Advanced Computer-Integrated Surgery (CIS II)
Controlled-Monitored-Therapeutic VR environment for post-surgical pediatric critical care

- The pediatric intensive care unit (PICU) is a noisy, noxious, stressful environment which impedes rather than promotes recovery. To maintain “calm”, children are often sedated with multiple drugs (sometimes for weeks) from which significant morbidity is common.
- We believe it is feasible to create a VR “bubble” which could control visual, auditory and olfactory inputs, monitor novel physiological responses and treat children’s anxiety with significantly fewer drugs.

**What Students Will Do:**
- Meet with domain mentors to develop design specifications for the bubble
- Research logic behind each design choice
- Develop project priorities to create a prototype during the course
- Create plan for future features

**Deliverables:**
- A prototype

**Size group:** 3 students

**Skills:** Materials Engineering, VR development, MatLab for physiological data manipulation, Software development

**Mentors:** Jim Fackler (jim@jhmi.edu) and Sapna Kudchadkar (sapna@jhmi.edu) PICU faculty

There is a child here. (from the JHH PICU)

This plexiglass box is current “state-of-the-art” for infant environment “improvement”.

This is a VR dome for a crowd. *We need to build one for a single infant.*