# 7TH ANNUAL SYMPOSIUM

Grand Questions in Regenerative Medicine

MEDICINE by DESIGN

## DECEMBER 8

**MaRS Auditorium, 101 College St., Toronto, ON**
**8:15 A.M. TO 5:30 P.M. EST**

### OPENING REMARKS

| | | | |
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| 08:15 | 08:25 | Welcome remarks | **Leah Cowen** – Vice-President, Research and Innovation, and Strategic Initiatives, and Professor, Department of Molecular Genetics, University of Toronto (U of T) |
| 08:25 | 08:35 | Opening remarks | **Michael Sefton** – Scientific Director, Medicine by Design, and University Professor, Department of Chemical Engineering & Applied Chemistry and Institute of Biomedical Engineering, U of T |

### SESSION 1: Outperforming nature: rejuvenation and synthetic biology

*Moderator: Maryam Faiz – Assistant Professor, Department of Surgery, U of T*

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| 08:35 | 09:05 | Stem cell aging and rejuvenation | **Dr. Thomas Rando** – Director, Broad Stem Cell Research Center, and Professor, Department of Neurology and Molecular, Cell, and Developmental Biology, University of California Los Angeles |
| 09:05 | 09:25 | How do you solve a problem like ischemia? | **Michael Garton** – Assistant Professor, Institute of Biomedical Engineering, U of T |
| 09:25 | 09:35 | origamiFISH: universal, label-free imaging of DNA nanodevices in cells and tissues | **Wendy Wang** – Postdoctoral Fellow, Institute of Biomedical Engineering, U of T |
| 09:35 | 09:55 | Accelerating the identification of skeletal muscle endogenous repair modulators | **Penney Gilbert** – Associate Professor, Institute of Biomedical Engineering, U of T |

**09:55 10:15 BREAK**

### SESSION 2: Deconstructing cell fate and morphogenesis

*Moderator: Jesse Gillis – Associate Professor, Department of Physiology, U of T*

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| 10:15 | 10:45 | New genomic technologies to deconstruct cell identity in reprogramming and development | **Samantha Morris** – Associate Professor, Department of Developmental Biology and Genetics, Washington University in St. Louis |
| 10:45 | 11:05 | Recording cell experiences to understand the rules of cellular programming | **Alison McGuigan** – Professor, Department of Chemical Engineering & Applied Chemistry, U of T |
| 11:05 | 11:15 | Genetically engineering single cells and clones in vivo to study tissue architecture and cancer initiation | **Katie Teng** – PhD Candidate, Lunenfeld-Tanenbaum Research Institute, Sinai Health System |
| 11:15 | 11:35 | Emerging biophysical rules of morphogenesis | **Dr. Sevan Hopyan** – Senior Scientist, Program in Developmental and Stem Cell Biology, The Hospital for Sick Children |

**11:35 1:00 LUNCH AND POSTER PRESENTATIONS**

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CANADA FIRST RESEARCH EXCELLENCE FUND

## KEYNOTE SPEAKER:

***Moderator: Gary Bader – Professor, Department of Molecular Genetics, U of T***

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| 01:00 | 01:30 | Cell atlases as roadmaps in development | **Aviv Regev** – Head and Executive Vice President, Genentech Research and Early Development, Genentech |

## SESSION 3: Decoding the epigenome

***Moderator: Chao Wang - Scientist, Biological Sciences Platform, Sunnybrook Health Sciences Centre***

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| 01:30 | 02:00 | Epigenome actuation - engineered protein regulators that translate the epigenetic code | **Karmella Haynes** – Assistant Professor, Wallace H. Coulter Department of Biomedical Engineering, Emory University |
| 02:00 | 02:20 | Stemness properties are encoded in the chromatin | **Mathieu Lupien** – Senior Scientist, Princess Margaret Cancer Centre, University Health Network (UHN) |
| 02:20 | 02:30 | The role of LINE1 in early human embryonic cell-fate transitions | **Juan Zhang** – Postdoctoral Fellow, Lunenfeld-Tanenbaum Research Institute, Sinai Health System |
| **02:30** | **02:50** | **BREAK** | |

## SESSION 4: Cell therapies for better outcomes and better access

***Moderator: Matthew Buechler – Assistant Professor, Department of Immunology, U of T***

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| 02:50 | 03:20 | Finding solutions to the challenges facing T-cell therapies for malignancy | **Cliona Rooney** – Director, Translational Research Laboratories, Center for Cell and Gene Therapy, and Professor, Department of Pediatrics, Baylor College of Medicine |
| 03:20 | 03:40 | The development of hardware and molecular technologies for improving access to cell therapies. | **Keith Pardee** – Associate Professor, Leslie Dan Faculty of Pharmacy, U of T |
| 03:40 | 03:50 | Exploring the cell therapy potential of human innate lymphoid cells to improve outcomes following haematopoietic stem cell transplant | **Kyle Reid** – PhD Candidate, Toronto General Hospital Research Institute, UHN |
| 03:50 | 04:10 | Harnessing post-transcriptional circuitries to advance hematopoietic stem cell-driven regenerative therapies | **Kristin Hope** – Senior Scientist, Princess Margaret Cancer Centre, UHN |
| **04:10** | **04:20** | **CLOSING REMARKS & POSTER AWARDS** | |
| **04:20** | **05:30** | **RECEPTION** | |

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