



The Human Uterus Cell Atlas **HUTER**

Grant Agreement Number
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Title
Human Uterus Cell Atlas
Acronym
HUTER
Duration in months
30
Number of International
Partners
6
Countries
4



HUTER

The Human Uterus Cell Atlas

ABOUT THE PROJECT

The human uterus is a major female reproductive organ essential to the continuity of the human species, and also plays an important role on infant and maternal mortality and morbidity and women's health.

HUTER is the first project that focuses on the transcriptomic, genomic and spatial changes of the uterus at single cell level throughout the menstrual cycle and across lifespan. The gained knowledge will contribute to better understand the human uterus and move forward its clinical translation in reproductive medicine, obstetrics, gynaecology and regenerative medicine.

INCLIVA | VLC
Health Research Institute

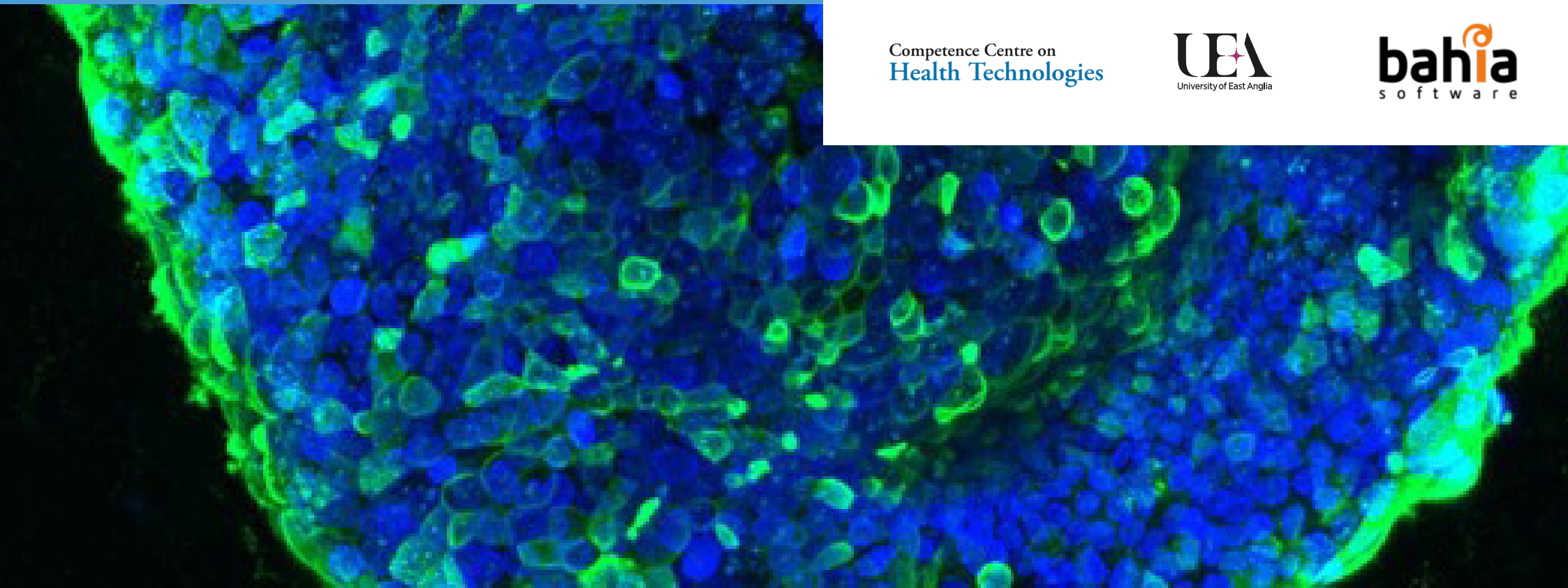


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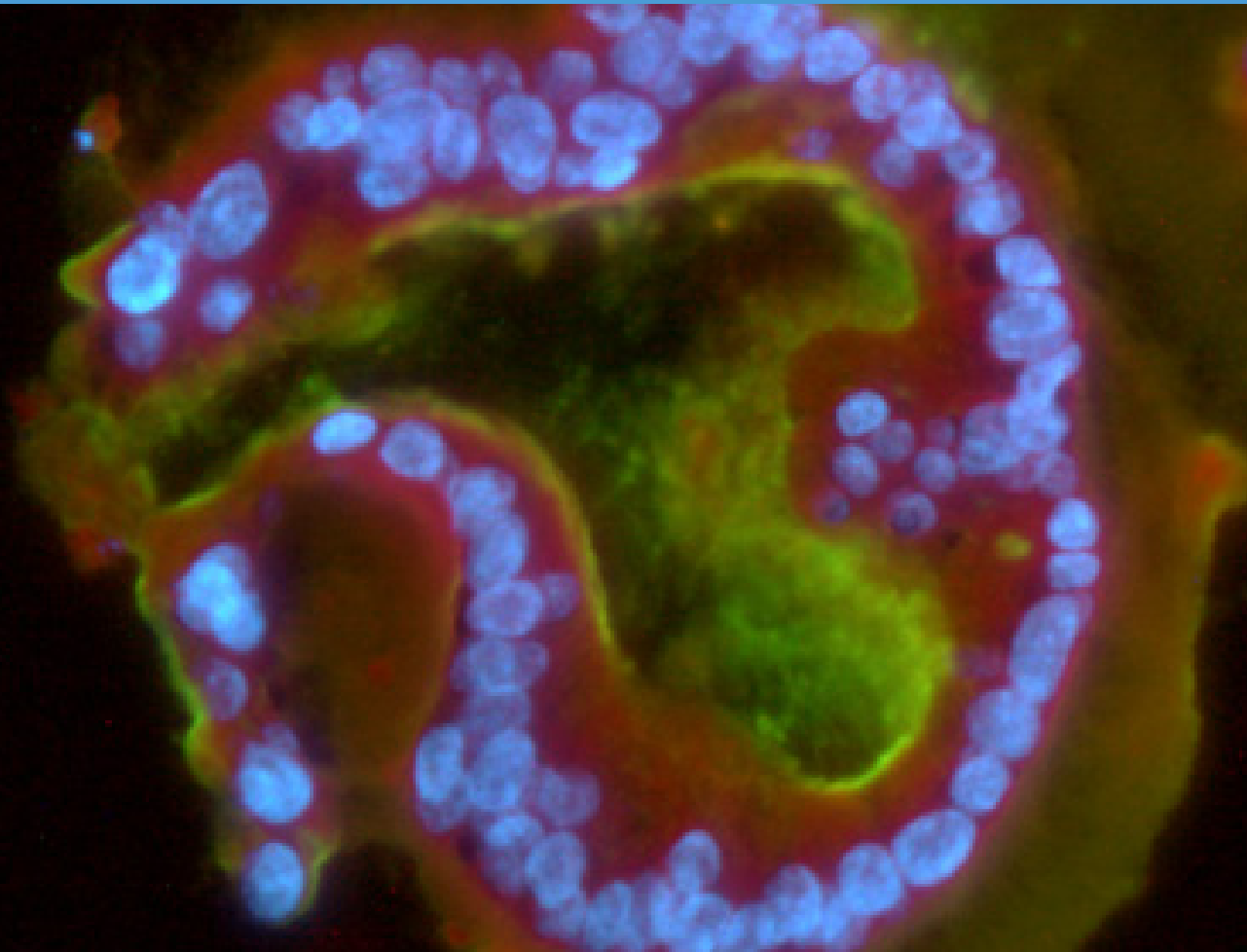
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ABSTRACT

The **Human Uterus Cell Atlas (HUTER)** project aims to create the single-cell and spatial reference map of the human uterus. HUTER project will provide unprecedented insight at transcriptomic, genomic and spatial changes of this important female organ not only throughout the menstrual cycle but also across lifespan. The human uterus is a flagship reproductive organ with profound implications not only in reproduction but also in women's health. HUTER can advance the **Human Cell Atlas** initiative for the exploitation potential in Obstetrics and Gynaecology and biomedicine research areas such as Regenerative Medicine or Reproductive Medicine.

The uterus is itself a model for regenerative medicine since (i) endometrial tissue regenerates monthly and its transformation is executed through dynamic changes in states and interactions of multiple cell types, and (ii) myometrial tissue has remarkable regenerative capacity and extensive remodelling throughout pregnancy. Hence, the primary motivation from HUTER stems from the need to better understand the human uterus in order to more effectively address uterine diseases that impact women's health such as myomas or endometriosis and/or might contribute to infertility, infant and maternal mortality and morbidity.

HUTER technological and biological platform will be a crucial resource for the scientific and clinical communities to define the cellular basis of health and disease, allowing the rapid development of new diagnosis and prognosis tools and therapeutic advancements in the field.



ITS RELATION WITH THE HUMAN CELL ATLAS

The Human Cell Atlas (HCA) Project is an international collaborative effort that aims to define all human cell types in terms of distinctive molecular profiles (such as gene expression profiles) and to connect this information with classical cellular descriptions (such as location and morphology). An open comprehensive reference map of the molecular state of cells in healthy human tissues would propel the systematic study of physiological states, developmental trajectories, regulatory circuitry and interactions of cells, and provide a framework for understanding cellular dysregulation in human disease.

<https://www.humancellatlas.org>





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