**2018 IMAG Futures Meeting – Moving Forward with the MSM Consortium (March 21-22, 2018)**

*Pre-Meeting Abstract Submission Form*

*\*Please submit to the NIBIB IMAG mailbox (*[NIBIBimag@mail.nih.gov](mailto:NIBIBimag@mail.nih.gov)*) by* ***January 8th, 2018***

*\*Save your abstract as “MSM PI Last Name \_ 2018 IMAG Futures Pre-Meeting Abstract”*

**PI(s) of MSM U01: Daniel Beard, Ghassan Kassab**

**Institution(s): University of Michigan, California Medical Innovations Institute**

**MSM U01 Grant Number:** Click or tap here to enter text.

**Title of Grant:** Coronary Blood Flow: Integrated Theory and Experiments

**Abstract**

Which MSM challenges are you addressing from the IMAG 2009 Report and how?

<https://www.imagwiki.nibib.nih.gov/content/2009-imag-futures-report-challenges>

(indicate which challenge (#) you’re addressing)

*You may insert images by copying and pasting below*

1, 9

Are you using machine learning and or causal inference methods and how?

*You may insert images by copying and pasting below*

No

Please briefly describe significant MSM achievements made (or expected).

*You may insert images by copying and pasting below*

We have developed a multi-scale modeling framework to simulate coronary vascular physiology, integrating cell-level phenomena (local metabolic demand and vascular smooth muscle physiology) and whole-organ cardiac mechancis. We have used this modeling framework to guide experiments to measure regional myocardial perfusion/demand matching in coronary stenosis, elucidating important mechanisms at play in regional control of myocardial blood flow.

Please suggest any new MSM challenges that should be addressed by the MSM Consortium moving forward.

*You may insert images by copying and pasting below*

Click or tap here to enter text.

What expertise are on your team (e.g. engineering, math, statistics, computer science, clinical, industry) and who?

*Please list as “Expertise – Name, email”*

Click or tap here to enter text.

*\*Save your abstract as “MSM PI Last Name \_ 2018 IMAG Futures Pre-Meeting Abstract”*

Click [here](mailto:NIBIBimag@mail.nih.gov) to email your form to the NIBIB IMAG mailbox