

## Senior Design Project Description for FALL 2016

### Project Title: Automated Non-invasive Doppler BP Device (CHS\_BP)

Supporter: Carolinas HealthCare System

Supporter Technical Representative: ASSIGNED

Faculty Mentor:  ASSIGNED  TBD (check one)

Single Team  Dual Team  (check one)

Personnel (EN/ET): 2 E,      Cp,      Cv, 2 M,      SE

(Complete if the number of students required is known)

Expected person-hours: (250 per student)

#### Description of Project:

Blood pressure (BP) is one of the 5 vital signs in patient care. It is dynamic. There is a big need for accurate and immediate BP monitoring in operative and critically-ill patients. There are limitations to current BP technology. A proof of concept has been developed. This project is to address any limitations by upgrading the proof of concept to a prototype.

#### Initial Project Requirements (e.g. weight, size, etc.):

The blood pressure device requirements are:

- Non-invasive
- Automatically inflate and deflate the BP per software algorithm
- Doppler to “listen” to radial arterial pulse waves
- Provide auditory feedback to clinician or healthcare provider
- Experience similar to the standard automatic BP cuff to the patient
- Prototype design to address any limitations in the proof of concept

#### Expected Deliverables/Results:

Prototype that has been fabricated and tested.

#### List here any specific skills or knowledge needed or suggested (If none please state none):

This project is an approved Bioengineering project