IPRO 310 Project Plan

Fall 2009

BUOY

Devices that Assist Blind & Visually-Impaired Individuals in Swimming and Other Exercise Activities

I. Team Charter

1. Team Information

A. Team member roster

Name	Email	Phone #
Dykeman, Kimberly	kdykeman@iit.edu	[redacted]
Healton, Michaela	mhealton@iit.edu	[redacted]
Lipman, Timothy	tlipman@iit.edu	[redacted]
Ludwig, Ross	rludwig1@iit.edu	[redacted]
Park, Jay	jpark71@iit.edu	[redacted]
Reilly, Jeffrey	jreilly2@iit.edu	[redacted]
Sarkar, Smita	ssarkar8@iit.edu	[redacted]
Sirk, Phillip	psirk@iit.edu	[redacted]
Toro, Branden	btoro@iit.edu	[redacted]

B. Team member strengths, needs and expectations

Major, Year	**Skills/Strengths**	**Skills to Learn/**	**Hopes/ Expectations**

		Gain	
Psyc, 2nd Year	Proficient at Microsoft Office (Word, PowerPoint, Publisher, Excel) Basic experience with C++ and Visual Basic programming languages. Psychology experience	Gain skills in circuitry	Expect to increase interaction with the BVI community
Chem, 3rd Year	Skilled in communication, Proficient with Microsoft Office Suite, Basic experience with C++	Leadership, Business communication, Increased knowledge of circuitry	Hope to gain leadership skills while assisting in the manufacture of a working prototype
Psyc, 4th Year	Survey knowledge, Brief swimming knowledge, computer skills	Technical skills in either lasers or electromagnetic fields	To help create a device that will assist blind swimmers in swimming

ME, 3rd Year	Some experience and coursework with electrical phenomena and circuitry. Personal experience as a visually impaired person and a competitive swimmer, knowledge of Chicago lighthouse, programming and data analysis experience with Excel and Matlab	Improve communication and cooperative skills with the team as well as with our target demographic and gain a better understanding of how to create, test, and improve real circuitry	Hope to produce a working prototype that is useful to blind swimmers
Psyc, 3rd Year	Knowledge in communication, marketing, Proficiency Adobe and Microsoft Office Suite	Insight on the technological aspects of the prototype, Comfort with assisting blind individuals	Hope to gain experience by learning to interact effectively with team members and developing strategies to market a prototype to the BVI community
Phys, 3rd Year	Excellent leadership and communications skills, ability to identify and solve problems, computer competency with proficiency in Microsoft Office Suite and Computer Programming (Language C++).Certifications in CPR and First Aid	Increased knowledge of prototype fabrication and marketing	Hope to create a useful and cost-effective prototype to meet the needs of the BVI community

BME, 4th Year	Leadership skills. Research experience in BME. Computer proficiency (Microsoft Office, Matlab, C++)	Gain design experience and circuit knowledge	Hope to see the ideas from last semester merges with ideas from this semester in order to make substantial progress towards creating a marketable prototype
CS, 4th Year	Proficiency with Java, C, C++ and VB, experience with embedded systems. Experience working in a professional team setting while developing a product	Hardware experience	Hope to modularize the current hardware design and push the project into meeting real world standards
MMAE 4th Year	Proficiency in C++, Microsoft office, and water rescue skills	Hopes to better understand circuitry as well as the electromagnetic field	To work as a team to accomplish the goals set forth by the group to hopefully get the most accomplished and work to finish the IPRO this year

C. Team Identity

- Name: Buoy
- Logo: 
- Motto: “A Vision for Blind Swimmers”

2. Team Purpose and Objectives

A. Our mission is to develop, test, and implement assistive technology with the community that promotes safety and improves independence of blind and visually impaired (BVI) swimmers.

B. Team Objectives

(1) Design and develop a cost effective assistive technology prototype using current laser and/or electromagnetic field (EMF) technology.

(a) Incorporate device into environment in a discrete manner.

(b) Develop a method of communicating available information between the device and the swimmer.

(2) Include the BVI community in the design process using surveys, interviews, and BVI facility visits.

(3) Maintain the Buoy website for continued accessibility to the BVI community.

(a) Modify the web page to be compatible with existing screen-reader software.

(b) Incorporate surveys into the website to increase feedback from the BVI community.

(4) Create a cooperative, motivational and innovative team environment using team-building techniques.

(5) Research user markets to maximize consumer benefit and marketability of other applications of the device.

(6) Enhance continuity between semesters by utilizing past resources and continuing effective documentation methods.

3. Background

A. Collaborators

(1) The Chicago Lighthouse for the Blind & Visually-Impaired was founded in 1960, its main mission is to serve people who are blind or visually impaired with a broad array of innovative programs designed to assist them in leading richer, more independent lives.

(2) Professor Phillip Troyk, Biomedical Engineering

(3) Professor Ken Schug, Chemistry

(4) Customer: The blind and visually impaired community

According to the American Foundation™ for the Blind as of 2006 there are:

(a) 21.2 million: Blind or Visually Impairment

(b) 254,000: Younger than 17 and blind

(c) 6.2 million: Older than 65 are Blind or Visually Impaired

(d) 121,000: People who are completely blind

B. User Problem

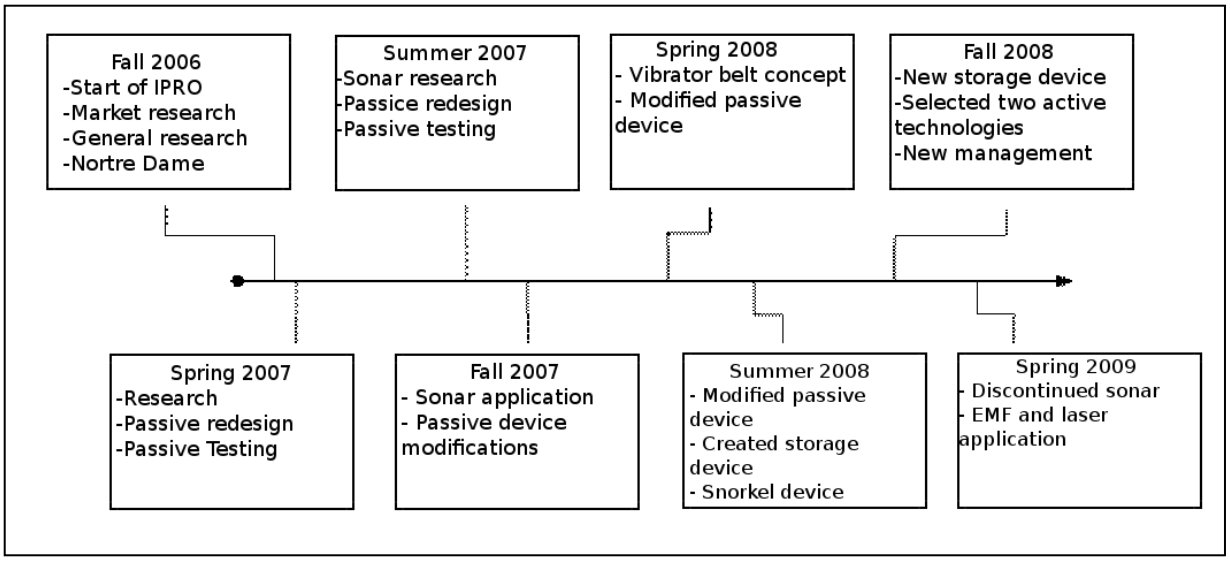
(1) In the past, most of the IPRO groups focused on technology prior to incorporating feedback from the BVI community into the design. As a result, the devices that had been created did not facilitate user autonomy. The prototypes were bulky, drew attention to the blind swimmers, and caused impediments in the swimmers' performance.

C. Technology

(1) The independent living philosophy must be employed in the development of the devices involved in this project. Consumers must be involved in the conception, design, and development of an assistive device.

(2) The technologies explored by previous semesters include sonar, laser sensors and EMF.

D. The IPRO began with an attempt to modify an existing passive device developed at Notre Dame University and later moved on to devices that would allow the swimmer to be independent. The flow chart below shows the history of the devices in our IPRO.



E. Ethical Issues

(1) Beneficence: the action that is done for the benefit of others. Beneficent actions can be taken to help prevent or remove harms or to simply improve the situation of others.

(a) Developing assistive technology to aide BVI swimmers

(b) Training the BVI community with the device

(2) Non-malfeasance: to “do no harm.” Refrain from providing ineffective treatments or acting with malice toward subjects. The pertinent ethical issue is whether the benefits outweigh the burdens.

(a) Quality and safety of the prototypes

(b) Include precautionary information for when using the device

(3) Autonomy: the “personal rule of the self that is free from both controlling interferences by others and from personal limitations that prevent meaningful choice.” Autonomy is used to help individuals act intentionally, with understanding, and without controlling influences.

(a) Informed consent of participants

(b) Discrete appearance of device in order to raise positive self-image

(c) Increasing independence, while decreasing dependence on other people by providing useful device feedback

(4) Justice: the quality of being fair and reasonable

(a) Price that fits the intended market

(b) Patent and copyright

(c) Overall availability and serviceability of the device to the BVI community

(5) Fidelity: faithfulness to a person, cause, or belief, demonstrated by continuing loyalty and faith.

(a) Maintaining past contacts, as well as developing rapport with new contacts and facilities

(b) Receiving input from the BVI community

(c) Providing demonstrations of the technology to the BVI community

(d) Continued involvement with the BVI community

F. Business and societal costs

(1) A significantly smaller portion of BVI individuals exercise compared to the general population due to safety issues. This leads to an increase in health problems.

(2) Public swimming pools by and large do not to meet the requirements put in place by the Americans with Disabilities Act (ADA), so BVI individuals rely on specific facilities to meet their needs. The availability of such facilities however, is very limited.

G. Practical Solutions

(1) Our team will arrange to visit the Chicago Light House and conduct surveys and interviews with BVI individuals.

(2) Two major teams were created: Technology and Communication.

(3) Further prototypes utilizing either the laser or the EMF technologies will be created.

H. Similar Solutions

(1) Some underwater swimming devices that are used by BVI individuals currently include: Life Buoyancy Device, Swimming Aid, Sonar Lifeguard and Easy Float.

(2) Devices that can be used underwater but not for swimming purposes that may be adapted for our design may include: Underwater phone, underwater iPod and underwater headphone.

(3) Devices using either sonar or ultrasound to guide the blind but they cannot be used underwater: Tongue Sensor and Electrode.

(4) Several of the devices stated above are already being sold while the few others are only in the patent phase.

4. Team Values Statement

Behavior	How to address?
Punctuality and absences	Publish attendance chart for peer reviews; any member who plans to miss a class session will provide the team leader with 48 hours notice; in the case of a last minute emergency, the member will contact the team leader and professor
Conflict resolution	Team leader encourages antagonists to discuss the problem face to face.
	If the problem is related to the direction of the IPRO and the face to face method fails, the issue will be brought up during a class session and open for discussion. A vote (simple majority rule) is then taken for a final decision. The vote ensures that the issue is closed and the teams can move forward with their work. We want to ensure that conflict/issues will not impede the progress of the IPRO.
	If the problem is of a personal nature and the face to face method fails, the class advisors will be consulted.
Communication	Break the ice by conducting team building activities and encourage team members to express ideas and suggestions.
	Major teams and minor teams will each decide among themselves the best method and times to meet and announce meeting times to the class.
	Host regular meetings that promote an open dialogue and allow team members to share their findings or problems directly.
	All communication between Bouy and the community will be done by the survey sub-team in coordination with the team leader.
	Team members can share documents and obtain contact information on iGroups.
Motivation	Team building to improve team interaction
Fair Distribution of work	Two major teams and three minor teams
	Leaders of each major and minor team ensure members have fair workload.
	Volunteers for non-categorized work
Documentation	One member of documentation team in charge of recording meeting minutes during each class and uploading to iGroups.
	Agendas are decided on by the team leader and discussed with professor before class to ensure our work is on track.
	Documentation team ensures group is on-track with each deliverable.
	Time sheets record each member’s time contribution in this project.
	iGroups houses all documentation ensuring organization and visibility to entire team.

II. Project Methodology

1. Work Breakdown Structure

A. Existing assistive technology does not allow BVI swimmers to swim as independently as they would like according to survey data from previous semesters.

B. Steps our team will take:

(1) Team members will be divided into two development teams geared towards utilizing specific technology and communicating information efficiently in the development of a prototype device.

(2) Team members will be further broken down into sub teams that will focus on such tasks as: media, research/surveys, and documentation.

(3) It is reasonable to expect that by the end of the semester we will have researched and developed a prototype device based on the technologies we have chosen to use. We will have made contact with the BVI community and completed multiple surveys to aid in the design process. We will have a completed prototype with tertiary and secondary testing. We will also have detailed documentation that allows for continuity between IPROs.

C. Potential solutions will be tested by the major teams and the volunteering participants

(1) There will be three phases of testing:

(a) Initial testing will consist of only Buoy members

(b) Secondary testing will consist of Buoy members and BVI swimmers

(c) Tertiary testing will consist primarily of BVI swimmers and a few control tests with sighted swimmers

(2) Tasks include: acquisition of facilities and participants, user-feedback and maximizing safety of everyone involved. Sub-tasks will include acquiring external testing locations and identifying all legal and financial issues with testing locations and participants.

D. Results of research and testing will be documented as follows:

(1) The survey team will work to develop an appropriate sample of testing methods, surveys, and interviewing processes. With approval of the entire team, the survey team will administer the testing methods and the surveys.

(2) The survey team will also be responsible for creating reports summarizing the findings, which will be documented and presented to the team to aid in the design process.

E. The survey team will be responsible for the analysis of the data, which will then be presented to the class for discussion and uploaded to iGroups for further viewing. The raw data will be analyzed using charts, graphs, and other analysis tools to design the prototype devices.

F. The documentation team will be responsible for the written deliverables due during the semester. Their rough drafts of the deliverables will be presented to the entire group and a final draft will be developed through class feedback.

G. The media team will be responsible for the presentation deliverables due during the semester as well as maintaining and organizing the iGroups site. They will also be responsible for maintaining and improving the Buoy website created by the previous IPRO and to make sure it is compatible with existing software used by the BVI community.

H. Contact List

(1) The Chicago Lighthouse

1850 West Roosevelt Road

Chicago, Il 60608-1298

Tel: (312) 666-1331

Fax: (312) 243-8539

www.thechicagolighthouse.org

(2) Wisconsin Center For Blind and Visually Impaired

Dan Wenzel, Center director

1700 W. State St. JanesVille, WI 53546

Tel: 608-758-6100

www.wcbvi.k12.us

(3) Illinois School for the Visually Impaired

658 East State St.

Jacksonville IL 62650

Tel: 1-800-919-5617

Fax: 217-479-4479

www.isvi.net

(4) Indiana School for the Blind and Visually Impaired

7725 North College Ave.

Indianapolis Indiana 46240

Tel: 317-253-1481

Fax: 317-251-6511

http://intra.isbrockets.org/public/

(5) Rose-Hulman Institute of Technology ECE department

Tel: 812-877-8228

http://ece-1.rose-hulman.edu/ece/

(6) Associate Professor of Biomedical Engineering Philip Troyk

3255 S. Dearborn #314

Chicago, IL 60616

Tel: 312-567-6902

troyk@iit.edu

(7) Assistant Professor of Psychology Ruthanna Gordon

3105 S. Dearborn #256A

Chicago, IL 60616

Tel: 312-567-3514

gordonr@iit.edu

I. Schedule of Tasks and Milestone Events

August 24-28

- IPRO Overview
- Defining the Problem
- Teambuilding Session
- IPRO Team Meeting Minutes
- Time Sheets

    August 31-September 4
- Defining the Problem
- Research/Surveys
- Troubleshooting Devices
- Teambuilding Session
- IPRO Team Meeting Minutes
- Project Plan (9/11)
- Ethics Framework Module
- Time Sheets

    September 7-11
- Research/ Surveys
- Troubleshooting Devices
- Teambuilding Session
- IPRO Team Meeting Minutes
- Project Plan (9/11)
- Design/Build Prototype
- Testing
- Website Development
- Time Sheets

September 13-18

- Research/Surveys
- Troubleshooting Devices
- IPRO Team Meeting Minutes
- Design/Build Prototype
- Testing
- Website Development
- Time Sheets

September 21-25

- Research/Surveys
- Troubleshooting Devices
- IPRO Team Meeting Minutes
- Design/Build Prototype
- Testing
- Website Development
- Time Sheets

September 28-October 2

- Research/Surveys
- Troubleshooting Devices
- IPRO Team Meeting Minutes
- Design/Build Prototype
- Mid-term Prep
- Testing
- Website Development

- Time Sheets

    October 5-9
- Research/Surveys
- Troubleshooting Devices
- Team Building Session
- IPRO Team Meeting Minutes
- Design/Build Prototype
- Mid-term Prep
- Mid-term Reviews (TBA)
- Midterm Peer Evaluations
- Testing
- Website Development
- Time Sheets

    October 12-16
- Research/Surveys
- Troubleshooting Devices
- IPRO Team Meeting Minutes
- Design/Build Prototype
- Mid-term Reviews (TBA)
- Testing
- Website Development
- Time Sheets

    October 19-23
- Research/Surveys

- Troubleshooting Devices
- IPRO Team Meeting Minutes
- Design/Build Prototype
- Testing
- Website Development
- Time Sheets

    October 26-30

- Research/Surveys
- Troubleshooting Devices
- IPRO Team Meeting Minutes
- Design/Build Prototype
- Testing
- Website Development
- Time Sheets

    November 2-6

- Research/Surveys
- Troubleshooting Devices
- IPRO Team Meeting Minutes
- Design/Build Prototype
- Testing
- Website Development
- Time Sheets

    November 9-13

- Research/Surveys

- Troubleshooting Devices
- IPRO Team Meeting Minutes
- Design/Build Prototype
- Testing
- Website Development
- Time Sheets

    November 16-20

- Research/Surveys
- Troubleshooting Devices
- Teambuilding Session
- IPRO Team Meeting Minutes
- Communication Experience & IPRO Day Prep
- Abstract/Brochure
- Website Development
- Time Sheets

    November 23-27

- Teambuilding Session
- IPRO Team Meeting Minutes
- Communications Experience & IPRO Day Prep
- Exhibit/Poster
- Abstract/Brochure
- IPRO Materials Hand-Off
- IPRO Project Closure
- Website Development

- Time Sheets

  November 30-December 4

- Teambuilding Session
- IPRO Team Meeting Minutes
- Communications Experience & IPRO Day Prep
- IIT Course Evaluation
- Exhibit/Poster
- Abstract/Brochure
- Final Report
- Team Work Product
- IPRO Materials Hand-Off
- Final Peer Evaluation
- Individual Team Member Project Analysis Report
- IPRO Project Closure
- Website Development
- Time Sheets

J. Master Team Schedule

	X = Available						
(8:00 to 10:00)	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Jeff Reilly	x		x		x	x	x
Kim Dykeman		x		x		x	x
Michaela Healton	x	x	x	x	x	x	x
Tim Lipman						x	x
Ross Ludwig	x		x		x	x	x
Jay park		x			x	x	x
Smita Sarkar	x	x	x	x	x	x	x
Phil Sirk						x	x
Branden	x	x	x	x	x	x	x

Toro							
(10:00 to 12:00)	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Jeff Reilly		x		x		x	x
Kim Dykeman		x		x		x	x
Michaela Healton	x	x	x	x		x	x
Tim Lipman						x	x
Ross Ludwig		x		x	x	x	x
Jay park		x			x	x	x
Smita Sarkar					x	x	x
Phil Sirk						x	x
Branden Toro					x	x	x
(12:00 to 2:00)	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Jeff Reilly		x		x		x	x
Kim Dykeman		x		x		x	x
Michaela Healton	x	x	x	x		x	x
Tim Lipman						x	x
Ross Ludwig	x	x	x	x	x	x	x
Jay park		x			x	x	x
Smita Sarkar			x		x	x	x
Phil Sirk						x	x
Branden Toro	x		x		x	x	x
(2:00 to 4:00)	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Jeff Reilly		x			x	x	x
Kim Dykeman		x		x		x	x
Michaela Healton					x	x	x
Tim Lipman						x	x
Ross Ludwig		x		x	x	x	x
Jay park	x			x	x	x	x
Smita Sarkar				x	x	x	x
Phil Sirk						x	x
Branden Toro		x		x	x	x	x
(4:00 to 6:00)	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday

Jeff Reilly		x		x	x	x	x
Kim Dykeman		x		x		x	x
Michaela Healton	x	x	x	x	x	x	x
Tim Lipman						x	x
Ross Ludwig	x		x	x	x	x	x
Jay park	x	x	x	x	x	x	x
Smita Sarkar	x	x	x	x	x	x	x
Phil Sirk						x	x
Branden Toro					x	x	x
(6:00 to 8:00)	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Jeff Reilly	x	x	x	x	x	x	x
Kim Dykeman		x		x		x	x
Michaela Healton		x		x	x	x	x
Tim Lipman						x	x
Ross Ludwig	x	x	x	x	x	x	x
Jay park	x	x	x	x	x	x	x
Smita Sarkar	x	x	x	x	x	x	x
Phil Sirk						x	x
Branden Toro		x			x	x	x
(8:00 to 10:00)	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Jeff Reilly	x	x	x	x	x	x	x
Kim Dykeman		x		x		x	x
Michaela Healton	x	x	x	x	x	x	x
Tim Lipman						x	x
Ross Ludwig						x	x
Jay park	x	x	x	x	x	x	x
Smita Sarkar	x	x	x	x	x	x	x
Phil Sirk						x	x
Branden Toro		x			x	x	x

K. Task Breakdown

(1) Identifying the Problem/ Solutions: The entire class will participate in brainstorming sessions to identify potential problems and solutions for prototype design and communications methodology. No special skills or education is needed.

(2) Project Plan: Interested members formed a committee to create the project plan. Preferred skills include previous experience with IPRO, organizational skills, and proficiency with Microsoft Office.

(3) Midterm Review: Selected members and volunteers will participate in the midterm review. Skills for this task include presentation skills, general knowledge of all technologies, comprehension of ethical issues related to this project, and proficiency in power point.

(4) IPRO Day/ Deliverables: Selected Members will present the IPRO day presentation and run the booth at IPRO day. Skills for this task include management experience, presentation skills, a general understanding of technology and ethical issues. Members of the media team and documentation team will design Deliverables. Skills include general understanding of the technology and ethical issues related to this project, computer skills in Microsoft Office, and basic web design.

L. Individual Team Member Assignments

(1) BUOY Overall Team Leader: Jeffrey Reilly

(2) Major teams

(a) Active Team 1: Technology

(i) Phillip Sirk (CS,CPE) TEAM LEAD

(ii) Timothy Lipman (Psyc)

(iii) Ross Ludwig (MMAE)

(iv) Jeffrey Reilly (Phys)

(v) Branden Toro (MMAE)

(b) Active Team 2: Communication

(i) Jay Park (Psyc) TEAM LEAD

(ii) Kimberly Dykeman (Psyc)

(iii) Michaela Healton (Chem)

(iv) Smita Sarkar (BME)

(3) Minor Teams

(a) Media Team

(i) Smita Sarkar (Team 2) TEAM LEAD

(ii) Jay Park (Team 2)

(iii) Phillip Sirk (Team 1)

(b) Media Team Responsibilities

(i) Website

(ii) Brochure/Abstract

(iii) Poster

(iv) PowerPoint Presentations

(v) Deliverables CD

(vi) iGroups

(vii) Informal group pictures

(c) Survey Team

(i) Kim Dykeman (Team 2) TEAM LEAD

(ii) Timothy Lipman (Team 1)

(iii) Ross Ludwig (Team 1)

(d) Survey Team Responsibilities

(i) Survey development, administration, and results reporting

(ii) IRB approval

(iii) Contact lists

(iv) Community coordination

(e) Documentation Team

(i) Michaela Healton (Team 2) TEAM LEAD

(ii) Jeffrey Reilly (Team 1)

(iii) Branden Toro (Team 1)

(f) Documentation Team Responsibilities

(i) Midterm/Final report

(ii) Agendas

(iii) Meeting minutes

(iv) Budget Management

(v) Timesheets

(vi) Compiling engineering designs

(vii) Pictures of events, pool tests, designs, etc.

(viii) Weekly status reports

(4) The major teams are organized based on member skills and field of expertise to ensure equal distribution of talent. The minor teams are organized to include at least one member from each major team to ensure that both major teams have equal influence over the minor team's respective responsibilities and deliverables.

(5) Every sub-team member is responsible for the tasks indicated in section 9.C as delegated by the respective team leader.

2. Expected Results

A. Expected activities during the project:

(1) The technology team will be involved in researching, designing, and building a prototype device using information obtained from the survey and interview data.

(2) The communication team will be involved in researching and developing a method of communicating available information between the device and the swimmer.

(3) The survey team will update the survey to be administered at the Chicago Lighthouse. They will compile and analyze the data

and present their findings to Buoy members to aid the design process.

(4) The media team will update the Buoy website and verify that it is accessible to the BVI community through existing assistive software.

(5) The documentation team will create and deliver all required deliverables for the project, take minutes during all group meetings, and document all the progress made on the project so that the next semester will be able to continue the project without backtracking.

B. The expected data will be obtained from surveys and interviews with the BVI community, as well as research and testing done by the group. The data we hope to obtain will tell us the current problems with our device and where it needs improvement, as well as design characteristics from the BVI community that will be incorporated into developing the prototype.

C. We expect to have developed a device prototype that will most suit the community through extensive surveying and interviewing with the BVI community. We will also provide information about testing and research to future semesters so that they can improve the device to even better suit the community.

D. We expect to utilize the research done last semester to design and develop a device prototype. The media team will update the BVI accessible Buoy website.

E. The objective of this semester is to develop a working prototype device using either laser or electromagnetic field technology. We will have analyzed data obtained from the BVI community to give to next semester for future use. We will also have documented all our research, as well as the designs to recreate the prototype.

F. The ability to communicate the available information to the user of the device that is sufficient to restore function is a variable. Assumptions made about the design of the prototype device may change as a function of communication team test results and feedback from the BVI community.

G. Buoy will document and incorporate all results into a final proposal, with all results being based on extensive research and testing in coalition with the BVI community.

3. Project Budget

Category	Requested	Approved	Explanation	Status
Supplies	$100 2/6/09	Awaiting	Wires, building materials, solder, and other miscellaneous items for modifying equipment	Pending
Equipment	$375 2/6/09	Awaiting	$10 x 10 Vibration Motors $15 x 5 Water resistant wristbands $20 x 5 Batteries (for motors) $100 x1 R.F. Transmitter and receiver	Pending
Services	$25 2/6/09	Awaiting	Printing etc.	Pending
Travel	$75 2/6/09	Awaiting	Trips to stores for equipment and facilities to administer surveys, interviews and product testing	Pending
Participant Support	$100 2/6/09	Awaiting	Used for experiment/trial participants if needed	Pending
TOTAL	**$675.00**	**$0**		

4. Designation of Roles

- Master Schedule Maker: Jeffrey Reilly
- Weekly Timesheet Collector/Summarizer: Documentation Team
- Minute Taker: Documentation Team
- iGroups Facilitator: Media Team
- Website Creator and Facilitator: Media Team
- Agenda Maker: Documentation Team
- Timekeeper: Jay Park