## BME 484 Biomedical Engineering Capstone Design Project Proposal

Project Title: Pain Detector

- <u>Team:</u> Rachel Bellisle, Project Manager John McLinden, Hardware Engineer Jessika Decker, Software Engineer
- <u>Abstract:</u> Our project is to develop a pain detector for use in individuals who lack the ability to communicate their pain level. Our objective is to create a more objective and quantitative method to evaluate pain. An algorithm will be implemented to process a number of inputs, including image/video of the user's face and ECG. By inputting this information, we will determine the level of pain that an individual is experiencing and sound an alarm or notification if necessary.
- Innovation: In our project, we will use a smartphone platform for pain recognition and allow for notification of a caregiver in a painful situation. The caregiver can receive a more quantitative assessment of pain level, based on image processing and ECG inputs
- <u>Materials:</u> We plan to use an android app for the basis of our project. This will require a android device, which one teammate already owns, and our breadboard with the PIC processor. We will also be using Android Studio for java programming and C++ in MPlab.
- Subtasks:Create algorithm and method for image processing<br/>Modify Android App<br/>Modify hardware and C++ code<br/>Develop and execute sufficient tests for the system

BME Capstone Design General Timeline		Fall Semester											Winter Break					Spring Semester																	
	09/11/17	09/18/17	09/25/17	10/02/17	10/09/17	10/16/17	10/23/17	10/30/17	11/06/17	11/13/17	11/20/17	11/27/17	12/04/17	12/11/17	12/18/17	12/25/17	01/01/18	01/08/18	01/15/18	01/22/18	01/29/18	02/05/18	02/12/18	02/19/18	02/26/18	03/05/18	03/12/18	03/19/18	03/26/18	04/02/18	04/09/18	04/16/18	04/23/18	04/30/18	05/07/18
1. Team & topic																																			
2. Design		ans.	and a second																																
3. IRB application (if applicable)																																			
4. Mid-year progress report									2																										
5. Project prototype																																			
6. Testing & improvement																																			
7. NEBEC Conference paper															0.550																				
8. Grant proposal (TBA)																																			
9. NEBEC Conference (TBA)																																			
10. Final Report																																			

## Timeline:

## References:

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