Planning for Human Implantation of a Cortical Visual Prosthesis
Background

Intra-cortical Visual Prosthesis
Team of IIT

- Development of technology
- Safety and Functional Testing

Problem: How to proceed with human implantation of the device?

http://neural.iit.edu/visualprosthesis2.htm
Goals of the Project

To create a comprehensive, scientifically and morally justified framework for the selection of volunteers.

To assess the current state of the proposed technology and suggest improvements that would better prepare it for human implantation.
Organization of the Team

David Gorski
Team Leader

Mary DeRoo
Selection SubTeam Leader

David Gorski
Alex Leasenby
Harry Li
Hanna Pyrkh

Electrical/Computer Engineering
Biomedical Engineering
Biochemistry
Mechanical /Aerospace Engineering
Chemical Engineering
Psychology

Aanchal Taneja
Recommendations SubTeam Leader

David Bern
Shanyl Chen
Tom Kelley
Maham Subhani
Progress Towards Goals

- Team building
- Analyzed and defined the scope of the problem

- Researched the current progress of the sponsor
- Reviewed sponsor’s conformation to FDA guidelines

- Further broke down our goals into specific objectives
- Went on a tour of the Chicago Lighthouse
Major Obstacles Encountered

- An insufficient amount of similar past examples of implants exist
- Ethical considerations change depending on the technology
- Understanding the application of the equipment requires in-depth knowledge
- Group members are inexperienced with neurosurgical dilemmas
Anticipated Major Challenges

1. Difficulty defining boundaries and justifying the importance of one criterion over another
2. Possibility of being too broad and unfocused
3. Difficulty in merging the two subteams’ solutions into a final product
4. Avoiding bias from the sponsor
Where We Are Headed

Making a positive step towards the assessment of human implantation by:

1. Converging our research into a framework for subject selection

2. Providing a scientific analysis of what the sponsor has done and needs to do next

3. Compile the collective research into a final report
Questions?