

Contract Sample  
CSD- Basic Science- Animal Research  
3 credit hour

#### Goals/Objectives

1. To describe the long-term and short-term goals of the project “Response of ageing intrinsic laryngeal muscles to chronic electrical stimulation” and the project “exogenous growth factors for reversal of age-related muscle denervation”
2. To acquire experience in various aspects of the research process including, but not limited to, experimental procedures, data collection, data entry, data analysis and data interpretation
3. To summarize the experimental procedures for the rat laryngeal nerve stimulation study and to independently apply the electrical stimulation of the rats’ recurrent laryngeal nerve (experimental rats) or to apply the experimental procedures to the control rats (no electrical stimulation)
4. To describe the assigned data analysis methods and to independently perform them (histology, histochemistry, or immunohistochemistry)

#### Tasks for completing objectives (with timelines)

##### Student will:

1. Read the research protocols and pilot study before the onset of the experiment.
2. Pick up and return rats to DLAR in a timely manner as directed by Dr. Dietrich
3. Following training anesthetize rats using isoflurane and connect them to electrical stimulation using appropriate voltages (experimental rats) for one hour twice a day (control rats do not receive ES)
4. Monitor experience for one hour each time and monitor the rats’ recovery from anesthesia
5. Document the experimental procedures in the laboratory notebook
6. Assist with endoscopy of the rats’ vocal folds
7. Following training, complete assigned data analyses encompassing histology, histochemistry, or immunohistochemistry

#### Criteria, with percentages, for Assessment

##### General expectations;

- For a 3 credit commitment the student will be expected to spend 6-8 hours per week, for 12 weeks in the research experience
- Timely and professional communication (within 24 hours)
- Excellent attention to detail

##### Criteria for assessment:

- Punctuality and reliability 10%
- Accurate execution of the experimental procedures following training 45%
- Accurate performance of the assigned data analysis methods (histology, etc.) following training 45%