

# Physical 3D model of the larynx with moving parts

**Client:** Sherri K. Zelazny

**Team Members:** Kevin Hanson (BSAC)  
Nick Ladwig (Communicator)  
Jonathan Meyer (Leader)  
Ken Roggow (BWIG)

**April 11 to April 17, 2008**

## Problem Statement

The goal of this project is to develop a physical 3D laryngeal model, with moving laryngeal cartilage, bones, membranes and muscle, to demonstrate nerve/muscle action and interaction in the larynx for voice, airway and swallowing. The model is to be used as a clinical tool for patient education for improved understanding of the laryngeal mechanism; and to plan treatment based on diagnosis of voice, airway and/or swallowing disorder.

## Last Week's Goals

- Finalize cartilage structure
- Test motors for correct properties
- Continue to enhance design details
- Create muscles

## Summary of Accomplishments

- Created silicone molds for cartilage
- Began casting model
- Researched timers/circuitry
- Expanded and finalized design for muscle attachment

## This Week's Goals

- Finalize cartilage structure
- Attach muscles and motors
- Build frame

## Project Difficulties

## Activities

### Kevin Hanson

4/11/08	Team Meeting	1.50 hr
4/16/08	Team Meeting (Shop)	1.75 hr

### Nick Ladwig

4/11/08	Team Meeting	1.50 hr
4/04/08	Picked up Materials	0.75 hr
4/16/08	Team Meeting (Shop)	3.00 hr
-----	Creating molds and casting	2.25 hr
-----	Progress Report	0.50 hr

### Jonathan Meyer

4/11/08	Team Meeting	1.50 hr
4/16/08	Team Meeting (Shop)	3.00 hr
-----	Circuit design	1.30 hr
-----	Selecting plaster and motors	1.00 hr

### Ken Roggow

4/11/08	Team Meeting	1.50 hr
4/16/08	Team Meeting (Shop)	1.50 hr
-----	Website	0.50 hr
-----	Making Silicone molds	1.00 hr

## Project Schedule

Tasks	Jan.	February					March				April					May	
	25	1	8	15	22	29	7	14	21	28	4	11	18	25	30	2	7
<b>Research and Development</b>																	
Research	Blue	Blue					Red										
Brainstorm		Grey	Grey				Red										
Develop Prelim. Design			Pink	Pink	Pink	Pink	Red										
Detail/evaluate design							Red	Pink	Pink								
Build Prototype							Red			Pink	Pink	Pink	Pink				
Test Prototype							Red							Brown	Brown		
<b>Website</b>		Ken															
<b>Deliverables</b>							Red										
Mid Semester Presentation							Red	Red									
Mid Semester Report							Brown	Brown									
Final Presentation							Red									Red	Red
Final Report							Red									Brown	Brown
Progress Reports	Jon	Nick															

## Expenses

\$37.00 – Silicone for molds