<table>
<thead>
<tr>
<th>University/College</th>
<th>Species</th>
<th>Induced (I) or Naturally Occurring (NO)</th>
<th>Non-Rodent Model details</th>
<th>Human Disease condition the model represents</th>
<th>Prevalence of the disease</th>
</tr>
</thead>
<tbody>
<tr>
<td>NCSU/CVM</td>
<td>Dog</td>
<td>I</td>
<td>Cartilage defect model various joints for regeneration studies</td>
<td>Cartilage loss from trauma or OA</td>
<td>NA</td>
</tr>
<tr>
<td>NCSU/CVM</td>
<td>Dog</td>
<td>I</td>
<td>Various external beam irradiation protocols can be used to induce erectile dysfunction in association with prostatic irradiation</td>
<td>Radiation therapy induced erectile dysfunction, in men with prostate cancer</td>
<td>NA</td>
</tr>
<tr>
<td>NCSU/CVM</td>
<td>Pig</td>
<td>I</td>
<td>Intestinal segmental vascular occlusion, reversible and non-reversible</td>
<td>Intestinal strangulation, intestinal transplantation, NEC, vascular occlusion/infarct</td>
<td>variable</td>
</tr>
<tr>
<td>NCSU/CVM</td>
<td>Pig enteroids</td>
<td>I</td>
<td>In vitro tool to study intestinal epithelium</td>
<td>Currently, possible, other injury models available</td>
<td>NA</td>
</tr>
<tr>
<td>NCSU/CVM</td>
<td>Pig</td>
<td>I</td>
<td>Esophageal injury</td>
<td>GED, esophageal adenocarcinoma</td>
<td>EAC 5-year survival of &lt;17%</td>
</tr>
<tr>
<td>NCSU/BME</td>
<td>Pig</td>
<td>I</td>
<td>Cartilage defect model</td>
<td>Cartilage loss from trauma</td>
<td>NA</td>
</tr>
<tr>
<td>NCSU/BME</td>
<td>Pig/Goat</td>
<td>I</td>
<td>ACL injury/reconstruction model</td>
<td>ACL injury and surgical treatment</td>
<td>impact of antimicrobials on GI flora: Reference for C. difficile, antibiotic induced diarrhea and antimicrobial resistance</td>
</tr>
<tr>
<td>NCSU/CVM</td>
<td>Cow, Pig</td>
<td>I</td>
<td>Measurement of intestinal drug concentrations for PK modeling</td>
<td>FIV, immunopathogenesis and lymphocyte epigenetics during chronic viral infection, antiviral drug regimens</td>
<td>HIV</td>
</tr>
<tr>
<td>NCSU/CVM</td>
<td>Cat</td>
<td>I &amp; NO</td>
<td>Study collaboration with UC, canine immune epigenetics, T cell epigenetics and dysfunction, mother to infant transmission</td>
<td>Genital: Infertility, ectopic pregnancies, ... , Cyclic: Trichomoniasis</td>
<td>20-90% depending on site of infection</td>
</tr>
<tr>
<td>NCSU/CALS</td>
<td>Chicken and Turkey</td>
<td>I &amp; NO</td>
<td>Infectious disease</td>
<td>Respiratory and skin infections</td>
<td>Major cause of morbidity and mortality of poultry</td>
</tr>
<tr>
<td>NCSU/CALS</td>
<td>Chicken and Turkey</td>
<td>I &amp; NO</td>
<td>Salmonella</td>
<td>Poultry are considered major source of foodborne pathogens</td>
<td>Common</td>
</tr>
<tr>
<td>NCSU/CVM</td>
<td>Horse</td>
<td>I</td>
<td>Tendinopathy</td>
<td>Tendinopathy</td>
<td>Common</td>
</tr>
<tr>
<td>NCSU/CVM</td>
<td>Cow, Pig</td>
<td>I &amp; NO</td>
<td>Kinetics and Transdermal Delivery in Porcine</td>
<td>Dermatitis with metal working fluids (MWF)</td>
<td>MWF dermatitis prevalence is 33%</td>
</tr>
<tr>
<td>NCSU/CVM</td>
<td>Cow, Pig</td>
<td>I</td>
<td>Diarrheal diseases</td>
<td>Infectious diarrheal disease</td>
<td>very common</td>
</tr>
<tr>
<td>NCSU/CVM</td>
<td>Dog</td>
<td>NO</td>
<td>Osteoarthritis</td>
<td>Osteoarthritides pain; Chronic Pain; Musculoskeletal pain</td>
<td>30% of the canine population</td>
</tr>
<tr>
<td>NCSU/CVM</td>
<td>Dog</td>
<td>NO</td>
<td>Various solid tumors</td>
<td>Many malignancies, involving but no limited to soft tissue sarcoma, osteosarcoma, mucosal melanoma, muscle invasive bladder cancer, primary lung and liver carcinomas, etc.</td>
<td>variable</td>
</tr>
<tr>
<td>NCSU/CVM</td>
<td>Dog and Cat</td>
<td>NO</td>
<td>Diabetes Mellitus</td>
<td>T2DM in dog, T2DM in cat</td>
<td>animals</td>
</tr>
<tr>
<td>NCSU/CVM</td>
<td>Dog and Cat</td>
<td>NO</td>
<td>Urinary Incontinence</td>
<td>Female urinary incontinence</td>
<td>Up to 20% of spayed female dogs</td>
</tr>
<tr>
<td>NCSU/CVM</td>
<td>Dog</td>
<td>NO</td>
<td>T-cell lymphoma</td>
<td>Peripheral T-cell lymphoma (PTCL-NOS)</td>
<td>Many malignancies of lymphosarcoma of dogs (1% of canine accessions in the Veterinary Medical Database); the T-cell form occurs 22-33% of the time.</td>
</tr>
<tr>
<td>NCSU/CVM</td>
<td>Dog and Cat</td>
<td>NO</td>
<td>Carcinoid, thryoids</td>
<td>Adenocarcinoma (Carcinoid, skeletal (carcioid, hypereosinophilic)</td>
<td>Very common in both cats and dogs</td>
</tr>
<tr>
<td>NCSU/CVM</td>
<td>Dog and Cat</td>
<td>NO</td>
<td>Intestinal Disease</td>
<td>Female urinary incontinence</td>
<td>Variable, very common by species and by dog breed</td>
</tr>
<tr>
<td>NCSU/CVM</td>
<td>Dog</td>
<td>NO</td>
<td>Tumors</td>
<td>Numerous cancers</td>
<td>variable</td>
</tr>
<tr>
<td>NCSU/CVM</td>
<td>Cat</td>
<td>NO</td>
<td>Osteosarcoma</td>
<td>Osteosarcoma</td>
<td>variable</td>
</tr>
<tr>
<td>NCSU/CVM</td>
<td>Cat and Dog</td>
<td>NO</td>
<td>Arthritis</td>
<td>Arthritis</td>
<td>Variable</td>
</tr>
<tr>
<td>NCSU/CVM</td>
<td>Cat and Dog</td>
<td>NO</td>
<td>Hypertrophic Kidney</td>
<td>Similar to benign adenomatous goiter in humans</td>
<td>Common</td>
</tr>
<tr>
<td>NCSU/CVM</td>
<td>Dog</td>
<td>NO</td>
<td>Epilepsy</td>
<td>Epilepsy</td>
<td>Common</td>
</tr>
<tr>
<td>NCSU/CVM</td>
<td>Cat</td>
<td>NO</td>
<td>Diabetes Mellitus</td>
<td>Diabetes Mellitus</td>
<td>Common</td>
</tr>
<tr>
<td>NCSU/CVM</td>
<td>Dog and Cat</td>
<td>NO</td>
<td>Lung and liver carcinoma, muscle invasive bladder cancer, primary lung and liver carcinomas, etc.</td>
<td>Variable, very common by species and by dog breed</td>
<td></td>
</tr>
<tr>
<td>NCSU/CVM</td>
<td>Dog</td>
<td>NO</td>
<td>Equine asthma syndrome (hyperreactive airway, bronchoconstriction, excess mucus)</td>
<td>Asthma, very important pediatric / young adult cancer</td>
<td>10-15% of adult horses in the northern hemisphere</td>
</tr>
<tr>
<td>NCSU/CVM</td>
<td>Cat</td>
<td>NO</td>
<td>Epilepsy</td>
<td>Epilepsy</td>
<td>Common</td>
</tr>
<tr>
<td>NCSU/CVM</td>
<td>Dog</td>
<td>NO</td>
<td>Acute spinal cord injury</td>
<td>Acute spinal cord injury</td>
<td>Very common in particular breeds</td>
</tr>
<tr>
<td>NCSU/CVM</td>
<td>Dog</td>
<td>NO</td>
<td>Chronic polyarthritis</td>
<td>Chronic polyarthritis</td>
<td>Very common in particular breeds</td>
</tr>
<tr>
<td>NCSU/CVM</td>
<td>Dog</td>
<td>NO</td>
<td>Acute on chronic spinal cord injury</td>
<td>Caudal cord syndrome</td>
<td>Very common in particular breeds</td>
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<tr>
<td>NCSU/CVM</td>
<td>Dog</td>
<td>NO</td>
<td>Hereditary ataxia</td>
<td>Hereditary ataxia</td>
<td>Very common in particular breeds</td>
</tr>
<tr>
<td>NCSU/CVM</td>
<td>Dog</td>
<td>NO</td>
<td>Chast malformation/neuropathic pain</td>
<td>Chast malformation/neuropathic pain</td>
<td>Very common in particular breeds</td>
</tr>
<tr>
<td>NCSU/CVM</td>
<td>Dog and Cat</td>
<td>NO</td>
<td>Paroxysmal movement disorders</td>
<td>Paroxysmal movement disorders</td>
<td>Common</td>
</tr>
<tr>
<td>NCSU/CVM</td>
<td>Dog and Cat</td>
<td>NO</td>
<td>Osteoarthritis</td>
<td>Osteoarthritis</td>
<td>Common</td>
</tr>
<tr>
<td>NCSU/CVM</td>
<td>Dog and Cat</td>
<td>NO</td>
<td>Osteoarthritis</td>
<td>Osteoarthritis</td>
<td>Common</td>
</tr>
</tbody>
</table>