MIDTERM PROGRESS REPORT
IPRO-341 Developing a Prototype Display for the Prenatal-to-Newborn Blood Flow System
Professor Fagette

Team Members

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Revised Objectives

The purpose of the IPRO last semester was to develop a prototype of a cardiovascular display for the prenatal to newborn blood flow system for the Museum of Science and Industry. The museum's main goal was to have a display that would illustrate and demonstrate the changes in pressure within the body before, during, and after birth. To accomplish this, the group decided the goal of the semester was to create a visual presentation, which could ultimately be on a touch screen monitor, and bench-top model as the display.

Last semester a working "Flash" presentation was created to serve as the visual presentation. This was accomplished through the thorough research accomplished by the large text group comprised of 2 subgroups: a Prenatal and Postnatal research groups. A working benchtop model was also created. To develop the model, a significant amount of research about the fetus in prenatal conditions and the postnatal period had to be done just as for the "Flash" presentation

The main goal of this semester was to fine tune the accomplishments of last semester. The primary objective for the narrative group was to revise the text of the "Flash" presentation to make the information more user friendly. The goal of the image group was to provide better pictures to be used in the "Flash" presentation. The main objective for the model team was to make the model more aesthetic, while still allowing for functionality. The goal for the technology group was to refine the presentation by incorporating the changes made by the text and image group as well as making the presentation as a whole more attractive and easy to employ by the public. The reason for these changes was to ensure that the project as a whole was ready to be seen by the public at the museum. Thus, the primary goal of the semester is to take the prototype to the museum, have museum visitors comment on our models and make suggestions to improve it. After the suggestions are made, we would like to make our final improvements, and hand over our prototype to the museum so that they may incorporate our prototype into a new museum exhibit.

Results to Date:

The primary goal of the narrative group for the "Flash" presentation was to revise the text meticulously. This goal was accomplished through editing the text by further researching into the content of the text to add more definitions to terms, and simplifying the language to make the text more people friendly. Also, the text was cut down to keep the presentation fast paced. The members of the narrative group also analyzed what would help keep the attention of patrons of the presentation and decided to alter the text to be in a more question format manner. After the narrative group finished their initial goal, half of the group joined the model team, while the other half wrote the background section of the final paper and began working on the midterm progress report. To be able to write the midterm progress report, these individuals asked each subgroup to write a short summary of their objectives, accomplishments, and the barriers and obstacles they encountered.

The goal of the image group was to initially find relevant pictures to add to the "Flash" presentation. The presentation carrying over from the previous semester had some visual graphics, but for many of the slides, the same graphic was used. Initially the three member group split into two

teams, two individuals searched for images that demonstrated post-natal fetal development and physiology, while the third member looked for images that showed circulation within a neonate. The team met together and decided it was important to have consistency in the format of images presented. While analyzing the pictures they had found, they found an image that encompassed the majority of areas in the neonate's physiology that we were presenting. After this group finished searching for pictures, the members took on some unrelated tasks. The two member group worked on revising the final text, while the third member met with the IIT radio station to schedule voice recordings for the script to better incorporate the text into the "Flash" presentation.

The first accomplishment of the model group was researching the parts they needed to put a new model together. Once they decided on the parts they needed, the parts were approved by our advisor, ordered, received and tested. Next the flow of the model was figured out to take less convoluted paths, to make it more understandable to the public. Along with the fluid flow, the IPRO team decided that adding lighting to the model, would make the flow easier to see and highlight the importance of the flow changes. Thus along with the fluid flow layout, the electrical luminating (EL) wire plans were also laid out. The parts ordered, provided an unassembled power supply. Thus currently the power supply is being constructed and is about 40% complete. The EL wire has to also be soldered together, and to a cable connecting it to the power supply. Currently this process is about 90% complete. The IPRO team as a whole also decided that to make the whole prototype more tied together by integrating the computer "Flash" presentation and the model. Thus, through the use of solenoids and computer programming, the "Flash" presentation was designated to run the model simultaneously to better emphasize the changes in fetal to neonatal circulation.

The Technology team received a presentation from the previous semester that contained all the factual information of the project. During this first half of the semester, the Technology team took the new text from the narration group, the audio files recorded by a member of the IPRO team and our professor, and the pictures generated by the image team and implemented them into the previous semesters presentation. These new changes made the presentation more streamlined and the make the entire presentation stand out more. This second presentation will hopefully be more easily understood and followed by the public when we test it at the museum.

By this Sunday March 27, the entire "Flash" presentation, and the model will be completed. This will allow the group to show the model to the evaluating public for the first time at the Museum of Science and Industry.

Updated Individual Assignments

Archita Shrivastava and Kedari Vasu: During the remainder of the semester, these individuals will be making visits to the museum to help display our prototype to the public. They will be compiling the critique from the museum visitors to see what needs improvement for the prototype. Any changes to the narration that are determined by the public will be accomplished through this group. These individuals as well as other IPRO members that finish their individual assignments early will be working on the Final IPRO paper, the Posterboard for IPRO day, and the IPRO presentation as well as the IPRO abstract.

Michael Wright and Michael Sloan: These individuals will continue to make improvements to the "FLASH" presentation decided by the public. They will also be attending the museum to acquire feedback from the public. This group will also be required to update the website to fulfill IPRO requirements.

Anand Vankawala, David Zaboli, and Sean Pitroda: These individuals will also be visiting the museum with the prototype. Based on the public's feedback, they will work on improving the images for the "Flash" presentation and improving the overall aesthetic appeal of the presentation. These individuals will also be helping with IPRO day preparation.

Suruchi Thakore, Jennifer Barta, Christopher Tuthill, Grace Lin, Ryan George and Armando Perez: This group will finish the prototype by Friday March 24. After this, the group will be attending the museum to acquire feedback from the public. With this critique they will work to improve the model to allow it to reach a final state where they can hand it over to the Museum of Science and Industry.

Week #	**Assignment**
1	1st day of IPRO: Designate groups, form initial goal Narrative Group: Start editing text Animation Group: Brainstorm for ideas for more aesthetic presentation Model Group: Research Parts Technology Group: Get oriented with the Presentation
2	Narrative Group: Continue goal Animation Group: Continue goal Model Group: Continue Goal Technology Group: Figure out feasibility of improving the Presentation
3	Museum Visitation Evaluate what we could improve based on what was normally presented at the museum and apply them to each of the groups' individual goals in improvement, i.e., Simplified text, more pictures with same theme (all animated), more colorful model Continue to work in groups
4	Narrative Group: Finish editing, change format of text Animation Group: Organize pictures Model Group: wait for supplies, look into lighting Technology Group: Rework Flash platform to new frame format
5	Narrative Group: Continue working on goal Animation Group: Continue to work in group Model Group: Make schedule for making model, and order lights Technology Group: Continue fixing platform
6	Narration Group: Hand over text, begin writing background for paper Animation Group: Decide which pictures will be used Model Group: Design layout of model Technology Group: Record text sound clips

7	Narration Group: Begin working on Midterm report, and ask groups to submit midterm summaries Animation Group: work with Technology group to incorporate images Model Group: Build model Technology Group: Incorporate images, text and audio
8	SPRING BREAK
9	Narration Group: Finish midterm report Animation Group: Figure out schedule for attending museum Model Group: Finish building model Technology Group: Edit presentation based on IPRO teams evaluation
10	Museum Visitation Work on IPRO day requirements Compiling feedback from museum visitors
11	Museum Visitation Work on IPRO day requirements Compiling feedback from museum visitors
12	Revising prototype due to feedback
13	Museum Visitation Work on IPRO day requirements Compiling feedback from museum visitors
14	Museum Visitation Work on IPRO day requirements Compiling feedback from museum visitors
15	Revising prototype due to feedback
16	Finalize IPRO day requirements Make final touchups to prototype and hand over prototype to museum

Barriers and Obstacles:

Some obstacles the group encountered as a whole were scheduling conflicts within our subgroups. Because the group was composed of students from various academic backgrounds, scheduling meetings and work times that were not conflicting with classes and exams proved to be difficult. The group overcame this problem by communicating through email and delegating work to be done individually at group meetings. Efficiency of work was also dependent on outside factors such as companies delivering the appropriate parts to update the prototype. Another barrier that our IPRO faced was we were under a tight deadline. Our goal was to take our finished product to the museum shortly after spring break so that we could acquire feedback to improve it. This gave us only half a semester to get the majority of our IPRO project complete. To deal with this, the group formed strict deadlines for the individual goals of each subgroup to take place in a timely manner to ensure our final project would be finished in time.