Café des Sciences Boston #63: Organ-on-Chip at the WYSS Institute

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- **When:** Wednesday, April 23, 2014, from 6:00 pm to 8:30 pm
- **Where:** Résidence du Consul de France, 194 Brattle Street Cambridge, MA 02142
- **Presentation in French**
  - **Mandatory Registration** (limited seating): http://www.eventbrite.com/e/cafe-des-sciences-63-tickets-9128314033

Olivier Henry, researcher at the WYSS Institute will present the fantastic opportunities offered by the Organ-On-Chip project.

The paradigm used by pharmaceutical companies to discover and develop new drugs is broken. Clinical studies take years to complete and testing a single compound can cost more than $2 million. Meanwhile, innumerable animal lives are lost, and the process often fails to predict human responses because traditional animal models do not accurately mimic human physiology. For these reasons, the pharmaceutical industry needs alternative ways to screen drug candidates in the laboratory.

**The Wyss Solution**

Institute researchers and a multidisciplinary team of collaborators are engineering microchips that recapitulate the microarchitecture and functions of living organs, such as the lung, heart, and intestine. These microchips, called organs-on-chips, could one day form an accurate alternative to traditional animal testing. Each individual organ-on-chip is composed of a clear flexible polymer about the size of a computer memory stick that contains hollow microfluidic channels lined by living human cells. Because the microdevices are translucent, they provide a window into the inner workings of human organs.

**Lung-on-a-chip and Gut-on-a-chip**

Wyss Institute researchers and a multidisciplinary team of collaborators seek to build and link 10 human organs-on-chips to mimic whole body physiology. The system will incorporate the Institute's Human Lung-on-a-Chip and Human Gut-on-a-Chip.

The Wyss Institute team seeks to build ten different human organs-on-chips and link them together on an automated instrument to mimic whole-body physiology. The instrument will control fluid flow and cell viability while permitting real-time observation of the cultured tissues and analysis of complex biochemical functions. This instrumented "human-on-a-chip" will be used to rapidly assess responses to new drug candidates, providing critical information on their safety and efficacy.

For more information: http://wyss.harvard.edu/viewpage/461/

*After the presentation, wine & cheese will be provided by the Café’s partners.*