From BigBrain to fMRI: the role of hemodynamic modeling

HIBALL meeting, 26 June 2020
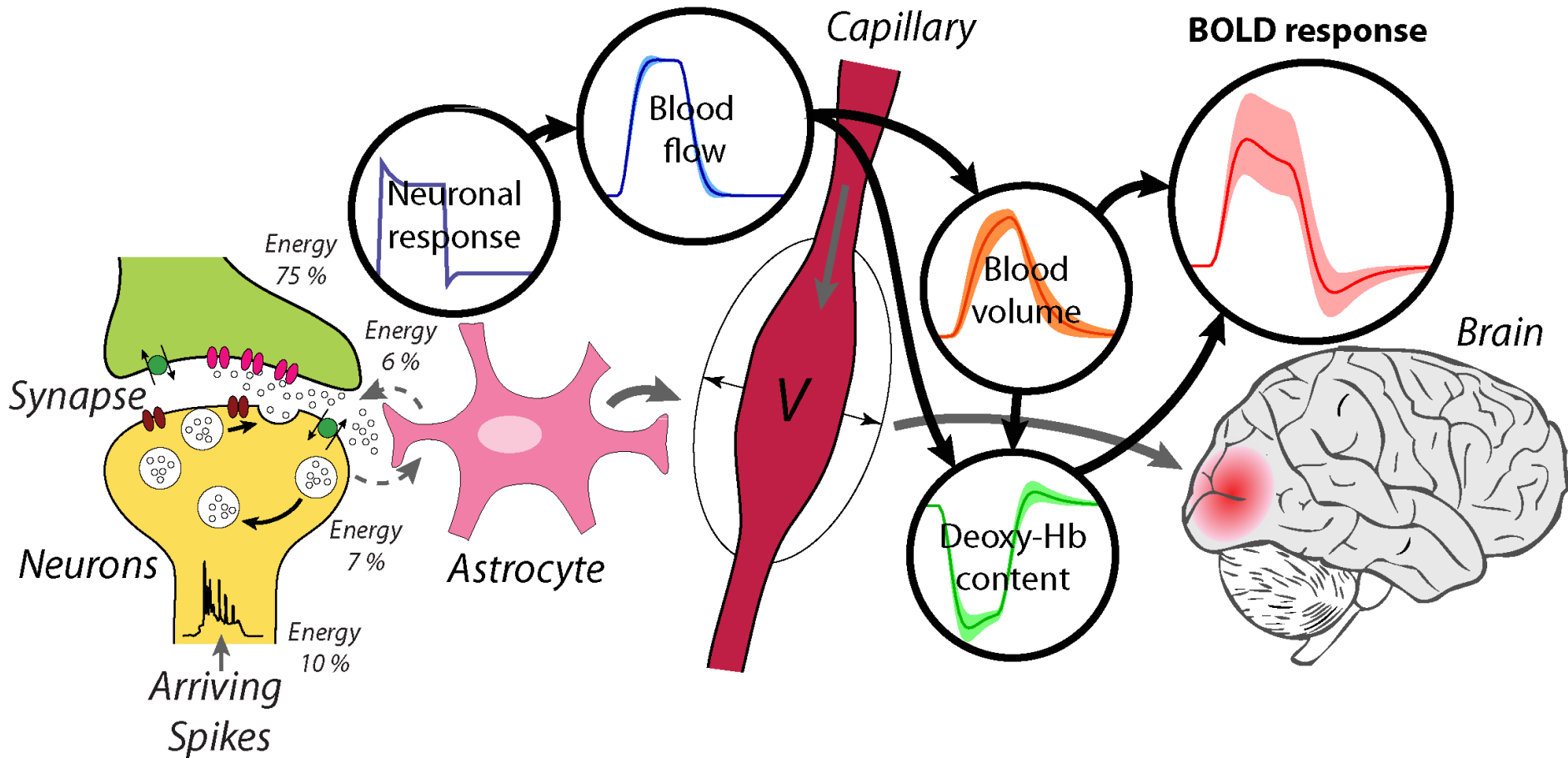
Kâmil Uludağ

Center for Neuroscience Imaging Research

Sungkyunkwan University & IBS, Suwon, Korea

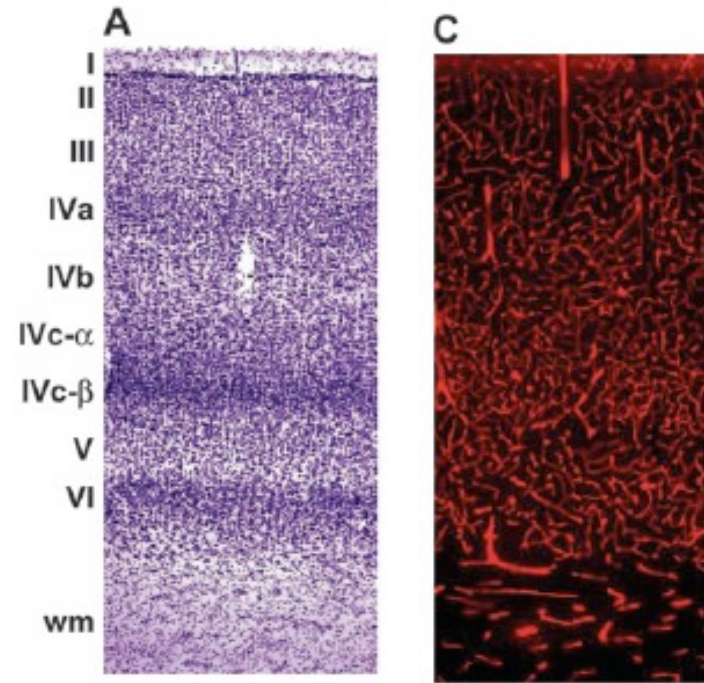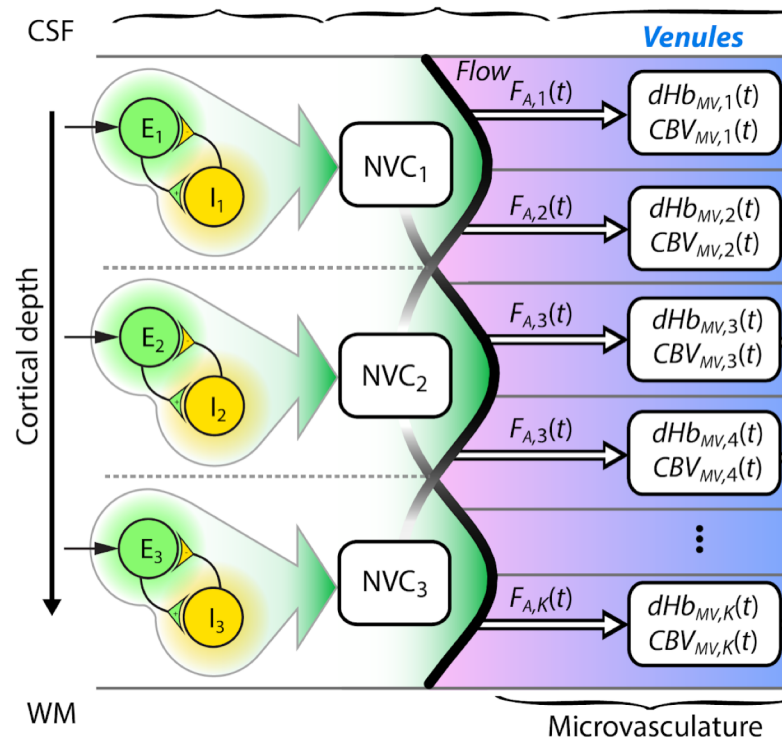**University Health Network**

Toronto, Canada

From neuronal response to fMRI data

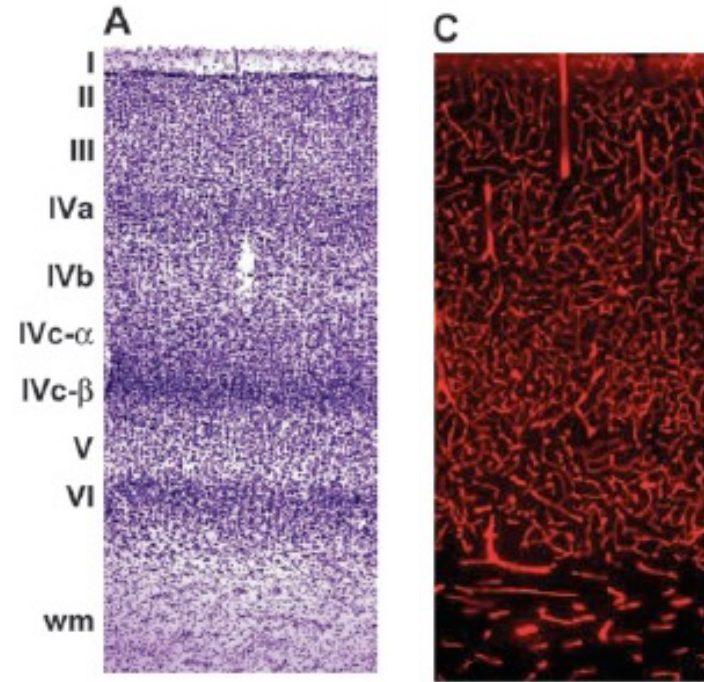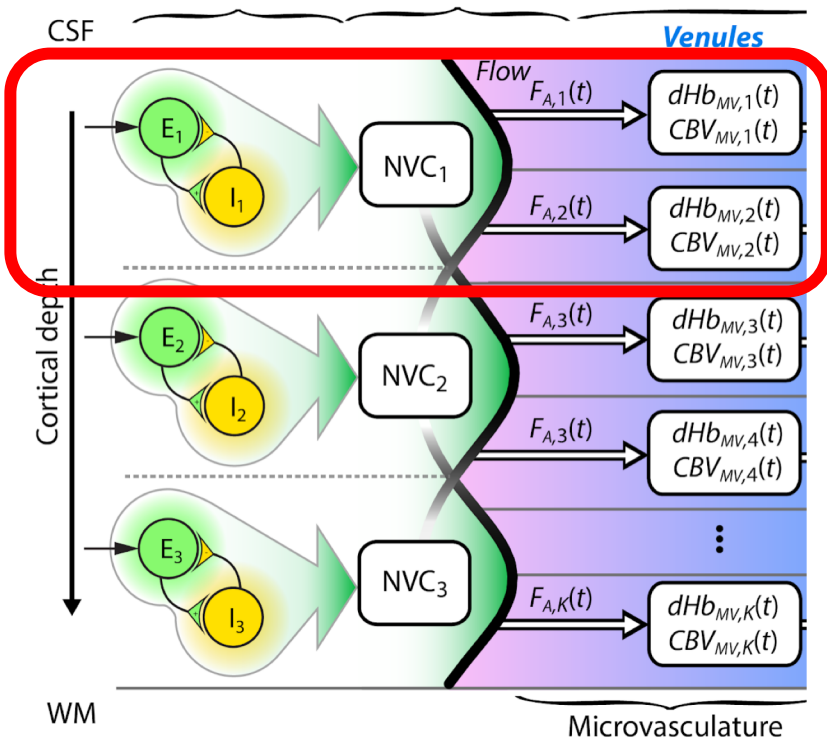Friston et al. 2003
Implemented in SPM & TVB

Havlicek et al. 2015, 2017
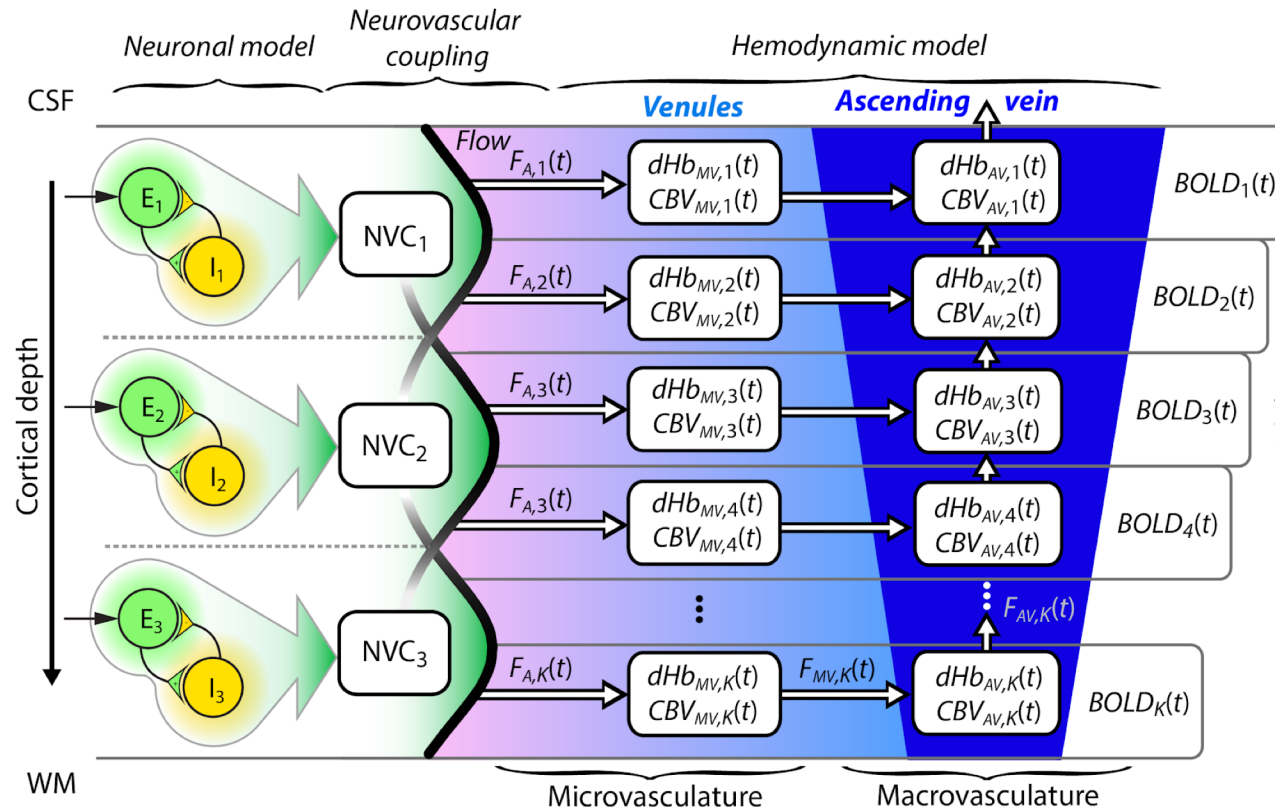
Dynamic laminar model

Weber & Logothetis, 2008
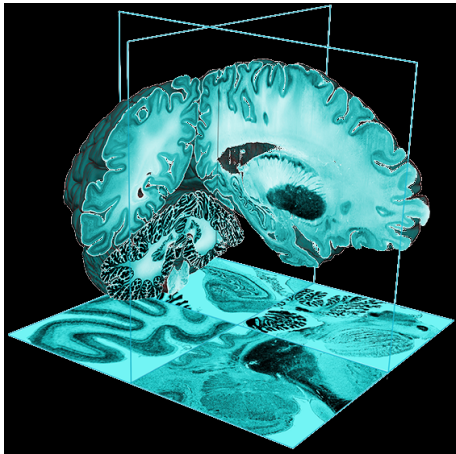
Dynamic laminar model

Weber & Logothetis, 2008
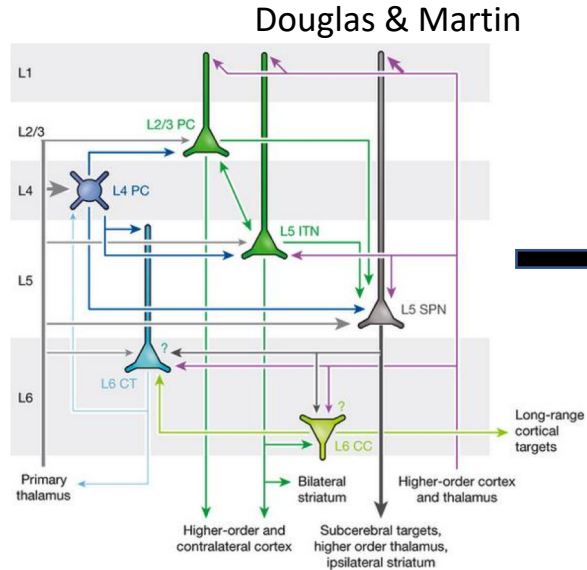
Dynamic laminar model

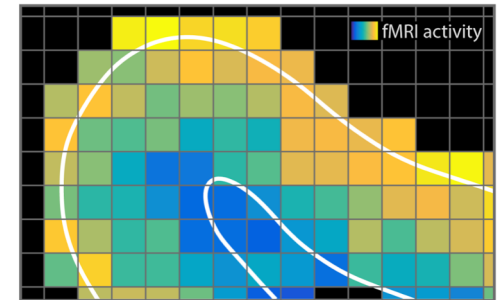Havlicek & Uludag, 2020

From BigBrain to Laminar fMRI

BigBrain

Regional Microcircuit model

Laminar fMRI model
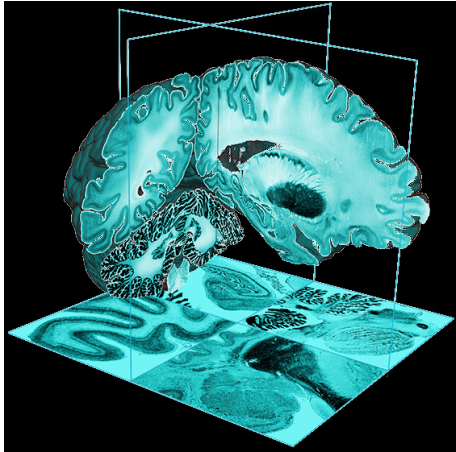

Douglas & Martin

+ Receptor-architecture …

+ vascular parameters
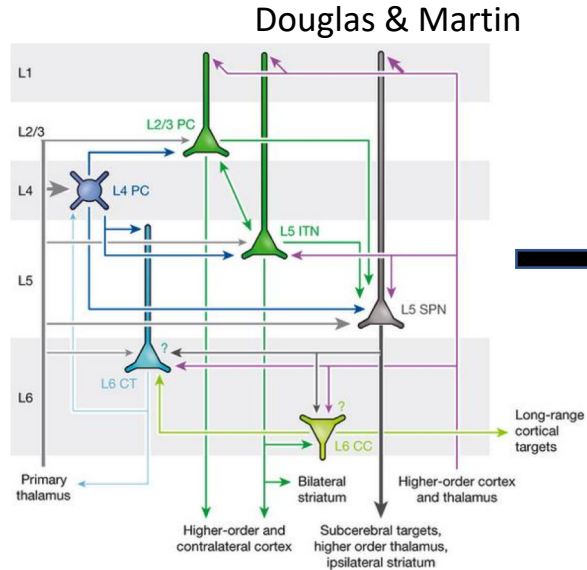**+ layer depth definitions**

From BigBrain to Laminar fMRI

BigBrain

+ Receptor-architecture ...

Regional Microcircuit model

Douglas & Martin

Bayesian model inversion

Laminar fMRI model

Laminar fMRI data

Thank you for your attention!