

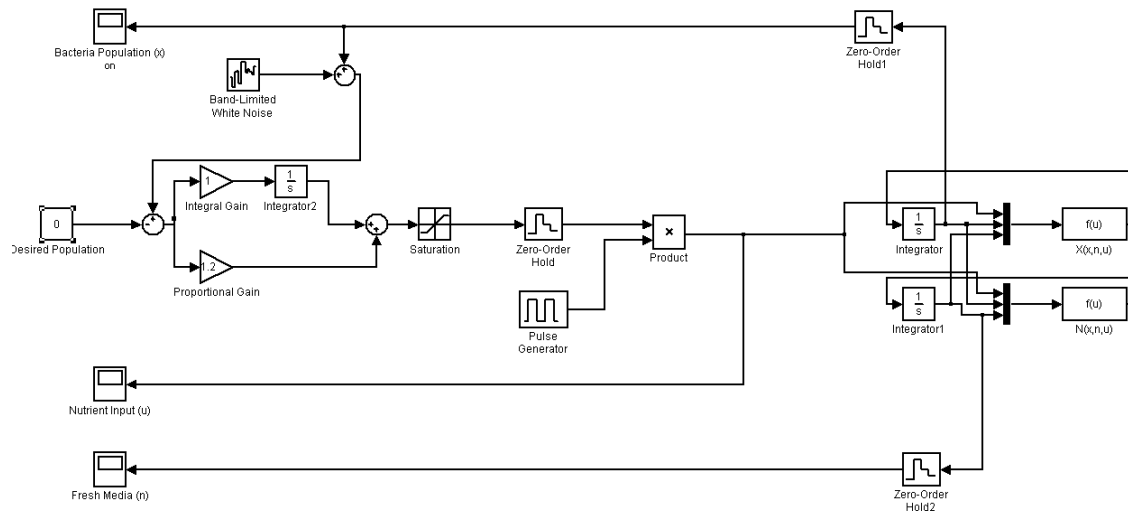


Figure 1: Simulink Model with Discrete Characteristics

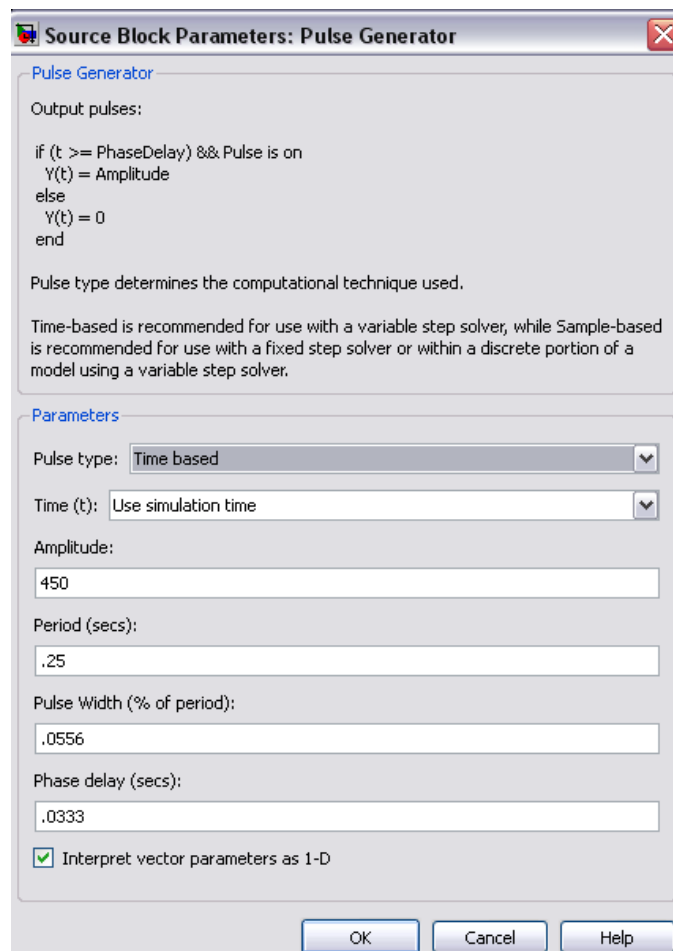


Figure 2: Pulse generator on controller output u

Amplitude = T / T_{on} = Period / Time on of period, $900 / 2 \text{ sec} = 450$

Period is 15 min. Units on simulation are relative to hours but simulink reads them as seconds. This was the mistake made in the presentation that I was not aware of.

Pulse Width is .0556% or about 2 seconds of period.

Phase delay is 2 min (not sure about this yet since we haven't finished the hardware)

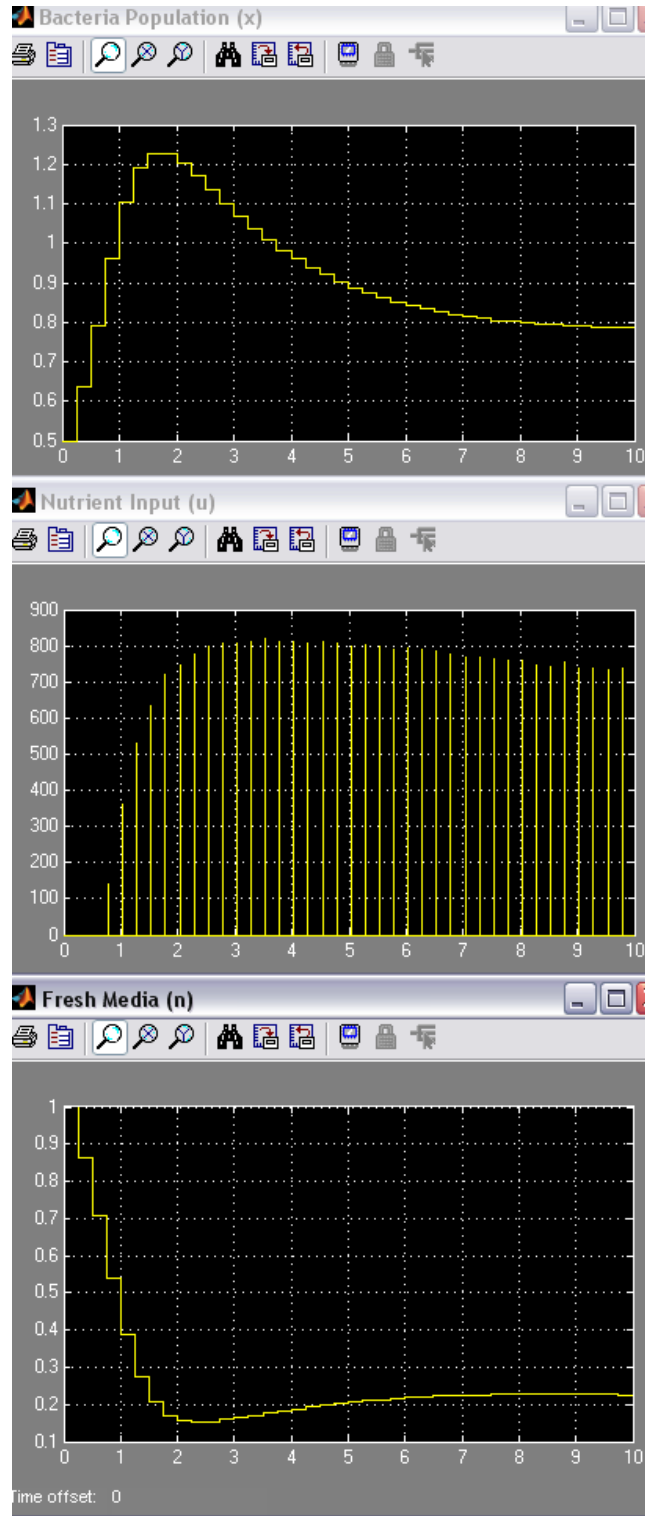


Figure 3: Simulations when desired population is 0.8

You can see the impulses which is what our system will be doing with the pipette mechanism