**Lab 5: Title**

**Your Name**

Your Major

Your Minor or Second Major (if applicable)

**ABSTRACT**

The usual stuff.

**METHODS**

1. Include a figure showing a system block diagram of the entire blood pressure measurement system. Your diagram must include blocks for the *measurand*, *sensor*, *signal conditioning*, *data acquisition*, *signal processing*, and *display*. **The label for each block must include the basic function and the specific implementation**. For example, the *sensor* block should contain the text “Pressure cuff and sensor”.
2. Include calculations (e.g. from PreLab) to explain why a gain resistor value of RG = 270 ohm was used for the first instrumentation amplifier. You do not need to show all work – just show the important formulas, resulting values, and describe the rationale for choosing RG = 270 ohm. It is very strongly preferred that you type your calculations.

**EXPERIMENTS AND RESULTS**

1. Arduino code: Briefly describe what your Arduino program was supposed to do.
2. MATLAB code:
   * Include the equation that converts the measured voltage into pressure. What was the value of your Ad, S (in V/mmHg), and Vref?
   * Briefly explain the signal processing steps to obtain your MAP.
3. Include the figure of your blood pressure measurement. What was your MAP?

**DISCUSSION**

This section is where you take a step back and discuss if your results make any sense. In particular,

1. Did your blood pressure measurement produce a reasonably clean trace, and was the resulting mean arterial pressure reasonable (between 80 and 100 mmHg)? If not, describe some possible reasons why the measurement didn’t go as well as you had hoped.
2. Based on your experience with this lab, describe two practical issues (e.g. regarding the patient, electronics, cuff, etc.) when designing an automated oscillometric system that can potentially prevent an accurate MAP reading?

**CONCLUSIONS**

This section is not simply “my setup worked”. **You must also write about the concepts or any valuable lessons you learned in the lab.** If possible, discuss how they relate to other aspects of the course or to the general field of biomedical instrumentation.

**REFERENCES (OPTIONAL)**

[1] Citation details (e.g. website info) go here.