Long live blue skies, where hope is a kite and dreams really do come true.

- Suzi Beber
  Founder, Smiling Blue Skies Cancer Fund
  Honorary Doctorate recipient, University of Guelph
  www.smilingblueskies.com

The Ontario Veterinary College (OVC) at the University of Guelph is a world class centre of excellence. Thanks to the ongoing support of Suzi Beber and Smiling Blue Skies volunteers over the past 18 years, we are able to continuously invest in improving companion animal health and well-being in the field of cancer care and discovery.

OVC Pet Trust is fortunate to benefit from Suzi’s passion and devotion to help pets. What began with a $1,000 donation in memory of her dog Blues in 2000 has grown to become a community of dedicated supporters who share in our mission to help the pets we love, live longer, healthier lives.

Giving back to help pets and their people is at the heart of Suzi’s commitment to change the face of cancer. Since 2001, Suzi and her community have raised $1.8 million for OVC Pet Trust. In addition to supporting vital research and cancer care, Smiling Blue Skies has also helped us to provide crucial equipment, staff and resources to operate OVC’s animal cancer centre. Through your support, we built the Smiling Blue Skies Comfort Room and equipped the centre with state-of-the-art lighting for treatment areas.

This year marks four years of Smiling Blue Skies’ support of the role of OVC’s Clinical Trials Coordinator. Since 2014, approximately 1,090 cancer patients have been recruited to take part in 35 oncology-related clinical research studies at OVC. With your support, these projects are helping to improve the diagnosis, treatment and care for pets who are battling cancer.

On behalf of all of the pets and their people who have benefitted from the support of Smiling Blue Skies – thank you for making a true difference and impacting cancer care for the better.

Kim Robinson
Managing Director, OVC Pet Trust

Thank you! You are receiving a copy of the Smiling Blue Skies Cancer Fund 2018 Update Report as a thank you for your support of OVC Pet Trust and cancer care, teaching and research at the Ontario Veterinary College, University of Guelph.
The Clinical Trials Coordinator manages clinical studies within the Health Sciences Centre at the Ontario Veterinary College. This role supports cancer and advanced disease clinical research, helps to maximize awareness, manage pet owners’ expectations and increase participation in clinical trials. This work ensures studies are able to achieve critical mass, collect appropriate data and help as many pets as possible.

The coordinator oversees recruitment of owners and their pets, the collection of necessary data and acquisition of samples for tumour banking. Working with specialists throughout the OVC Health Sciences Centre, the coordinator actively seeks patients from all veterinary specialty services that could be included in a clinical trial and advance veterinary knowledge that could lead to the discovery of potential new treatment options that could help current or future patients.

In addition to working with the principal investigators, the coordinator maintains strong relationships with pet owners, explains the steps once a pet is involved in a trial, obtains consent for participation and monitors how pets respond to treatments.

This role is vital to the cancer care OVC offers to patients and their people, while simultaneously helping to advance cancer research.

About the Health Sciences Centre at the Ontario Veterinary College, University of Guelph

The Ontario Veterinary College’s Health Sciences Centre (OVC-HSC) is a busy hub of specialized veterinary care and research located at the University of Guelph, approximately 1.5 hours outside of Toronto. The companion animal hospitals within the centre employ 31 clinicians and 45 registered veterinary technicians (RVTs). The OVC-HSC medical team also includes two residents, 11 companion animal interns, 22 Doctor of Veterinary Science students (DVSc), veterinary graduate students focused on a variety of specialties within companion animal medicine.

Open 24 hours a day, OVC-HSC treats companion animals in need of advanced care. Our veterinary care team manages approximately 21,000 pet patient visits each year. About 5,000 patient visits are to the Mona Campbell Centre for Animal Cancer.

The Ontario Veterinary College is currently conducting more than 25 companion animal-related clinical trials in specialty care areas such as oncology, nutrition, emergency care, advanced surgical techniques and more. Each study aims to help advance medical treatments that can improve the health or quality of life for our pets.

What is a Clinical Trial? Clinical trials are research studies used in all specialties of human and veterinary medicine to evaluate new medical devices, vaccines, diagnostic tests and treatments. These trials may investigate new types of surgical or other procedures as well as novel medical therapies for patients.

What are the benefits of participating in a clinical trial? Clinical trials allow clinicians to discover new and improved ways to prevent, diagnose or treat patients. By participating in a clinical trial, your pet may benefit by: gaining access to new treatments that are not yet available to the public; obtaining expert medical care at a leading health care facility; playing an active role in developing a specialized healthcare plan; and helping others by contributing to medical research.

How can my pet take part in a clinical trial at OVC? Pet owners should talk to their family veterinarian about clinical trial treatment and referral options to OVC. To see the full list of current clinical trials please visit the OVC Health Sciences Centre website:

http://ovc.uoguelph.ca/icci/trials

In photo (left): OVC Tumour Banker, Kaya Skowronski and OVC Clinical Trials Coordinator, Vicky Sabine.
THE DISTRIBUTION OF THE NINE MOST PREVALENT CANINE TUMOUR TYPES IN THE COMPANION ANIMAL TUMOUR SAMPLE BANK

Abbreviations:
HSA: hemangiosarcoma
SCC: squamous cell carcinoma

THE FOUR MOST PREVALENT FELINE TUMOUR TYPES BANKED AT OVC*

<table>
<thead>
<tr>
<th>Tumour Type</th>
<th>Number of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mammary</td>
<td>13</td>
</tr>
<tr>
<td>Soft Tissue Sarcoma</td>
<td>9</td>
</tr>
<tr>
<td>Osteosarcoma</td>
<td>8</td>
</tr>
<tr>
<td>Lymphoma</td>
<td>7</td>
</tr>
</tbody>
</table>

CLINICAL CANCER STUDIES AT THE ONTARIO VETERINARY COLLEGE CURRENTLY SEEKING ONCOLOGY PARTICIPANTS

CANEINE ONCOCLOGY STUDIES:
- Evaluation of a recombinant, attenuated Listeria monocytogenes expressing a chimeric human HER2/neu protein in dogs with osteosarcoma in the adjuvant setting. (Please see below for further information).
- Profiling and validation of extracellular vesicles as circulating biomarkers in canine osteosarcoma: a DOGBONE project (please see: https://ovc.uoguelph.ca/news/canine-researchers-team-dogbone)
- Identification of response to chemotherapy in relapsed canine lymphoma patients
- Prognostication of canine T-cell lymphoma
- Investigating biomarkers for metronomic cyclophosphamide treatment of canine soft tissue sarcoma
- Acute Myeloid Leukemia Study

ONCOLOGY-RELATED STUDIES:
- Evaluating crossmatch incompatibility to increase safety of blood transfusion in cats and dogs
- Feline acute kidney injury study
- BUN/creatinine and BUN/symmetric dimethylarginine ratio in dogs with occult gastrointestinal bleeding
- Usefulness of blood urea nitrogen(BUN)/creatinine and BUN/ symmetrical dimethylarginine (SDMA) ratio in localizing gastrointestinal bleeding in dogs
- Nutrition survey of Healthy Dogs and Dogs with Cancer

Several oncology studies finished recruiting new patients in 2018 & 2017 however samples are still being collected and information obtained from the patients (n=159) who continue to receive care at the ACC. Including:

- Evaluation of the safety and effectiveness of standard-of-care therapy, with or without adjuvant rapamycin administration in dogs with osteosarcoma
- Analysis of cytokines in dogs with osteosarcoma treated with amputation, radiation and/or chemotherapy
- microRNA profiling for diagnosis and prognosis in canine multicentric lymphoma
- Detection of Minimal Residual Disease in Canine Lymphoma
- Effect of lymphoma on the blood test for kidney disease
- Non-invasive detection and quantification of circulating tumour cells in dogs with appendicular osteosarcoma

Patient Lulu.

“Lulu means the world to us. We are so thankful OVC was there to support us during one of the most devastating times in our life. It’s difficult to put into words how grateful we are OVC was there when our family needed it most.”
Bone cancer (osteosarcoma) is a particularly aggressive disease in dogs — one that has limited treatment options and is almost always fatal. Treatment usually involves limb amputation when possible. But unfortunately, due to the aggressive nature of canine osteosarcoma, the disease usually metastasizes to the lungs, just like the human form of the disease that struck Canadian icon Terry Fox.

In response, a group of researchers at the University of Guelph called the Dog Osteosarcoma Group – Biomarkers of Neoplasia (or DOGBONe) have teamed up to determine more accurate ways to assess patients with osteosarcoma.

Their main objective is to identify biomarkers (the quantitative substances that suggest the presence of diseases in organisms) to assess patients with osteosarcoma.

In response, a group of researchers at the University of Guelph called the Dog Osteosarcoma Group – Biomarkers of Neoplasia (or DOGBONe) have teamed up to determine more accurate ways to assess bone cancer.

Their main objective is to identify biomarkers (the quantitative substances that suggest the presence of diseases in organisms) to assess patients with osteosarcoma.

The differences between osteosarcoma in dogs and humans are so slight that even computers aren’t able to distinguish between tumour samples from each species based on gene expression patterns. Because the cancer in dogs and humans is so similar, any progress in developing better treatments for one means progress for the other as well.

“The dogs are a model for the worst of the human disease,” said Prof. Geoff Wood, Ontario Veterinary College’s (OVC) Department of Pathobiology. “Right now, the information we find out in human osteosarcoma serves as a model for the dogs. There’s an opportunity to go both ways between the species, for the benefit of both.”

DOGBONe comprises U of G’s top osteosarcoma researchers from across all four departments at OVC, including co-leaders Wood and Alicia Viloria-Petit of the Department of Biomedical Sciences. Other members include Profs. Brigitte Brisson, Tony Mutsaers, Michelle Oblak and Paul Woods from the Department of Clinical Studies, Byram Bridle from the Department of Pathobiology and David Pearl from the Department of Population Medicine.

The researchers will be exploring liquid biopsies (blood, serum and plasma) and other potential signifiers at the cellular level to see if they can find biomarkers for the canine cancer.

By approaching osteosarcoma from different angles and utilizing each researcher’s expertise in their separate fields, DOGBONe members hope to find ways to connect biomarkers to the aggressiveness of the disease at the cellular and molecular level. They want to know what allows some dogs to survive for longer than others.

Dogs that are diagnosed with osteosarcoma are often referred to the Mona Campbell Centre for Animal Cancer at the Ontario Veterinary College to receive surgery and chemotherapy or palliative care, where they receive treatment to lessen their pain. These patients are able to contribute samples to the OVC Companion Animal Tumour Bank, providing crucial material for researchers to analyze.

While the members of DOGBONe continue to have their individual and small collaborative projects funded though the OVC Pet Trust, the researchers are presently seeking funding as a group, and are now undertaking collaborations with researchers looking at osteosarcoma in humans.
YOUR SUPPORT IS MAKING A DIFFERENCE
Together we are advancing canine cancer care and discovery

Since 2014 - 2018*, 1090 patients have been recruited into 35 oncology-related studies (many OVC Pet Trust funded). Currently 18 studies are active - 12 are open for recruitment and another 6 are closed for recruitment for which we are still actively tracking 159 patients, collecting samples & obtaining follow-up.

Early in 2018 we started recruitment for our third trial in collaboration with USA NIH Comparative Oncology Trial Consortium - ‘Evaluation of an attenuated Listeria vaccine expressing an human HER2/neu protein in dogs with osteosarcoma’. We are the only Canadian centre involved in this multi-centre clinical trial (17 sites) with the NIH Comparative Oncology Trials Consortium (COTC) group.

The pilot study (n=18) reported that overall survival rates at 1, 2 and 3 years for dogs treated with this vaccine were 78%, 61% and 50% respectively (Mason et al, 2016 – fyi paper attached, along with consent form & info sheet). In comparison, 1-2yr survival rate is ~15% following current standard of care (amputation and chemotherapy).

* Smiling Blue Skies funding began for the Clinical Research Coordinator position Jan 2015.
OVC Pet Trust, founded in 1986 at the Ontario Veterinary College, University of Guelph, is Canada’s first charitable fund dedicated to the health and well-being of companion animals.

OVC Pet Trust honours the relationship between pets, their people and veterinary caregivers by raising funds to support innovative discoveries that improve the prevention, diagnosis and treatment of diseases of pets.

Funds also help train veterinarians to provide exceptional healthcare for pets and provide equipment and facilities for the Ontario Veterinary College.

University of Guelph  
Charitable Registration Number:  
10816 1829 RR 0001