**Low-cost and modular gradient control system for MRI studies (MRI Probe)**

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**Team:** Neal Haas (BSAC)
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Luisa Meyer (BWIG)

**Progress Report for Week 9: October 31 – November 6**

**Problem Statement:**

This project is part of a larger goal to build a low-cost and modular MRI system for testing of novel multi-mode intravascular MRI probes with tracking, imaging and RF ablation capabilities. This component of the project will involve the designing, simulating, building, and testing of gradient coils to function with the system. The system will form an essential part of a low-cost MRI system.

**Last Week's Goals:**

- Construct Probe stand/experimental setup
- Begin to validate results of simulations.

**Summary of Accomplishments**

- Negotiated access to engineering shop for remainder of semester on old passes should have most of the work needed to be done in the shop completed soon, though.
- The parts for the probe stand have been machined and only need to be assembled. We will need acrylic glue and several aferrous screws from the electronics lab to complete construction.
- The MATLAB script is getting more versatile, and can now map a field's magnitude across a plane of analysis.
- Annie has finished shop certification, just needs in shop training for full access

**This Week's Goals**

- Complete probe stand and begin testing on basic coils. First step, single ring of wire wrapped around a circular former.
    - This will help us to define our experimental protocol
- Begin prototyping of potential coiling patterns – test design concepts.

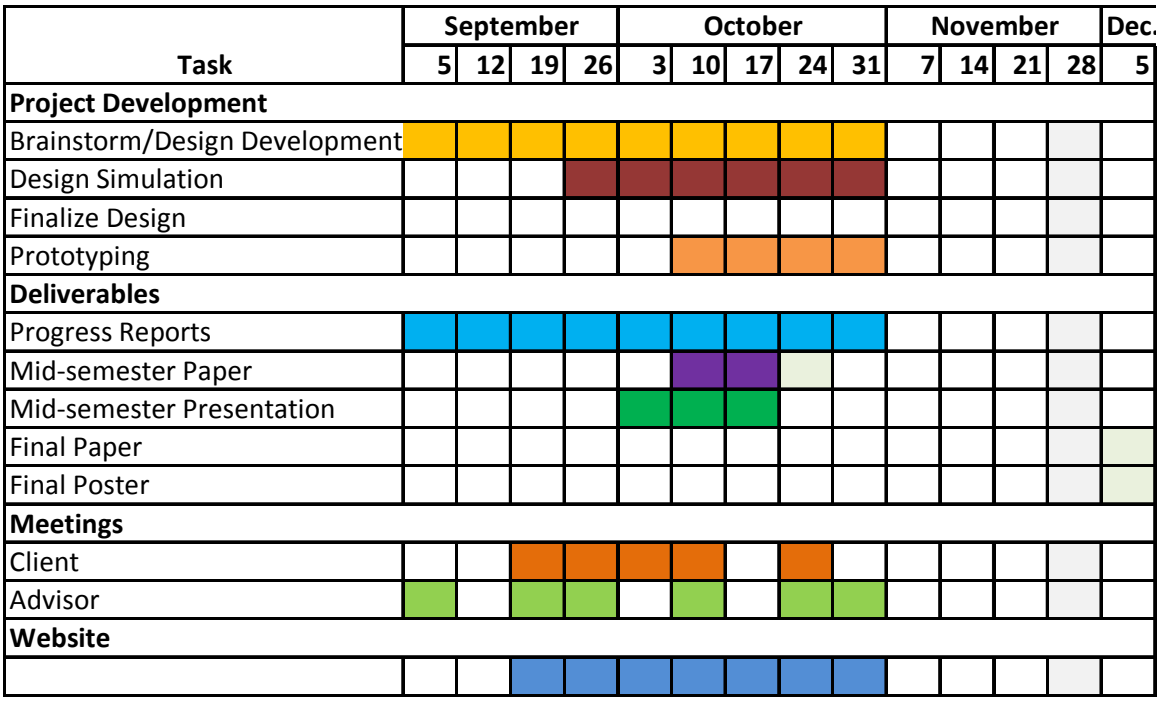
**Project Difficulties:**

The threaded rod is not as stiff as expected. This allows for a fairly significant transfer of vibration through the rod. It may still be sufficient for the stand, but we will only be able to tell once we begin testing.

**Team Activities**

| Members | Activity | Time Spent | Total |
|---|---|---|---|
| Team | Team Meeting, Advisor Meeting, Machining of Stand parts | 4.00 hr. | 25.00 hr. |
| Peter | MATLAB Work, Progress Report | 1.00 hr. | 16.50 hr. |
| Neal | | | 10.25 hr. |
| Annie | Correspondence, shop application/certification training | 1.50 hr. | 13.75 hr. |
| Luisa | Filing of parts for stand | 3.50 hr. | 17.00 hr. |

**Project Timeline**




**Expenses**

First Order of construction parts costs to be added soon.