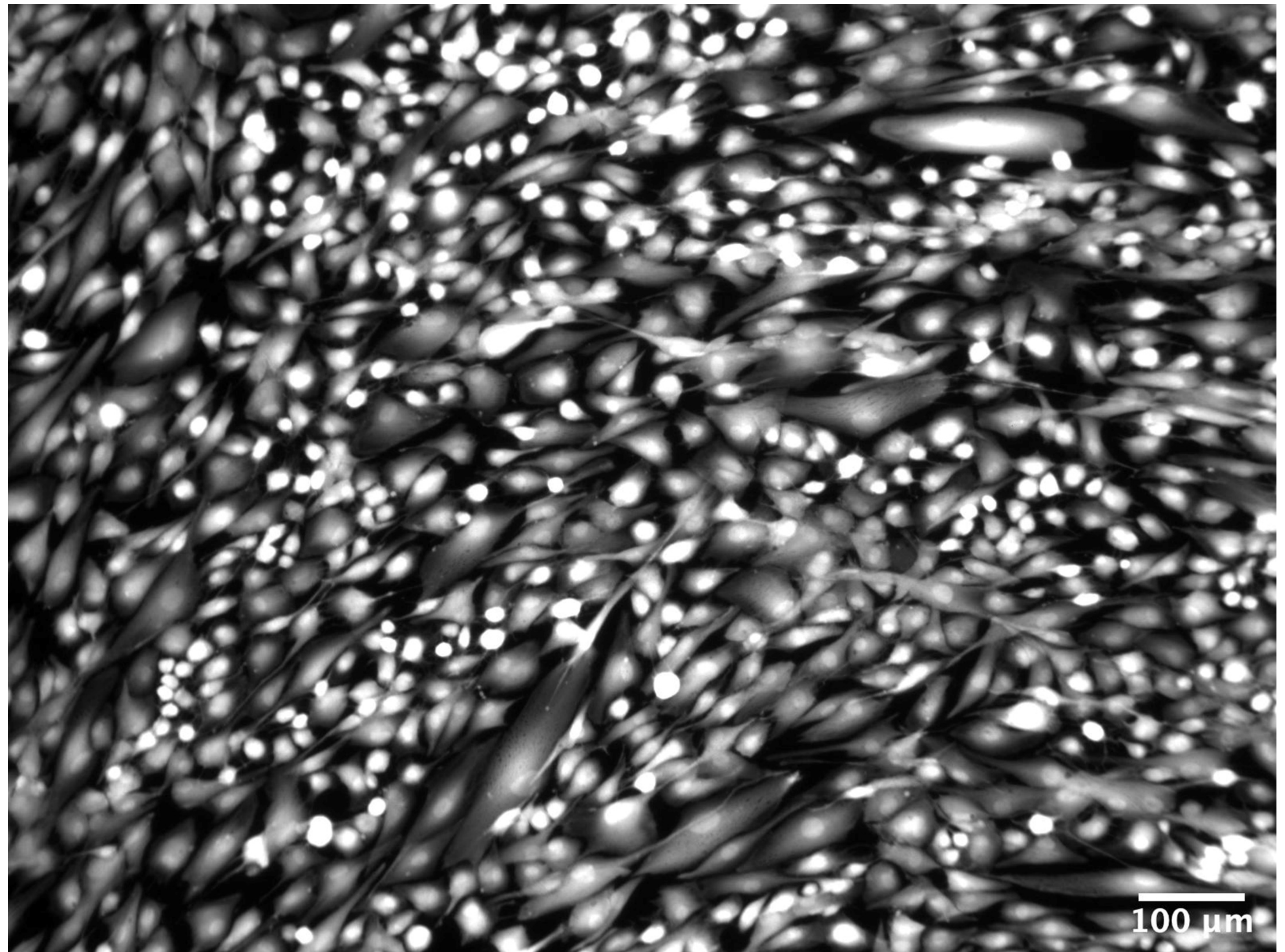


Decidualized Endometrial Stromal Cells

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Pregnancy is a fascinating biological process. As a bioengineering Ph.D. student, I combine biology and engineering techniques to study the cellular mechanisms of pregnancy in human cells. Decidualization of human endometrial stromal cells (HESCs) is a process that occurs during the menstrual cycle to prepare the endometrium, the lining of the uterus, for embryo implantation. Decidualized HESCs have a rounder shape and have increased expression of prolactin and insulin-like growth factor binding protein-1 compared to non-decidualized HESCs. In this image, I induced decidualization in HESCs by incubating them in medroxyprogesterone acetate and 8-Bromo-cAMP. HESCs were grown in 6 well tissue culture plates, decidualized for 6 days, stained, and imaged. HESCs were stained with calcein AM, a dye used to assess cell viability, and imaged using a fluorescent microscope with a 10X objective. In this image, we see large, plump HESCs: their round shape indicates they have been decidualized. Using this method to mimic an important biological process in pregnancy, I aim to develop 3D biomaterial endometrial models to provide insight into pregnancy and pregnancy disorders.