



Human pancreas development and disease through the lens of pluripotent stem cells



My laboratory is interested in understanding pancreatic development and disease through applying genetic approaches in human pluripotent stem cells (hPSCs), including embryonic and induced pluripotent stem cells (hESCs and hiPSCs). Combining CRISPR/Cas-mediated gene editing and stem cell technologies, our reverse genetics approach has revealed the roles of key transcription factors pancreatic development and diabetes. Using the forward genetics approach, we performed the first genome-wide knockout screen for identification of developmental regulators. We identified novel genes that regulate the formation of definitive endoderm cells, which give rise to most pancreatic cells among other cells in the respiratory and digestive tract. Together our findings establish the use of hPSCs as a genetic model system for studying congenital defects and diabetes.

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Host: Dr. James Ellis

Date: Monday September 18th, 2017

Time: 4PM

Place: Room 103, Fitzgerald Building,
150 College Street