**Study Title:** Sensitization of macroscopic pulmonary osteosarcoma metastases to conventional doxorubicin therapy with synchronous pulsatile oral PAC-1

**Purpose of the study:** Pet dogs and adolescent people can develop a bone cancer called osteosarcoma (OS), which causes excruciating pain locally and spreads to other parts of the body, in particular the lungs. Once OS tumors are detected in the lungs, few effective treatment options are available and most chemotherapies are ineffective in shrinking large tumors. PAC-1 is a new drug that can sensitize tumor cells to chemotherapy treatment. In research studies, PAC-1 is well-tolerated by pet dogs with cancer, and can be safely used for treating different types of cancers. It is hoped that slowing the progression of OS will result in longer survival of these dogs. Should you decide to enroll your pet in this clinical trial, your dog will receive alternating weeks of PAC-1 and doxorubicin over the course of 10 weeks.

**Inclusion Criteria:**
- Dogs with osteosarcoma that has spread only to the lungs
- Dogs with adequate organ function indicated by standard laboratory tests
- Dogs who have not had previous administration of doxorubicin, epirubicin, or mitoxantrone
- Dogs who do not have cardiac arrhythmias

**Eligibility Diagnostics:**
Prior to study entry, pet owners will be financially responsible and required to have the following diagnostics performed on their pet: 1) Screening blood work and urinalysis, 2) thoracic radiographs and abdominal ultrasound, 3) cytologic or histopathologic confirmation of osteosarcoma.

**Treatment:**
All dogs enrolled will have 6 visits over the course of 10 weeks. Dogs will alternate receiving PAC-1 (at home) and doxorubicin (outpatient) each week. When receiving doxorubicin, dogs will also have an EKG and bloodwork performed.

**Compensation:**
Following enrollment, dogs will receive PAC-1 and doxorubicin through trial funding. Additional costs associated with the investigation will be paid for by study funds, which include all costs directly associated with scheduled recheck visits (drug administration, electrocardiograms, blood work, follow up thoracic radiographs). Pet owners will be responsible for initial diagnostics performed to confirm study eligibility (See Eligibility Diagnostics, ~$650).

**Contact Information:** Please feel free to call Rebecca Kamerer at (217) 300-6453 or rmoss81@illinois.edu to refer a patient or for any additional information. Referring veterinarian and client call are welcome.