Hamilton Institute

Programming stem cells: modeling stem cell dynamics and organ development

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Abstract:
In recent years, we have used software engineering tools to develop reactive models to simulate and analyze the development of organs. The modeled systems embody highly complex and dynamic processes, by which a set of precursor stem cells proliferate, differentiate and move, to form a functioning tissue. Three organs from diverse evolutionary organisms have been thus modeled: the mouse pancreas, the *C. elegans* gonad, and partial rodent brain development. Analysis and execution of the models provided dynamic representation of the development, anticipated known experimental results and proposed novel testable predictions. In my talk, I will l discuss challenges, goals and achievement in this direction in science.

Venue: Seminar Room, Hamilton Institute, Science Building, NUI Maynooth

Time: 2.00pm - 3.00pm (followed by tea/coffee)

Travel directions are available at www.hamilton.ie

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