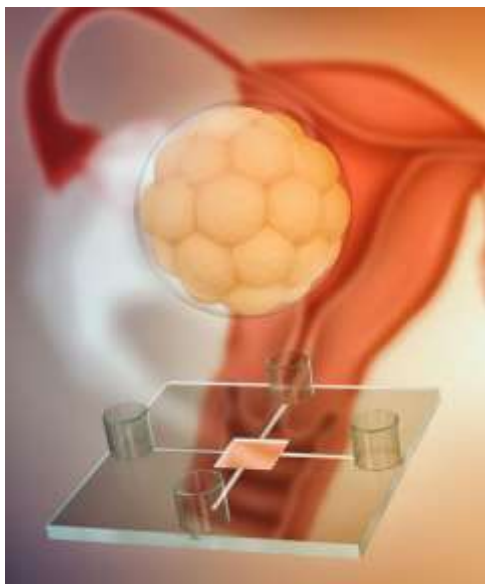


Café Scientifique Headingley

Monday 9 May 2022

Recreating a Micro-woman on a Chip

By Virginia Pensabene



Outline: Modelling human physiology is a basic requirement for scientific research and the pharmaceutical industry. It is needed to help understand specific functions of human organs, to test the efficacy of new therapeutics and to exclude unknown effects of toxins, such as environmental chemicals, stress, or pollution. Animals, dissected tissues, and cells are used for these purposes, but alternative tools and technologies have been introduced in the last decades to reduce the use of animals, and instead use in vitro culture systems, also called “chips”. These miniaturized systems allow the growth of patient derived cells under highly controlled conditions. Organ-on-a-chip models that mimic the lung, gut, kidney, heart and brain have been developed and are adopted by the FDA (U.S. Food and Drug Administration) and scientists for testing drugs and vaccines. In this talk, she will look at the potential of organ-on-a-chip technology to model the female reproductive system, consider the differences between animal models and human organs and provide examples of how this new technology is used in fertility studies and assisted reproductive technologies.

V. Pensabene is an Associate Professor of Electronics and Biomedical Engineering, working across the School of Electronic and Electrical Engineering at the University of Leeds and the School of Medicine at the Leeds Institute of Medical Research at St James’s University Hospital. She is sponsored by NC3Rs, MRC, and Research England, to develop innovative microfluidic system, micro and nanotools for In Vitro Fertilization. Before moving to Leeds as a European Marie Curie Fellow, she studied Electronic Engineering and completed her PhD in Humanoid Technologies at the Italian Institute of Technology (IIT) in Genoa and became a Postdoctoral Research Associate at the Biomedical Engineering Department at Vanderbilt University (USA), where she developed an organ-on-a-chip model of the blood brain barrier and carried out extensive work on the use of ultrathin films for suturing membranes after foetal surgery. Her US work was sponsored by the Environmental Protection Agency and the Veterans Affairs Department, for developing microfluidic models of women reproductive system for toxicology studies.

Venue: The New Headingley Club, 56 St Michael's Rd., Leeds LS6 3BG

Time: Room opens at 7:30; talk begins promptly at 7:45pm

Entry: Donation please for room hire and expenses: **£3 at the door**



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