Area of Research: **Clinical Cardiology**
Mentor: **John Rush**

Project Description:

The New York Heart Association Functional Classification Systemexists to group humans with heart failure into 1 of 4 classes. This system is based on a combination of self-reported symptoms by the patient and examination by a physician. This system has been used for research stratification and as a tool to make recommendations regarding treatment interventions. In veterinary medicine, the affected animal cannot report upon symptoms and veterinarians must rely upon owners to report clinical signs. This results in major limitations when attemtping to apply modified NYHA classification schemes to dogs and cats. In addition, cats usually fail to show clinical signs to the owner until clinical signs are present at rest, placing them in the most advanced classification level (NYHA Class IV). As a result, the International Small Animal Cardiac Health Council (ISACHC) devised a similar tool for application to veterinary clinical research and practice in 1993, the ISACHC Heart Failure Classification. Despite this revised classification system, many recent clinical research publications still use the modified NYHA classification system. There is a great deal of "gray territory" when classifying cases using either system, with some animals on the cusp of one classification group or the other. Neither system has been validated or tested in a prospective fashion to determine whether veterinary cardiologists or veterinarians in general practice apply one or the other scheme in a consistent fashion. The aims of this project are to:

1) Review recent veterinary cardiology literature to determine the frequency of these 2 classification schemes in clinical cardiology research.

2) Survey cardiologists that are members of the American College of Veterinary Internal Medicine (ACVIM) Cardiology Specialty to determine whether they use a classification system and whether they have a preference for one of the other scheme.

3) Develop a CD rom with 8-10 clinical cardiology cases (pending statistical consultation for number required) to include the historical and physical examination findings, ECG, thoracic radiographs, and echocardiographic findings. Send this CD to willing specialists (+/- veterinarians in clinical practice) and ask to have each case classified as to NYHA and ISACHC classification. Evaluate the responses to determine the agreement and consistency of classification by cardiologists (+/- veterinarians in clinical practice).

4) Statin drugs are commonly used in people and have markedly reduced morbitity and mortality. There has been very little research on use of statins

in dogs and cats with cardiovascular disease. The first step is a project to evaluate the biochemical and clinical changes that occur in normal dogs treated with statins. This project is to administer a statin drug to normal dogs, measure various biochemical parameters (lipids, C-reactive protein) and clinical indices, and thus determine a dose to be used in clinical cases.

Area of Research: **Cardiology**
Mentor: **Satyapriya Sarkar**

Project Description:

The research program deals with the cellular and genomic basis of contractility in vertebrate striated muscle and its relevance to veterinary and human medicine. The projects are: a) the structure, function and expression of human and canine striated muscle genes, b) regulation of myogenesis, c) evolution of members of mutligene family coding for myofibrillar proteins isoforms, d) genetic and biochemical analysis of familial dilated cardiomyopathy in dogs, e) molecular basis of Ca^{2+} regulation of muscle contraction, and f) alteration of Ca^{2+} sensitivity during muscle growth and pathological conditions. We use a multidisciplinary approach of cell biology, biochemistry, and molecular biology in our research. Further details of the current research in the laboratory are given in the Tufts University School of Verterinary Faculty Profile and also in http:/www.tufts.edu/sackler/cmdb/sarkar-lab.htm

Tel: 617-636-2931
Email: satyapriya.sarkar@tufts.edu