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Collaborating to Save Stem Cells

An interview with:

Professor Michael Laflamme | Heart Pathologist, University Health Network,
Medicine by Design, University of Toronto

Professor Hai-Ling Margaret Cheng | Biomedical Engineer, Ted Rogers Centre for
Heart Research, Medicine by Design, University of Toronto

Michael Laflamme: One of the great features of Medicine by Design is, it's sort of forced people out of their nests in a way. Collaboration is absolutely critical to these projects because nobody's got a solution to everything. And so, for example on our team focused on heart disease we have experts in basic developmental biology, stem cell biology, cell transplantation, imaging, genome editing – no one person can be an expert in all of those areas.

Hai-Ling Margaret Cheng: Dr. Laflamme, the one aspect that he's tackling in this particular Medicine by Design project, is to make sure that these cells not only grow to become new heart muscle, but that they also provide the right electrical conduction. Because this is what the heart does, it responds to electrical stimulus to give us the right rhythm. In my part of this collaborative project, our goal is to develop a new magnetic resonance imaging method that will allow us to see the cells once they are inside the body. So we would be able to see cells not with surgery, but with imaging.

Michael Laflamme: I'm focussed on the question: I think I know the therapy, I think we know where we want to go, but there are technologies that we need to apply to this problem, that I have no idea how to go about doing. And so, really what Medicine by Design allowed us to do is to reach out and get those experts.

Hai-Ling Margaret Cheng: He brings expertise from stem cell biology that I had no idea about. So it took me... I'm still learning about stem cell biology. It's a very tough field. But I also bring the perspective from imaging. Because I bring these new imaging technologies to the table, Mike can see applications for them that he had no idea before.

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Hai-Ling Margaret Cheng: You know sometimes it's really funny: when you work in a collaborative team, often it's the people who don't know much about the problem who can see a new solution, because they haven't had the opportunity to stare at a problem for a long time. And that's the energy that this Medicine by Design initiative really brings.