

**Interactive Graphics**

**P5 Simulation**

**Stephen Moran**

N00162766

**Lecturer**

John Montayne

**B.Sc. [Hons] in Creative Computing**

Dun Laoghaire Institute of Art, Design and Technology

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# **Aim**

The aim of this project was to design and develop a natural molecule simulation in Javascript using the P5 library. The simulation consists of three molecules, a healthy molecule, an infected molecule and an immune molecule. The idea was to develop a way for the molecules to move around within the canvas. This would be done by creating an algorithm that enables the molecules to bounce off the edges of the canvas and also an algorithm to detect collision between each molecule. This was important as another feature set out at the beginning was for the ability of an infected molecule to infect healthy molecules based on a probability.

Other functionality within the simulation was for it to include interactivity. This would be created by adding a controller that displays different slider menus allowing users to change certain elements within the simulation such as the size of the molecules and how many of each molecules should appear on the screen when loaded. The last feature was for the user to be able to delete infected molecules by clicking these molecules with the mouse.

# **Problems**

Overall most of the requirements outlined above were achieved. Some difficulties arose with the collision detection algorithm. Every time the page loaded, some molecules were already overlapping and this caused a jittery effect and sometimes not separating.