

Title: System for pH Measurement in Incubators

Team Members: Mike Swift, Steve Huffacker, Sara Alford, Ryan Porter, Byoung Choe, Kristi Hinner, Laura Wing, Gabriel Martinez-Diaz, Carla Maas

Team leader: Mike Swift

Communications: Ryan Porter

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Client: Dr. Theresa Duello
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Date: Mar. 30 - Apr. 6

Problem Statement: To develop a device that can constantly monitor the pH levels of the bathing medium for bovine embryos inside an incubator. This device cannot alter the incubator in any way. It must also be able to accurately measure the pH within tenths of a pH level.

Restatement of Team Goals: After breaking into groups we hope to get things done more efficiently. The client gave us valuable insight as to who to contact for supplies and questions. Hopefully, this week will be the start of being well on our way to finishing our project.

Summary of Accomplishments: We met with the client after class on Fri. to update her with our final list of items that we think we will need in order to complete the project. She discussed that someone on campus may have some of the items we need meaning we may not have to order them, or we could test them before purchasing them. We met with the Medelectronic people for technical questions about our project. They will be valuable contacts in the future. The client also sent out a mass email to the neuroscience and computer engineering faculty inquiring about software people already have, or existing hardware we could use to run tests. We also broke into small groups in order to more efficiently run our project. These groups include:

Stand design: Kristi, Byoung, Steve, and Mike

Final Paper write up: Carla, Sara, Laura

Product ordering: Ryan and Gabi

The paper group has met and already updated the PDS. Additionally, they set up a time line for the paper's production:

April 6: Have PDS updated, and we come to class on Friday with an outline including all our alternative solutions that we were contemplating throughout this semester.

April 13: Have a draft of the following sections: Title Page, Problem Statement, Background Information (include sources, reference page preliminary), Alternative Solutions (with scanned pictures).

April 20: Have first section, from April 13th revised, and then add our final idea as an alternative choice, along with the preliminary evaluation, and solution/summary for choice. Get necessary appendix information from group.

April 27: Add the last sections of the paper: Evaluation of the design, and Suggestions for Future Development. Update the Appendix and References. Minor Revisions may be still necessary. On this date, we are planning on distributing the paper to the other group members for their comments and revisions.

May 4: During this week, we will put together the slides for our presentation. Also the paper will have its final revisions done. On May 4th, paper is due, and presentation day.

The stand group met and have a preliminary design. Fine tuning need to be made yet, but it incorporates x, y, z motion and indicators for which cell the probe is being placed. A general design sketch should be ready for class on Friday. The product ordering group has talked with a few companies and may have a list of potential companies that could provide us with the items that we need.

Statement of Team Goals: On Friday we will collaborate our ideas from the three independent small groups and move forward to next week.

Project Schedule:

Week Date Design Activities

1	1/31	Meet with client
2	2/2 - 2/9	Gather research
3	2/9 - 2/16	Gather more research and ask client questions
4	2/16 - 2/23	Come up with ideas for design and write outline
5	2/23 - 3/2	Complete the Report and Slides for the Presentation
6	3/2 - 3/9	Meet with the client and discuss our design ideas
7	3/9 - 3/23	Break into small groups to begin final design
8	3/23 - 3/30	Meet with client, form list of needed items and break into small groups for the building phase
9	3/30 - 4/6	Design stand, begin writing paper, talk to companies about ordering parts

Difficulties: not altering the incubator, not damaging the embryo or the bathing medium, not affecting the pH or temperature of the bathing medium while taking measurements

Activities: Met with client, broke into small groups, talked with companies, generated time line for paper, began designing stand for pH probe.

Time Spent on Project Outside of Class (this does not include time spent in class which is noted on Friday)

If there are hours I missed I will include them in next week's report.

This Week (in hours)

Mike 4.5, 1 for writing progress report, 1 for client meeting, 2.5 for stand design ideas.

Gabriel 7, 3 missed from earlier, 3 for company lookup and contact, 1 for client meeting

Sara 3, 1.5 for paper meeting, 1 for web site setup, .5 for summary of paper groups time line

Steve 3.5, 3.5 for stand design ideas

Byoung

Ryan 2.5, 1 for client meeting, 1.5 for company contact and talking with purchasing group

Kristi 2, 1 for client meeting, 1 of general stand design brainstorming

Laura 5, 1 for early stand idea last week, 1.5 for meeting with paper group, 2.5 misc. work and write up summary of Friday client meeting

Carla 2, 2 for meeting with paper group and paper work

Total Hours

Mike 32

Ryan 17.5

Sara 18

Steve 30

Byoung 7

Gabriel 28.5

Kristi 18.5

Laura 24

Carla 13.7