Progress as of November 15th

Our previous goals were focused on creating and training our neural net for integration into a final app. We also wanted to continue our literature review and updating our website so that all of our team members can easily track what we have been doing week to week and what tasks are still outstanding. The literature review is necessary for understanding the different methods that already exist relative to each aspect of our project so that we can use previous methods to enhance our progress to date.

We were able to meet with our project sponsor, Dr. Kumar, to discuss ways that we can go about sharing images from the clinic for use in training our neural net. Our team assigned different aspects of the literature review to individual team members so that each member was responsible for smaller aspects of the literature review. Major focus areas of the literature review include user interface organization, tensor flow and neural nets, and different treatment processes for different burn types/degrees.

Our meeting with Dr. Kumar focused on the following information:
Flow chart of treatment processes
Primary survey: observe head to toe
Confounders: soot, debris, dirt.
Vital signs, non-threatening
Assess which areas are damaged
Control setting: after everything is washed off
4:1 fluid resuscitation
Time of burn
IV access (visible/unburned veins)

Important parameters to know (within the first hour)
- Hemodynamics (HR, BP, MAP) [65-10mmHg] (MAP-VP = perfusion pressure)
- Urine output (hourly)(by urinary catheter)
- Lactic Acid (accumulation from anaerobic metabolism)
- Hemoglobin (30mg/dL and dropping)
- Arterial blood gas(O_2, CO_2, PH, lactic acid, glucose)
- Carbon monoxide level: CO-oximetery
- Bronchoscopy or looking down the mouth to check for internal burns (epiglottis, mucosa, trachea rings)
- Which fluids you are perfusing them with

Parameters that change after 1st hour
- Keep doing hourly lab checks
- Don't stop decision making process if no hourly check
- Hemoglobin (every 8 hours)

Criteria for transfer: Determine where they need to go
Dr. Kumar will send us the criteria
List of burn centers on American Association

We have been updating our website weekly with a log of what has been accomplished so that all of our team members can see what work is still outstanding before moving onto a different task. This helps to ensure that each team member is adhering to our project timeline so that all deadlines are met.

We are still struggling with obtaining large quantities of diagnostic images that are necessary for training the neural net. Since this is the most intricate portion of how the app will run, a large data set is necessary to accurately train the diagnostic portion of the app.

Dr. Kumar has said that he would help us obtain more relevant literature on different treatment methods so that we have a better understanding of the treatment processes. We are also currently looking into different ways that we can protect patient data with the use of our device.

Once we receive the images, we are hoping to begin development of our neural net. We are also planning to draft and revise a comprehensive flow chart of treatment process that we can share with Dr. Kumar once we return from school. He has said that he will share more literature with us related to current treatment processes.