* Two monitors:
  + Monitor #1: Hepatic and Portal pressures and flows graphs
    - Hepatic artery MAP >= 65, pulsatile @ 65 bpm
    - IVC 0-2 mmHg
    - IVC pressure won’t be graphed; visualize somewhere else
    - Sliders for all graphs are ideal; default should be to show readings from the last hour
    - Last data point on graph should be a bubble with a number in it for easy visualization; or perhaps put this in a sidebar
      * Value may change a lot based on sampling rate; average of last X seconds/minute? What happens when an intervention is made?
    - Mark places where vasoactive substances were administered; different colors for suppressors and dilators; on both pressure and flow graphs
    - Integrated in these graphs: read out of the pump speed (maybe a sidebar in next to the graph or something)
    - Will dialysis be integrated or manual?
      * We do have a pump; need a datasheet; hopefully it will be integrated; only have control of the pump; maybe don’t have sensors
      * Pump draws from blood reservoir into dialysis
    - All graphs: bounds on y axis to demarcate physiologic ranges
  + Monitor #2: All Chemical substances
    - SpO2: PV oxygen = graph; HA oxygen = just update with current value; calculate difference in O2 before/after liver to get O2 consumption
      * Single sensor w/valve control system; perhaps may be a delay between readings @ different places? So might have to average; talk to Dr. Hernandez to see how frequently this needs to be done
    - Temperature: No graph; just display value
    - pH/CO2: One graph w/two y axes; or perhaps two separate graphs based on space requirements;
      * CO2 tension adapted to maintain pH 7.25 - 7.45
    - Glucose, Insulin
      * Plot of glucose over time with the option to select a plot specifically for glucose changes since last administration of insulin. Timing of insulin doses should also be demarcated (insulin resistance can be a marker of downtrend in health)
      * Log of # of insulin injections/amount administered; same for glucagon/glucose; is the amount of insulin administered all the same, or is this variable based on the degree of hyperglycemia?
    - See gas mix ratios if possible (if we can integrate w/gas mixer)
* Changing parameters
  + Basic settings: sliders with the capability to type in numbers too;
  + On both monitors: have a second tab that displays all the parameters in slider form for changes
* Alarms
  + Thresholds:
    - 0-10% out of range: Banner alert on monitor: “X parameter is out of range”; beep/minute with option to silence w/out remedy (think of ways to prevent repeated alerts for out of range values; “for next X minutes ignore this out of range value”)
      * Banner should have buttons for “ignore,” “accept” that takes you straight to 2nd/3rd tab, etc.
      * Time spent out of range before an alert is triggered?
      * Will alerts automatically disappear if values fall back into range?
      * If you ignore, how long until the alert triggers again?
    - >10% out of range: Banner alert, consistent beeping with option for silencing
    - Alert ranges for each parameter should be modifiable mid-run; this will be on a third tab where all parameters are listed, the current acceptable range, and the option to change them; should incorporate a “reset to default” button

Dialysis flows

* + Hepatic artery pulse
  + RPM vs. flow rate; units we want to specify in
* Min time needed b/t insulin injections; maximum time to wait before we have to override the signal manually; timeframes where we expect a result
  + 5 minutes? Will look into this.
* Parameters for certain things; what we want to do/what activates it
  + Oxygen tension 10-12 kPa