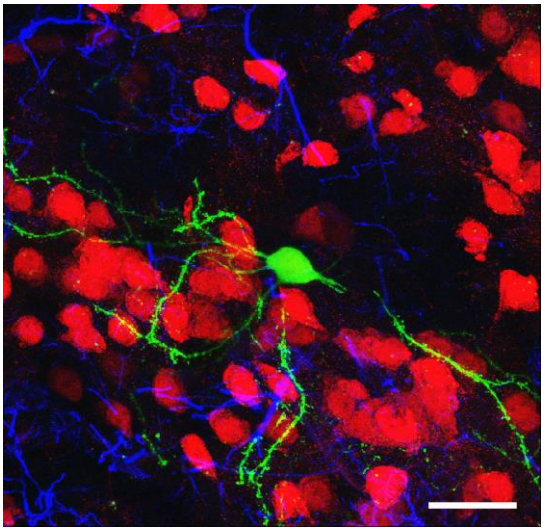
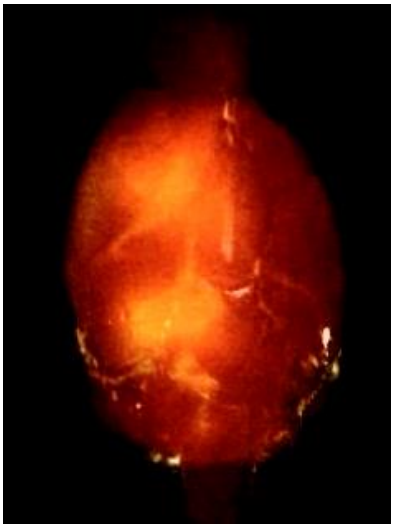


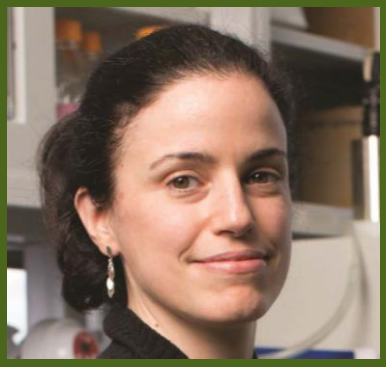


ELISA KONOFAGOU

SAFE AND LOCALIZED BLOOD-BRAIN BARRIER OPENING AND NEUROMODULATION USING FOCUSED ULTRASOUND

Current treatments of neurological and neurodegenerative diseases are limited due to the lack of a truly non-invasive, transient, and regionally selective brain drug delivery method. The brain is particularly difficult to deliver drugs to because of the blood-brain barrier (BBB). Over the past decade, methods that combine Focused Ultrasound (FUS) and microbubbles have been shown to offer the unique capability of noninvasively, locally and transiently open the BBB so as to treat central nervous system (CNS) diseases. Four of the main challenges that have been taken on by our group and discussed in this paper are: 1) assess its safety profile, 2) unveil the mechanism by which the BBB opens and closes, 3) control and predict the opened BBB properties and duration of the opening and 4) assess its potential in neurotherapeutics. All these challenges will be discussed, findings in both small (mice) and large (non-human primates) animals will be shown as well as its clinical potential. Our studies demonstrated the capability of FUS to modulate target specific regions in both the brain and the peripheral in vivo.

i3M seminar



Elisa Konofagou

Dept. of Biomedical Engineering and Dept. of Radiology, Columbia University, New York

DATE AND PLACE

26.06.2019 at 11.00

Salón de actos del cubo rojo

NEXT SEMINAR

The new seminar season will start in September 2019

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