Department of
Biomedical Engineering
UNIVERSITY OF WISCONSIN–MADISON

Fall 2017 Seminar Series

Toward a Systems-Level Understanding of Stem Cell Fate

About the Speaker

Melissa Kinney

Postdoctoral Research Fellow in Hematology at Boston Children's Hospital & Harvard Medical School

Melissa earned her Ph.D. in 2014 from Georgia Institute of Technology & Emory University under the supervision of Dr. Todd McDevitt.

Dr. Kinney is an expert on the regulation of three-dimensional embryonic stem cell differentiation and morphogenesis by biophysical and biochemical signals. She is currently part of the Daley Laboratory at the Children's Hospital of Boston and Harvard Medical School where she is helping to build a better understanding of the biology, pathology, and clinical utility of hematopoietic and pluripotent stem cells and the role of various tissue stems cells in development and disease.

Stem cell-derived organoids promise broad translational potential for applications ranging from drug screening to transplantation and regeneration. These complex, and often functional, tissue-like structures arise largely from endogenous patterning and morphogenesis of pluripotent stem cells within three-dimensional spheroids. Our research efforts aim to control and perturb these processes through a quantitative understanding of stem cell fate dynamics and engineering of the biophysical spheroid microenvironment.

This seminar will present insights into the integration of extrinsic stimuli, cell intrinsic cues and signaling mechanisms, raising questions on how to establish design parameters and judiciously perturb these complex stem cell systems.

Tuesday, November 14, 2017
12:30 - 1:30 PM in 1153 Mechanical Engineering