Subject: Biomedical Engineering Projects in IED Sections

As per discussions with Dr. Eric Ledet in the BMED we have identified the following 5 projects suitable for IED projects: (The first 3 are general BME design projects in nature and the Last 2 could be for general US markets however are considered for Under resourced environments found in 3rd world health care needs category) These problem statements & limitations can be flushed out with more detail as needed.

Suggested general BME design oriented projects:

1. Feeding- Assist pump; intended for Centers for disabilities (adjacent to St. Peter’s Hospital); specifically disabled children who are bound by large feeding assist equipment. Intent is for feeding tubes/assembly and 0.5-1 L feeding bags to be portable in nature for exercise and/or physical therapy. Time duration of 1-2 hours acceptable. Can provide more specifics & contacts.
2. Oxygen tubing “smart-reel” system intended for primary home use and secondary portable use (i.e. golfing with portable O2 tank remaining in golf cart) Intent is to have an O2 reel-system that can be attached to portable O2 tanks or home scavenger units that has more control than tensioned extension cords. Can provide more specifics & individual contact.
3. Ergonomic violin shoulder assist device that negates lateral flexion or neck; however does not impact sound acoustics of violin. Bone/ligament/and cartilage issues arise with repeated rotation and flexion.

Suggested Under resourced environments Health clinic needs BME design oriented projects:

1. System to monitor Neo-Natal movement for assessing health progression (does Neo-Nate move and how often: designated for 3rd world style incubator hospital clinics.
2. Method of keeping Neo-Nates cool in tropical environments. Simple fan is undesirable. Controlled temperature during monitoring is desired.