

NEUROTOUCH MEETING MINUTES

12 September 2016

First Team Meeting

Attendance:

1. Brendan Souvenir
2. Christina Gibbs
3. Brooke Deans
4. Matt Harlow
5. Mazen Aljawi

Start Time: 8:02 AM

Location: EP 414

OLD BUSINESS:

Team Meeting

Mondays @ 8:00 AM – EP414

Instructor Meeting

Thursdays @ 4:00 PM – GJ 108

Client Meeting

When needed.

Team Information

Instructor: Dev Shrestha devs@uidaho.edu

Clients:

1. Michael Maughan, maughan@uidaho.edu
2. Bryn Martin, brynm@uidaho.edu

Members:

1. Brendan Souvenir, souv3985@vandals.uidaho.edu
2. Brooke Deans, dean6428@vandals.uidaho.edu
3. Christina Gibbs, gibb6751@vandals.uidaho.edu
4. Matt Harlow, harl2231@vandals.uidaho.edu
5. Mazen Aljawi, alja6544@vandals.uidaho.edu

CURRENT BUSINESS

1. Introductions:
 - a. school year, current fall credits, jobs/hobbies/clubs, hometown, and favorite past weekend activity.
2. Project Definition
 - a. Focus on needs and constraints.

- b. Why do we need this device? What problems do we need to address?
What does our device need? What would we like it to have?
 - c. Who can help?
 - i. Which Faculty? Which doctors? What resources?
- 3. Meeting Time:
 - a. Created a doodle poll to establish team availability
 - i. decided: 8:00 AM Mondays.
- 4. Team Contract:
 - a. Completed Team Contract and uploaded file on Google Drive.
 - b. Emailed current copy to Dev Shresthra.

Meeting Adjourned: 9:20 AM

Start Time: 4:41 PM

MEETING CONTINUATION

CURRENT BUSINESS

- 1. Brainstorming:
 - a. Each member took 5 minutes to jot and sketch ideas of what our device should have and include.
 - i. Ultrasonic measurements
 - ii. Gear and potentiometer
 - iii. Spring and force sensor
 - iv. Sensors on the inventor
 - v. Handheld
 - vi. Angle compensation
 - b. Afterwards, we shared our ideas and concerns with each purposed concept. Including: functional performance, human factors/interface, physical requirements, reliability, life-cycle use, and manufacturing hardware, and establishing software requirements.

FUTURE BUSINESS

- 1. Continue project learning and project research in areas of biological, mechanical, and electrical.
- 2. Focus on questions that need answering from Dev and Mike.
- 3. Team bonding activities.

Meeting Adjourned: 5:23 PM

NEUROTOUCH MEETING MINUTES

15 September 2016

Instructor Meeting

Attendance:

Team:

1. Brendan Souvenir
2. Christina Gibbs
3. Brooke Deans
4. Matt Harlow
5. Mazen Aljawi

Professor: Dev Shrestha

Client: Mike Maughan

Start Time: 4:00 PM

Location: JML 82

CURRENT BUSINESS

Project Road Map:

- Dev walked team through the expectations and To-Do's of Senior Design Project.

Key Topics:

- Set team meeting times.
- Set client interview time.
- Personal documentation & team documentation.
- Machine shop usage, rules, & expectations.
- Professor meeting expectations.
- Advice on team management & having a successful team project.

FUTURE BUSINESS:

- Client Interview with Mike Maughan on 09/21/2016 @ 7:30 AM.
- Book EP 324 conference room.
- Establish questions during next team meeting.

Meeting adjourned: 4:32 PM

NEUROTOUCH MEETING MINUTES

19 September 2016

Team Meeting

Attendance:

Team:

1. Brendan Souvenir
2. Christina Gibbs
3. Brooke Deans
4. Matt Harlow
5. Mazen Aljawi

Start Time: 8:08 AM

Location: EP 414

PRE MEETING

1. Bring 5 questions to ask Dr. Maughan for Client meeting

CURRENT BUSINESS

Client Interview Questions:

Biological:

1. Size of hole to cut into skull?
2. Will the brain vain pulsations affect the device readings? If so, how to compensate?
3. Will we need to do measurements of the skull to accurately collect data?
4. Is there a plastic “sleeve/wrap” on the end effector?
5. Is there a typical cancerous part of the brain? How to minimally invade head?
6. Does the angle matter when touching head?

Mechanical:

1. What display want with device?
2. In what order of magnitude will measurements be taken?
3. What are physical constraints/features?
4. What material of this device needed to be? Plastics/metals?
5. What is the end effector made out of?

Electrical:

1. Sensors on the inside of the probe?
2. Results on computer or on device?

General:

1. What are clients exact needs so we know exactly what to include?
2. How long can the user wait without the results?
3. What is needed for the first Snapshot Day?

IP safe for Wikipage?

Gantt Chart:

- Created the fall semester list to be used to create a Gantt Chart that will list the major tasks, assignments, check points, and due dates to keep our project moving.

FUTURE BUSINESS

1. Create sketch for device to include on Client Interview
2. Create Gantt Chart
3. Continue project learning and research
4. Update personal logbooks

Meeting Adjourned: 9:21 AM

NEUROTOUCH MEETING MINUTES

22 September 2016

Client Interview

Attendance:

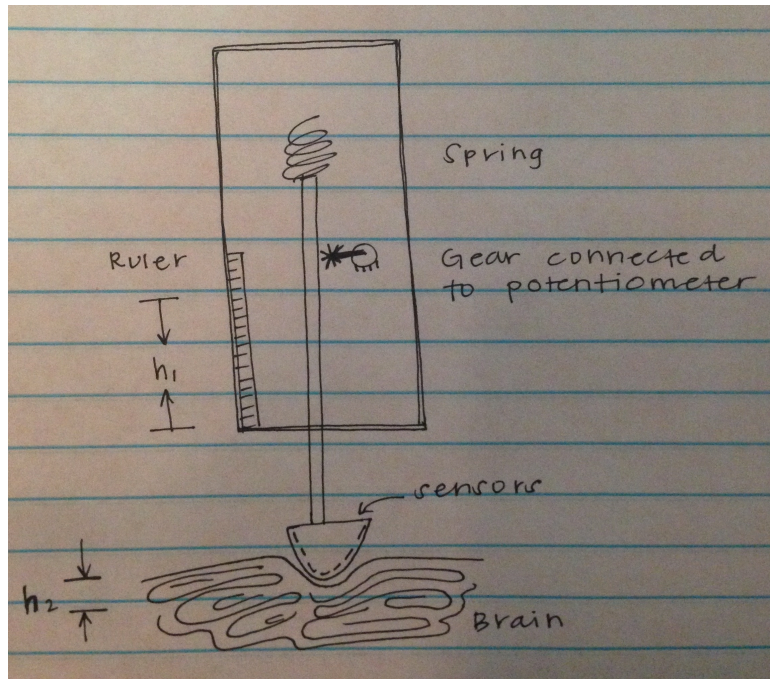
Team:

1. Brendan Souvenir
2. Christina Gibbs
3. Brooke Deans
4. Matt Harlow
5. Mazen Aljawi

Clients: Dr. Mike Maughan
and Dr. Bryn Martin

Instructor: Dev Shrestha

Start Time: 4:30 PM



QUESTIONS:

Biological:

1. Size of hole to cut into skull?
 - a. Pinky tip size
2. Will the brain vein pulsations affect the device readings? If so, how to compensate?
 - a. Deal with this potential problem later. Get working prototype first
3. For the depth of brain tissue indentation, could we use skull as anatomical reference point?
 - a. Not ideal, use brain initial position as reference.
4. Sterilization idea: plastic "sleeve/wrap" on the end effector?
 - a. Deal with this potential problem later. Get working prototype first
5. Is there a typical cancerous part of the brain? What is the most minimally invasive technique?
 - a. Deal with this potential problem later. Get working prototype first
6. Does the angle matter when touching head?
 - a. Deal with this potential problem later. Get working prototype first

Mechanical:

1. What display want with device?
 - a. Would be nice, but deal with this problem later. Get working prototype first.
2. In what order of magnitude will measurements be taken?
 - a. This is something we will find out. Would like accuracy to the nearest millimeter.
3. What are physical constraints/features?

- a. Must be hand held, light weight, accurate, highly sensitive.
- 4. What material of this device needed to be? Plastics/metals?
 - a. For first prototype, just use what is the cheapest and available material in shop.
- 5. What is the end effector made out of?
 - a. Material with known mechanical properties that will not deform when in contact with brain.

Electrical:

- 1. Sensors on the inside of the probe?
 - a. Deal with this potential problem later. Get working prototype first
- 2. Results on computer or on device?
 - a. Computer first, device reading would be a nice addition but not necessary

General:

- 1. What are client's exact needs so we know exactly what to include?
 - a. Want a prototype to start making measurement asap
- 2. How long can the user wait without the results?
 - a. Less than ten seconds
- 3. What is needed for the first Snapshot Day?
 - a. Poster presentation
- 4. IP safe for Wikipage?
 - a. Not addressed
- 5. Budget
 - a. 3000. Deal with Dr. Martin Directly
- 6. Formula analysis
 - a. Poisson's ratio: 0.3-0.5
- 7. How will we test device
 - a. Pick three polymers with known stiffness.

Meeting Adjourn time: 5:30 PM

NEUROTOUCH MEETING MINUTES

26 September 2016

Team Meeting

Attendance:

Team:

1. Brendan Souvenir
2. Christina Gibbs
3. Brooke Deans
4. Matt Harlow
5. Mazen Aljawi

Start Time: 4:30 PM

Location: EP 414

PRE-MEETING PREP

1. Bring notes from client meeting
2. Brooke's papers?
3. Project Learning

CURRENT BUSINESS

1. project learning
 - a. Check Martin Dropbox
2. Design
 - a. Decided to ignore angle compensation issue for first prototype.
 - b. Chose to go with Force sensor.
 - c. Reformatted design sketch. Will look into laser for photoelectric scanners

FUTURE BUSINESS

1. Research Research Research!
2. Mazen: Research acceptable Poisson value
3. Need to pick body materials
4. Make specification list.
5. WikiPage? --> Matt

Meeting Adjourned: 5:30 PM

NEUROTOUCH MEETING MINUTES

29 September 2016

Instructor Meeting

Attendance:

Team:

1. Brendan Souvenir
2. Christina Gibbs
3. Brooke Deans
4. Matt Harlow
5. Mazen Aljawi

Instructor: Dev Shrestha

Client: Mike Maughan

Start Time: 4:00 PM

Location: EP 414

PRE-MEETING PREP

1. Bring notes from client meeting for Dev

CURRENT BUSINESS

1. Transcript to Client Interview
2. Target Specs to Client
3. SolidWorks/ Catia Design
 - a. SolidWorks chosen; Brooke and Matt most comfortable with.
4. Material Selection
 - a. Whatever is in shop... Location of extra supplies clarified.
5. Date for first Prototype to Gantt Chart

FUTURE BUSINESS

1. Mazen: Research acceptable Poisson value
2. WikiPage? --> Matt
3. Goal: have stuff selected ~maybe ordered~ by Thursday and solidworks parts assembly started
4. Brendan will pick out top sensors and present 10/3.
5. Brooke and Matt: find out what materials area vialbale and bring to meeting for discussion
6. Circulate specs and interview summary

Meeting Adjourned: 4:30 PM

NEUROTOUCH MEETING MINUTES

3 October 2016

Team Meeting

Attendance:

Team:

1. Brendan Souvenir
2. Christina Gibbs
3. Brooke Deans
4. Matt Harlow
5. Mazen Aljawi

Start Time: 8:00 AM

Location: EP 414

PRE-MEETING PREP

1. Be ready to pick sensors

CURRENT BUSINESS

1. Brendan: presentation of sensors
 - a. Photoelectric Sensor- Criteria: Low voltage, measures distance, 1mm precision.
 - i. Balluff photoelectric distance sensor bodo001h: large, >\$600, polarity protector, 100-150-mcm, 30V, reads in 100mm-600mm
 - ii. Omron zs series: hlds60, reflection up to 600mm distance. Visible laser 16mm, resolution is 8mcm, good sample rate, cable length can be 0.5-2 meters. Weight: 800g dimensions: 75mm-120mm
 - iii. Ultrasound would be possible: Omron ultrasonic, distance, 50-500mm, also expensive, does have calibration technique. Dimensions: length of head 114mm, width 36mm. Would need to order conversion cable.
 - b. Force Sensor:
 - i. Honeywell: FSA series lots of options: good sensitivity, different output options. (\$
 - ii. \$665 model 13, is perfect for our design but not the reasonable price range.
 - iii. FSS Series: low profile force sensor: super small. Can't take more than 20N- not a problem. (\$60-70)
 - c. Raspberry pi board: \$35
 - d. Memory board: unknown
 - e. Microcontroller with super high sample rate: unknown
2. Portfolio, link on webpage, due tomorrow.
 - a. Reviewed grading sheet and divided tasks
 - b. Brooke: Project Timeline (Gantt Chart) and Freehand Sketches
 - c. Matt: Design Goals and Specs & Constraints
 - d. Mazen: BOM and Budget

- e. Brendan: Analysis of Alternatives BOM
 - f. Christina: Team Meeting Minutes and Project Learning Summary
 - g. Not included in review because of lack of project development: System Diagram, Engineering Modeling, Drawing Package, Manufacturing Assembly Plan, Experiment Design, and Technical Data Sheets.
3. Meet Wednesday to work on SolidWorks design? Maybe two designs- one for the large laser sensor, one for ultrasound probe?

FUTURE BUSINESS

- 1. Logbook review tomorrow
- 2. Do Portfolio Assignments. Brooke will provide binder
- 3. Brendan and all keep up on sensor research
- 4. Tentative Wednesday SolidWorks drawing started.

Meeting Adjourned: 9:10 AM

NEUROTOUCH MEETING MINUTES

6 October 2016

Instructor Meeting

Attendance:

Team:

1. Brendan Souvenir
2. Christina Gibbs
3. Brooke Deans
4. Matt Harlow
5. Mazen Aljawi

Instructor: Absent

Client: Mike Maughan

Start Time: 4:00 PM

Location: GJ 108

PRE-MEETING PREP

1. Portfolio Binder
2. Logbooks

CURRENT BUSINESS

1. Sensors
 - a. Proximity: Balluff representative
 - i. Photoelectric
 - ii. Laser
 - iii. Calibrate either for color? What is error with wrong color?
 1. Button for color of tissue type?
 - iv. Ultrasonic
 1. Amplification cone
 - b. Force Sensor: 2nd priority
 - i. Load cell-most durable option
2. Damage control
 - a. Cap for device
 - b. Dealing with force of a drop on load cells?
 - c. Protector to the end of device?
 - d. Sterilization: slip like for thermometers or disposable tip.
3. Design
 - a. Brooke and Matt show puzzle piece design.
 - b. 3D print. Talk to Lucas.
4. Potential Problem
 - a. Brain pulsations with heart rate
5. Levenberg-Marquardt Algorithm
 - a. Error analysis to find correct value.

FUTURE BUSINESS

1. Meet with Lucas about 3D printing.
2. Brendan to get Spec sheet and cost analysis
3. Christina and Mazen work on protecting tip of device
- 4.

Meeting Adjourned: 5:30 PM

NEUROTOUCH MEETING MINUTES

10 October 2016

Team Meeting

Attendance:

Team:

1. Brendan Souvenir
2. Christina Gibbs
3. Brooke Deans
4. Matt Harlow
5. Mazen Aljawi

Start Time: 8:00 AM

Location: EP 414

PRE-MEETING PREP

1. Snapshot prep

CURRENT BUSINESS

1. Snapshot Prep
 - a. Brook did slides before
 - i. Brendan do two slides for electrical components
 - ii. Matt Print off 3D pictures from Martin DropBox
 - iii. Christina type up project learning statements.
 - b. Elevator Pitch
 - i. Introduction of team
 - ii. Purpose
 - iii. Our solution
 - iv. Where we are in development

FUTURE BUSINESS

1. Brooke print off slides.
2. Brooke and Matt will set up early.
 - a. Christina and Mazen have class
- 3.

Meeting Adjourned: 9:15 AM

NEUROTOUCH MEETING MINUTES

13 October 2016

Instructor Meeting/Client Meeting

Attendance:

Team:

1. Brendan Souvenir
2. Christina Gibbs
3. Brooke Deans
4. Matt Harlow
5. Mazen Aljawi

Instructor: Dev Shrestha

Clients: Mike Maughan and Bryn Martin

Start Time: 4:00 PM

Location: GJ 108

PRE-MEETING PREP

1. Snapshot Review

CURRENT BUSINESS

1. Snapshot Discussion
 - a. Learned some new ideas
 - i. AFM
 - b. Learned about other sensors
 - i. INL project
 - c. How do we keep rod in mechanism?
2. Device Purpose discussion
 - a. Uses: tumors (superficial and ventricles), skin cancer, breast cancer
 - b. The device can measure effect of brain pulsations, so we won't need to worry about compensating for them.
 - c. Biological tissues have a toe region that we plan to be operating in during tissue measurement.
 - d. Cortical folds are ~1cm wide.
 - e. Strain rate dependent? We don't know
 - f. Other ideas: laser pen, hunting scopes
3. Mechanical Developments
 - a. End effector size? Pen tip or finger size?
 - i. Only go in 10% of radius to ensure accuracy.
4. Balluff Meeting
 - a. Rep is coming to town Wednesday.
 - b. Samples will be brought and tested.
5. Should be doing more delegation as a team and not just make Brendan do all of the sensor research.

FUTURE BUSINESS

1. Onket Gupta (?)- look up
2. DAQ and Oscilloscopes upstairs GJ
3. Talk to Dr. Schiele about load cells and biological tissues
4. Look up competitive prices before Balluff meeting.
5. Start coding

Meeting Adjourned: 9:15 AM

NEUROTOUCH MEETING MINUTES

17 October 2016

Team Meeting

Attendance:

Team:

1. Brendan Souvenir
2. Christina Gibbs
3. Brooke Deans
4. Matt Harlow
5. Mazen Aljawi

Start Time: 8:00 AM

Location: EP 414

CURRENT BUSINESS

1. LM Algorithm Coding by Brendan over weekend
 - a. Found a converter for Matlab to Arduino.
2. Design
 - a. Matt and Mazen make meeting with Lucas about 3D printers.
 - i. 0.8-0.25mm nozzle sizes
 - b. Still not decided no best way to protect device.
3. Balluff
 - a. Still waiting for confirmation for a time on Wednesday
 - b. Load Cell research
 - i. Brooke
 - c. Ultrasound Research
 - i. Christina

FUTURE BUSINESS

1. Coding in Arduino or Python
2. Do preparations for balluff Meeting

Meeting Adjourned: 9:30 AM

NEUROTOUCH MEETING MINUTES

20 October 2016

Instructor Meeting

Attendance:

Team:

1. Brendan Souvenir
2. Christina Gibbs
3. Brooke Deans
4. Matt Harlow
5. Mazen Aljawi

Instructor: Dev Shrestha

Client: Mike Maughan

Start Time: 4:00 PM

Location: GJ 108

CURRENT BUSINESS

1. Balluff Meeting yesterday overview.
 - a. Decided on Ultrasound Sensor
2. Brooke presented new model design.
 - a. End effector decided on 1 cm in radius
 - b. Decided to add threading on end for a screw on cap to act as a protector
3. Problem
 - a. Dev identified issue if indentation spreads to the area the US is sensing.
 - i. Christina noted that it would show up in numerical measurements that surface being measured would begin to move away.
 - ii. If this happens we will need to make a whole new model. Cross that bridge when we get there.
 - b. Temperature considerations if load cell is working too hard?
 - i. Not likely. But will deal with that issue when arises.
 - c. Angle effects
 - i. Christina said that we can measure error with device to see if negligible or not.
 - ii. Dev suggests calculating with FBD
 - d. Friction on rod
 - i. Add bearings or narrow of material to hold rod in place with minimal friction.
 - ii. Calculations can be made to find out how much friction is taking away from measurements and coding can calibrate for it.
 - e. How to make sure user doesn't poke too much into brain?
 - i. Brooke noted how user may not realize if too much indentation with sensor because of no visualization

- ii. Can use US sensor to make a noise or utilize light that is already on the sensor to tell user once reached 10% of radius.
- 4. End Effector material
 - a. Metal Balls-Christina will go to Moscow Building Supply

FUTURE BUSINESS

1. Mazen: Get force resistance sensor from Dev and give to Brendan or Christina.
2. Brendan and Christina will start coding in Arduino
3. Brooke will look up dimensions of amplification cone and incorporate into design.
 - a. Also check for hole in design
4. Matt and Mazen- 3D print housing.
5. All need to get shop training.

Meeting Adjourned: 5:30 PM

NEUROTOUCH MEETING MINUTES

24 October 2016

Team Meeting

Attendance:

Team:

1. Brendan Souvenir
2. Christina Gibbs
3. Brooke Deans
4. Matt Harlow
5. Mazen Aljawi

Start Time: 8:00 AM

Location: EP 414

CURRENT BUSINESS

1. 3D printing- Matt Brooke Mazen
 - a. Goals: assembly made before semester is over
2. Coding- Brendan Christina Mazen
 - a. Goals: Coding done before Spring semester begins.
 - i. Christina and Brendan meet tomorrow during class period to make coding with FR sensor
 - ii. Matlab stuff done first week of November
3. .stl file is on Brooke's Udrive
4. Christina did not go to MFB because she does not have a car.
5. Design meeting Date and Time
 - a. November 10th during instructor meeting time.
6. Balluff Contact-Brian
 - a. Request BOM
 - b. Find size of sensor for Brooke
 - i. Cone size-Brooke will look up online
 - c. Keep options open with other companies
7. Christina thinks we need to get a transportation case for device
 - a. Get dimensions from Brooke to start shopping.
 - i. Pencil box?
 - ii. Lunch Pail?
8. Wiki Page:
 - a. Assembly Design
 - b. Math Concepts
 - c. Previous Knowledge
 - d. Parts and where we are getting them from

FUTURE BUSINESS

1. Christina will find 441 labs for Brendan

- a. Meet Tuesday 3:30 in JML
2. Matt will send out email about shop time and email for clients approving date and time for Design meeting
3. Brooke will get dimensions of sensor and cone.

Meeting Adjourned: 9:20AM

NEUROTOUCH MEETING MINUTES

27 October 2016

Instructor Meeting

Attendance:

Team:

1. Brendan Souvenir
2. Christina Gibbs
3. Brooke Deans
4. Matt Harlow
5. Mazen Aljawi

Instructor: Dev Shresthra

Clients: Mike Maughan

Start Time: 4:00 PM

Location: GJ 108

CURRENT BUSINESS

1. 3D printing update
 - a. Balluff contact did get back to Brendan Tuesday. BOM will still be coming
2. Coding update
 - a. Brendan and Christina worked on a set up in LabView- don't know how to get it transitioned into Arduino code yet.
3. Shop training time
 - a. No reply
4. Wiki Page
 - a. Made during class on Tuesday with matt.
 - b. 'brain stiffness measurement' is the handle
5. Design Meeting prep
 - a. Clients not in ENGR mail list
 - b. Will do prep stuff during Mondays meeting

FUTURE BUSINESS

1. Matt will send out email to clients
2. Dev wants all documents switched to OneDrive
 - a. Christina will re-type and transfer all documents by Monday
3. Still need shop time
4. Someone with a vehicle make trip to Moscow Building supply and store for transportation case

Meeting Adjourned: 4:45 PM

NEUROTOUCH MEETING MINUTES

31 October 2016

Team Meeting

Attendance:

Team:

1. Brendan Souvenir
2. Christina Gibbs
3. Brooke Deans
4. Matt Harlow

Start Time: 8:00 AM

Location: EP 414

CURRENT BUSINESS

Mazen Absent

1. Design Meeting Preparation-November 10th
 - a. Make outline of what we need to cover in presentation
 - i. Who talks about what?
 - ii. Make slides to present to Dev on Thursday for approval
 - iii. Practice presentation next week
2. Brooke 3D development.
 - a. No progress since last meeting
3. Christina and Brendan coding progress
 - a. No more progress since last meeting
4. Client confirmation on time for design meeting
 - a. Yes November 10th 4:00PM.
 - b. Room still needs to be booked-Matt will talk to Judy
5. Christina made OneDrive account- Everyone switch over their own documents

Meeting Adjourned: 9:00 AM

NEUROTOUCH MEETING MINUTES

3 November 2016

Instructor Meeting

Attendance

Team:

1. Brooke Deans
2. Brendan Souvenir
3. Matt Harlow
4. Mazen Aljawi
5. Christina Gibbs

Instructor: Dr. Shrestha

Clients: Dr. Maughan and Dr. Martin

Start Time: 4:00PM

Location: GJ 108

CURRENT BUSINESS

1. Design Meeting Presentation made-Dev approval
 - a. Room reserved? BEL 301
 - b. Brendan presented his slides. With timeline considerations as well as different electrical schematics
2. 3D solid model started- printing. Will be done tomorrow.
3. Load sensors ordered?
 - a. Quantity limit so we need to make sure we are not ordering 1000 load sensors.
4. Sensors
 - a. Omron-expensive but previously calibrated which makes it a reasonable cost assuming if it is the right.
 - b. Balluff sensor is in
 - c. Certificate of authenticity for sensors that are high quality.
 - i. They may last longer over time or be more accurate...
 - d. Dr. Martin wants us to use oscilloscope for proof of concept for reading voltage (load) and recording data.
5. Coding progress
 - a. None right now. Matt brought a bread board with Arduino connection
6. Mentor for shop training?
 - a. 3pm tomorrow
7. Wiki page draft due tomorrow
 - a. Everyone needs to do their bios

Meeting Adjourned: 5:00 PM

NEUROTOUCH MEETING MINUTES

7 November 2016

Team Meeting

Attendance

Team

1. Christina Gibbs
2. Matt Harlow
3. Brendan Souvenir
4. Christina Gibbs
5. Brooke Deans

Meeting start: 8:00AM

Meeting Location: EP 414

CURRENT BUSINESS

1. Design Meeting Presentation
 - a. Practiced slides together
2. 3D solid model
 - a. Model completed.
3. Load sensors ordered?
 - a. Not yet... still in decision
4. Coding progress
 - a. Balluff equipment is in
 - b. Brendan worked on code and will show everyone next week after design review
5. Shop training
 - a. Still needed to be scheduled

Meeting Adjourned: 9:20AM

NEUROTOUCH MEETING MINUTES

10 November 2016

Design Review

Attendance

Team

1. Christina Gibbs
2. Matt Harlow
3. Brendan Souvenir
4. Mazen Aljawi
5. Brooke Deans

Clients: Dr. Mike Maughan and Dr. Bryn Martin

Instructor: Dr. Dev Shrestha

Star Time: 4:00PM

Location: BEL 308

CURRENT BUSINESS

1. Comments from Clients
 - a. Should talk to someone about acoustics of US sensor
 - b. LSQ Curve Fit- something we could code ourselves.
 - c. No total budget shown on budget slides
 - d. Dura will be removed for testing

Meeting Adjourned: 5:00PM

NEUROTOUCH MEETING MINUTES

14 November 2016

Team Meeting

Attendance:

Team:

1. Brendan Souvenir
2. Christina Gibbs
3. Matt Harlow
4. Mazen Aljawi

Start Time: 8:00AM

Location: EP 414

Brooke on Vacation

CURRENT BUSINESS

1. Logbook/portfolio returned?
 - a. Not yet
2. Wiki Page
 - a. Help with Electrical components
 - b. Help with Biological components
3. Design Review discussion
 - a. Edit ppt
 - b. Attend two more meetings
4. Dr. Martin has lab space
 - a. BEL 208- for us!
 - b. 2 IRIC labs
5. Team Evals due Friday.
6. Go to BEL
 - a. Brendan shows update on new code. Still some glitches but hope to work through those this weekend.

NEUROTOUCH MEETING MINUTES

17 November 2016

Instructor Meeting

Attendance

Team

1. Christina Gibbs
2. Matt Harlow
3. Brendan Souvenier
4. Mazen Aljawi

Instructor: Dev Shresthra

Client: Dr. Maughan

Meeting start: 4:00PM

Location: GJ 108

Brooke still gone

CURRENT BUSINESS

1. Acoustic Meeting from Matt
 - a. Dr. Anderson with acoustics for US.
 - i. Should work on figuring out the spot size and consider how it effects with convolutions
 - ii. Matt will meet again to look into material considerations.
2. Portfolio Review
 - a. Need to add wiki information
 - b. Tech data sheets
3. Mazen transportation equipment
 - a.
4. Coding update
 - a. Sampling rate?
 - i. Consistent measurement not average.
 1. Pull one every ten
 - b. Should do dry run-test each sensor to test resolution with paper and ruler/micrometer
 - i. Hysteresis effects
 - ii. Noise
 - iii. Mazen and Bryn
5. 3D print of brain surface to see how convolutions affect distance measurement
 - a. And find a way to correlate spot size with error.
 - b. Get scans 3D model from Bryn
 - i. Christina
6. Force sensor is in

- a. Brendan will pick up tomorrow
- 7. Friction
 - a. Calibration for friction- is needed
 - b. Angle too?

Meeting Adjourned: 4:40 PM

NEUROTOUCH MEETING MINUTES

28 November 2016

Team Meeting

Attendance

Team

1. Christina Gibbs
2. Matt Harlow
3. Brendan Souvenier
4. Brooke Deans
5. Mazen Aljawi

Meeting start: 8:00AM

Location: EP 414

CURRENT BUSINESS

1. Class tomorrow
2. Wiki page updates?
3. Dr. Anderson
 - a. Schedule another meeting about material properties and sound reflection-Matt
4. Snapshot FRIDAY
 - a. New design goal pages-Brooke
 - b. Page for polymer testing-Christina
 - c. Potential Issues-Christina
 - d. Budget-Mazen
 - e. All new Drawing and Rendering6-Matt
5. Polymer Testing
 - a. Christina and Mazen will schedule meeting this week
6. Brendan still wants a 'proof of concept' design-wood block?

Meeting Adjourned: 9:00 AM

NEUROTOUCH MEETING MINUTES

5 December 2016

Team Meeting

Attendance

Team

1. Christina Gibbs
2. Matt Harlow
3. Brendan Souvenier
4. Brooke Deans
5. Mazen Aljawi

Meeting start: 8:00AM

Location: BEL 218

CURRENT BUSINESS

1. New lab. What do we want in it?
 - a. Computer
 - b. Oscilloscope
 - c. Table and chairs
 - d. White board
 - e. Couch
 - f. Coffee maker?
 - g. Hot plate for making of agar
2. Polymer testing
 - a. Christina and Mazen met with Dr. Schiele
 - b. Will need to find an alternate way to test to find mechanical properties to verify our device.
 - c. Compression testing?
 - d. Mazen will take on this project
3. End Effector
 - a. Now Christina's Responsibility
 - b. Rod from scrap shop.
4. Sensor testing
 - a. Brendan can start.
 - b. Will have more progress by Thursday
5. Log books will be due this Friday
6. Wiki page will need to be updated
 - a. Will meet after instructor meeting to update

Meeting Adjourned: 9:00 AM

NEUROTOUCH MEETING MINUTES

8 December 2016

Instructor Meeting

Attendance

Team

1. Christina Gibbs
2. Matt Harlow
3. Brendan Souvenier
4. Brooke Deans
5. Mazen Aljawi

Instructor: Dr. Dev Shrestha

Client: Dr. Martin

Meeting start: 4:00PM

Location: GJ 108

CURRENT BUSINESS

1. Field Trip
 - a. Dev thinks we look into touching real brains
 - b. Vandal Meats?
2. 3D Brain print
 - a. Convolutions are large on portion Christina printed
 - b. Maybe look into printing one with different threshold.
3. Polymer testing
 - a. Compression Device on Campus?
 - b. Durometer? Instron? Look into finding those on campus
 - c. Dr. Martin proposes tensile test and making mold in a straw
 - d. Silguard 184? Newcis polymers CF11-2188?
 - i. Other brands to look into-mazen
4. End effector
 - a. Christina could not find options looking up steel spheres.
 - b. Suggestion was made to look up ball bearing to find the materials the group was looking for.
5. Electrical
 - a. Brendan still plans to have a working model before school starts next semester.
6. Portfolio and Log Books due tomorrow

Meeting Adjourned: 4:30 PM