

Single cell multi-omic approaches to understanding heart development and disease

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Abstract:

Recent advances in single cell multi-omic technologies have transformed our ability to understand how individual cells contribute to whole organ responses in development and disease. Leveraging these technologies we have gained new insights in the biology of congenital heart disease and in fetal and neonatal cardiomyocyte proliferation. We have also utilized single cell transcriptomic technology to identify new markers in the cardiac conduction system and new immune cell populations involved in cardiotoxicity from immune checkpoint inhibitor treatment of cancers. This seminar will highlight ways to gain greater insights into cardiac disease mechanisms by incorporating various single cell multi-omic tools.