Tissue Engineered Test Bed

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Background

- What is cell culture?
  - Promoting cell growth for research
    - Drug delivery
    - Studying diseases
    - Gene Therapy

- What is the problem
  - Cells die easily
    - pH, temperature, etc
Goal

● Efficient cell culture
  ○ Less time
  ○ Less contamination
  ○ Cost effective

● Real time monitoring
  ○ pH
  ○ Temperature
  ○ Concentration
  ○ Viscosity
Approach

Tissue engineering test bed

- Small tank with several bioreactors to eliminate waste and bring nutrients
- Underwater microscope and mass balance scale
- Probes
  - pH
  - Temperature
  - Viscosity
  - Concentration
What CS Would Do

- Arduino
  - Main program for sensors

- Matlab
  - For controls

- LabView
  - To create commands
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