

Project 3 :

Modelling transport of reactive solutes in a multi-scale computational model of the kidney.

Background:

This project is part of a larger project where we are using a systems approach to build a model of an entire kidney by modelling individual kidney units (nephrons) and their interactions.

Our current implementation models the filtration of three *non-reactive* molecules within the renal system.

Goal:

The goal of this project is to extend the existing multi-nephron model to take into account the transport of *reactive* solutes within individual nephrons.

Scope and timelines:

The project is suitable for a 25-point project, and could be extended to a larger project.

The following stages are required: literature review; proposal of implementation; implementation and demonstration of the system.

Student:

The project would suit a student with a strong computer science background and experience or an interest in learning C++.