### **Review of Thesis Outline (#1)**

Reviewer Name: Rami Saab

Investigator Name: Arushri Swarup

Peer Review Committee #: 9

Project Title: Needs Analysis and Time Flow Study to Assess Endoscopic Ear Surgery

*Brief description of project (to be completed by reviewer):* 

A technique known as transcanal endoscopic ear surgery (TEES) can be used to perform minimally invasive surgeries of the ear. The technique is difficult to administer and requires the surgeon to hold an endoscope with one hand while performing the procedure with the other. As such, there has been poor adoption of TEES among otologists. This project propose a study of the reasons for this low adoption rate. By using a time-flow analysis to study where instrumentation redesign is required along with a survey sent out to members of ontology societies around the world, the study will provide insights into the basis for poor TEES adoption. The results of the study will help guide the design of better surgical instrumentation and the generated knowledge will be applicable to other minimally invasive natural orifice surgical techniques.

### 1. Are the objectives/research questions clear?

You have done good job explaining the objectives of your research in a clear and concise manner. I would suggest, and this is more of a matter of style, that your research question sentence be concluded with a question mark.

### 2. *Is the outline of the literature review appropriate and complete?*

Your literature review is thorough (noting the inclusion of references). You have done a good job explaining that your proposed techniques have been utilized in similar research projects. For your final research proposal I wonder if you may need further justification for your proposed techniques. For instance, do other techniques exist to assess the feasibilities and efficacies of specialized surgical methods? Why have you chosen the techniques you have chosen? This may or may not be necessary, you will likely know best.

### 3. *Is the rationale for the study coherent and complete?*

Yes, the rationale for the study has been clearly described. As a minor point, it may be worth noting why there is a need for surgeons to utilize the new minimally invasive technique. Why is the new technique empirically better than the technique they are using now? Specifically, why is there a need to encourage adoption of the new technique? I am sure justifications for these questions exists.

### 4. Is the research innovative?

The research is important and, to my knowledge innovative in that it has not been done before.

5. Are the methods (design, measurement, analysis) appropriate to achieve the objectives?

The time flow analysis and survey methods are clearly explained. Specific statistical techniques have also been described.

# 6. Are the expected study outcomes compelling and complete?

I think the disadvantages and advantages you list in your "Expected outcomes and Significance" would be better placed in a different category. They are not quite expected outcomes or related to the significance of the project. The last two points are relevant information regarding the project significance.

## 7. *Is the study feasible?*

The study seems important and entirely feasible (given an adequate sample size can be attained).

8. Is the organization of ideas clear and easy to follow?

Following the standard thesis proposal outline format, the research proposal is both clear and easy to follow.

9. Was the document easy to read and understand?

The document is easy to read and understand. Overall, there is a good balance of emphasis between sections.

10. What is your overall assessment of the project?

My overall assessment of the project is positive. I look forward to seeing the results.

11. Please identify major issues and specific recommendations.

The thesis proposal outline is very good. You have clearly put much thought into the project and seem to be well on your way. As described earlier, I do still think that it would be valuable for you to indicate why there is a necessity to study poor TEES adoption. For instance, what are the improved health outcomes associated with TEES versus existing surgical techniques? This will provide your project with further justification.