

INSTITUT D'ETUDES SCIENTIFIQUES DE CARGESE

Cargèse International School 2019

Fluids and Health 2019: Fluid Dynamics of Disease Transmission

July 23 - August 02, 2019

Website

Lydia BOUROUIBA

Massachusetts Institut of
Technology
Cambridge, US
lbouro@mit.edu

This summer school aims at providing participants high-level training on the fundamental processes and recent theoretical and methodological advances in the study of interfacial and complex flows as they pertain to health and environmental contamination.

The objective of these studies is the development of mitigation techniques and technologies for the protection against and management of infection outbreaks in human populations, food safety, and drug delivery management. Fundamental topics of this summer school will include fundamental physics topics such as: nonlinear dynamics and fluid fragmentation in Newtonian flows, complex and biological flows, methods in image processing, scaling methods, modeling of multiphase turbulent flow transport, fluid-pathogen interactions modeling and experimentation, experimental methods for the study of interfacial flows and fluid-organism interactions. Application topics will span respiratory and hospital infection control, drug delivery, dispersal and sprays in food safety and agriculture.

Traditional teachings on these subjects often treat a portion of the components of these problems and therefore do not prepare researchers to address them. In this context, the school will provide to junior researchers and faculty interested, an overview of these issues and techniques by internationally renowned specialists. Due to the vital relevance of these topics to societal applications and global health and food-safety in this century, various food safety and national or global health related agencies and relevant industrial partners will be involved in this summer school.

Eminent scientists in the field will animate the workshop. These include:

- Respiratory, nosocomial, and waterborne disease infection control
- Drug delivery
- Agriculture and food safety, from field to fork
- Fluid Dynamics and multi-scale modelling from nonlinear dynamics
- Fragmentation, multiphase turbulent flow transport and mixing
- Fluid-organism interactions at various scales

Scientific Committee

D. Aylor (Dept. of plant pathology and ecology, New Haven US), M. Gray (MIT EEC, Cambridge US), W. Jones (Office of Food Safety Silver Spring US), A. Pearlstein (Univ. of Illinois, Urbana-Champaign US), M. Trame (Univ. of Florida, US), B. Waller (Harvard Medical School US), J. Hugues (Emory Antibiotic Resistance Center, Atlanta US), J. Koseff (Stanford Univ US), H. Stone (Princeton Univ. US), E. Villermaux (Aix Marseille Univ. FR), J. Wu (York Univ. US)

Organization Committee

L. Bourouiba (MIT Cambridge US)

Application and registration

<https://fluids-health.org>

Contact : reply-to-fluids-health@mit.edu

Deadline Application : from 6th February to March 23st, 2019

Application deadline : May 15th 2019



MIT
International
Policy Lab



MISTI



Civil and
Environmental
Engineering



CAMBAM
Centre for Applied Mathematics
in Bioscience and Medicine

BURROUGHS
WELLCOME
FUND 

