



PET CANCER CENTER **CASE**



Lyndsay Kubicek, DVM DACVR (Radiation Oncology) *Staff Radiation Oncologist* *Medical Director*

Dr. Kubicek joined CASE in July of 2021, moving from Boston, MA where she was the Radiation Oncologist at Angell Animal Medical Center. Dr. Kubicek is originally from Boston, earning her undergraduate degree at Northeastern University. She attended veterinary school at the Atlantic Veterinary College at the University of Prince Edward Island. She completed her rotating internship, clinical trial internship and residency at the University of Wisconsin. She was an assistant professor at the University of Florida prior to working at Angell AMC. Dr. Kubicek is a leader in advanced radiation therapy treatments including stereotactic radiation, intensity-modulated-radiation-therapy and Rapid Arc therapy. She loves working as part of a fully integrated cancer center, allowing her patients to receive comprehensive and innovative evaluations and treatments. Outside of work she enjoys spending time with her family, 3 poorly-trained dogs and cheering on all her Boston sports teams.



Sarah Dykstra *Radiation Oncology Nurse*

Sarah has been with CASE for the past 10 years and was at the Alpenglow location in Boulder before the practice merged and became CASE. She was a Veterinary Internal Medicine Nurse for 9 years at Alpenglow before joining Dr Kubicek in July 2021 as a Radiation Oncology Nurse. Sarah moved to Colorado from Illinois in the summer of 2012 and she is a die-hard Chicago sports fan - Bears, Bulls, Blackhawks, and White Sox! Sarah worked in general practice for 16 years in Illinois before joining specialty services here in Colorado. At her practice in Illinois, she was a Surgery and Anesthesia Nurse, she managed the laboratory, and worked with exotic animals including reptiles, rodents, primates, marsupials, birds, and some smaller farm animals. She was also the hospital's wildlife coordinator and worked with the department of agriculture to keep their emergency rehabilitation licensure in compliance. Sarah is passionate about the human/animal bond, education, and being a resource for her clients. When she is not at work she spends her time with her teenage daughter and enjoys gardening, hiking, paddle boarding, glamping, doing non-stop home improvement projects, and wrangling her three indoor cats Spirit, Walter, and Princess Potato Chip aka Naughty Kitty.



Nicole Hebdon

Client Liaison

Nicole has been at CASE for a year and has enjoyed the steep learning curve of specialty medicine from day one. While not medical, she loves coordinating schedules and connecting clients and their pets with our team, drawing on what she learned working 4 years in reception at a General Practice/Urgent Care Hospital in St Paul, Minnesota. Nicole finally had enough of Minnesota winters and moved to Colorado for the milder temperatures and beautiful mountain views. Prior to COVID, she spent time backpacking through Southeast Asia where she volunteered on a wildlife refuge working with monkeys, bears, elephants, wild boar, and one particularly cranky cassowary. She's also backpacked through Morocco, Greece, Amsterdam, and Paris, and spent a perfect five months living and working on a jungle farm in Costa Rica. Now, she spends her free time sitting on the patio of her mountain cottage watching the world go by.



Kali Gillette

Anesthesia Technician

Kali has been at CASE for almost a year now. She has been working in veterinary medicine for the past five years, with a background in medical and radiation oncology, ICU and anesthesia. She holds a special interest in anesthesia and eventually plans on going for her veterinary technician specialty in anesthesia. She especially loves learning new techniques for complex cases. Kali is passionate about making veterinary visits a positive experience for her patients. When not at work, Kali can be found camping, hiking, or just lounging at home with her family, two dogs, and two cats (yes, the cats come on their adventures too!). She also has two horses that she loves to go work with and exercise.



Melissa Phillips

Veterinary Technician

Melissa Phillips joined the CASE team in June 2022 as a Veterinary Technician. Melissa attended North Carolina State University obtaining a Bachelor and Master's degree in International Economics. She previously worked as a financial analyst for nearly 10 years. She has worked for US Army Europe in Kaiserslautern, Germany & a couple of Intelligence, Surveillance, and Reconnaissance (ISR) organizations for the Department of Defense at Fort Huachuca, AZ and Fort Bragg, NC. During the pandemic Melissa decided to change careers and attend Veterinary Technician schooling at Bel Rea. As a technician she worked in Emergency Vet Medicine before joining the CASE team. Melissa enjoys working as a part of the oncology and patient care team (ICU). She enjoys learning more about the innovative technology behind cancer treatment as well as being able to see the animals start to feel better. In her spare time Melissa likes to spend time with her husband, two dogs, baking, and hiking.



Caitlin Holloway

Radiation Therapist

Caitlin joined CASE in October of 2022 as a Radiation Therapist, coming from the human medicine arena. She grew up between Alaska and Washington, loves all things animals and had planned on becoming a Veterinarian until her own cancer diagnosis at age 14 changed her course. Now she is able to merge her desire to use her past experience to help others and her love for animals here at CASE! She's also one of those crazy people that does Ironman triathlons for fun. Caitlin is a proud dog mom to a 1-year-old English Cream Golden Retriever who is in training to be a Therapy Dog and has a special heart for goofy big dogs.



Kellie Godbout

Client Care Coordinator

Kellie is the new Client Care Coordinator for the oncology department. She has always had an affinity for animals and joined CASE in August 2022 as part of the reception team. When this new position was created, she saw her opportunity to take her love for client communications and passion for animals and merge them into one. When she is not making relationships with the amazing clients and their pets here at CASE, she enjoys traveling, hiking/camping and being out in nature. Originally a Florida native, she cannot get enough of the mountains she now calls home. If she isn't having a case of wanderlust, she is in with her two loving cats named Ino and Kurama.



What to Expect when Scheduling Radiation Therapy Treatments

We understand having a pet with cancer is very difficult. We offer daily drop off appointments and overnight boarding to help reduce any additional stress for you or your pet during this process.

Daily drop off for admit

A daily drop off appointment consists of dropping off your pet between 7:00 and 8:00am. You will be greeted by one of our team members. The admitting staff will ensure that we have your contact information and relay any questions or concerns you have.

You will receive an update when your pet has completed therapy, and a suggested pickup time. You do not need to pick your pet up right away – you may come any time after the suggested pick-up time.

Our entire radiation oncology team works hard each day to ensure that each patient is treated in a safe, compassionate, and timely manner. That said, there are no guaranteed treatment or discharge times. Some patients may be treated and discharged in the morning, while others may not go home until the evening. Discharge times will vary from day to day. We will do our best to keep you updated on your pet's status throughout the day. We recognize that transit to and from the hospital each day can be difficult – we are always able to offer overnight boarding if this is more convenient for you (see below).

We can give your pet lunch as soon as they are awake and any medications that are needed.

- Please bring any medications that are due during the day in their **original bottle/packaging**.
- If your pet is on a special diet please bring that with you as well, otherwise we have many yummy foods to offer!
- Due to the risk that raw diets present to both animals and staff in our hospital, **we do not allow raw diets for any patients undergoing chemotherapy or radiation treatments**. This includes both food at home and here in the hospital. If you are feeding a raw diet at home, we ask that you switch to a cooked diet for the duration of your pet's treatment.



Overnight and weekend boarding

Overnight boarding is available during the week and weekends. This means admitting your pet to the hospital on the morning of therapy or the night before therapy. Some patients will stay overnight for the duration of treatment while others will stay only certain nights, depending on your needs.

- **Medical boarding** is for patients that are stable and would normally go home daily but for travel or scheduling reasons will board during treatment. The cost of boarding during the day is part of the radiation package and overnight and weekend boarding is an additional cost.
 - Should a patient's status change requiring hospitalization they will be either transferred to the appropriate specialty team. You will be contacted by the doctor and they will review concerns with you, discuss diagnostic and therapeutic recommendations, and provide an estimate.
- **Hospitalization** is for patients that require more intensive care and monitoring such as multiple intravenous medications, blood transfusions, or oxygen therapy. This is not part of the radiation therapy package and is an additional cost.

Our goal is to ensure your pet is happy and enjoying their time in the hospital. Most patients acclimate very quickly to a new routine and adapt to hanging out with us during the stay.

As with daily admit cases, we will feed your pet and administer any medications that are needed. Please bring any medications that are due during the day in their original bottle/packaging. If your pet is on a special diet please bring that with you as well, otherwise we have many yummy foods to offer!

We also have beds and blankets to keep your pet comfortable and cozy. Please note that in order to maintain our infection control standards, we do not allow personal items from home, such as blankets, toys, and clothing.



Radiation patient treatment agreement

Thank you for entrusting us with your pets' care! In order to ensure that we meet your expectations for treatment, please read the following policies & procedures carefully. Your signature indicates that you have read and understand this information.

1. Our entire radiation oncology team works hard each day to ensure that each patient is treated in a safe, compassionate, and timely manner. That said, there are no guaranteed treatment or discharge times. Some patients may be treated and discharged in the morning, while others may not go home until the evening. Discharge times will vary from day to day. We will do our best to keep you updated on your pet's status throughout the day. We recognize that transit to and from the hospital each day can be difficult – we are always able to offer overnight boarding if this is more convenient for you.
2. While your pet is with us for treatment, we strive to provide frequent updates. In some cases, treating patients or other responsibilities preclude us from providing updates. In this case, please assume that “no news is good news.” If any issues of concern arise with your pet, you will be notified as soon as possible. At a minimum, you will be notified when your pet is finished with treatment for the day.
3. The radiation oncologist may not be readily available to speak with during your pet's treatments. We strive to respond to all questions/concerns within 24 hours.
4. Each patients' disease and response to radiation is different. We try to be realistic in our predictions of prognosis and side effects related to treatment, but unanticipated outcomes and complications do arise.
5. We recognize that cost is an important factor in decision making, and aim to provide transparent financial estimates for treatment. These estimates do not include costs associated with side effect management or other unforeseen complications.
6. An Elizabethan collar (E-collar or cone-collar) may be recommended for many patients to prevent them from removing their IV catheter during treatment or traumatizing their radiation site. Self-trauma to the radiation site can result in severe complications, and disruption/removal of the IV catheter can result in severe bleeding or additional costs associated with replacement. If an E-collar is recommended for your pet during or after treatment, strict adherence to using the collar is required.



Radiation Frequently Asked Questions

Please follow the link below for Radiation Therapy for Cancer: Questions and Answers provided by the National Cancer Institute. <http://www.cancer.gov/cancertopics/factsheet/therapy/radiation>

Additional FAQs

What does my initial appointment involve?

During your first appointment you will meet members of our oncology service including assistants/technicians and a board-certified radiation oncologist. On occasion we have interns, residents and visiting clinicians or students with our service. Your pet's appointment will include discussion of what type of disease your pet has, expected prognosis, recommended testing and treatment options. We will design an individualized treatment for you and your pet's needs.

What tests will be done?

This will depend on which tests, and when they were done by your veterinarian. For most radiation therapy treatments, a radiation planning CT scan is needed, and other imaging may be recommended.

Why are additional CT scans or MRIs needed?

All recommended imaging is intended to ensure the best and safest treatment for your pet.

In most cases, a CT scan is needed for radiation therapy planning. Our radiation planning system needs information on tissue density to determine how radiation will interact with the tissues (for example, the difference in bone, muscle and air). Our system is linked with our CT scanner. This means that even if your pet has already had a CT scan performed at another hospital, a new scan will need to be performed. To allow for precise radiation delivery, patients must be specially positioned for their radiation planning CT.

An MRI in addition to a CT scan may be needed for certain tumors, most commonly brain and spinal cord tumors. MRI and CT are used in concert because MRI provides better at brain detail than CT, but MRI does provide information on tissue density.

Will my pet need to be fasted?

Yes, as your pet may need sedation for imaging or additional procedure, please do not feed your pet after midnight the night before your appointment. Your pet is allowed to drink water up until your appointment. Any medications may be administered as usual with a tiny amount of food. Patients



with conditions that complicate fasting – such as diabetes or insulinoma – are excluded from this recommendation.

When will my pet start radiation treatments?

Typically, patients will not receive radiation treatment the same day as their appointment, although other treatments may be recommended. Most patients will require a CT scan prior to allow for radiation planning (see above). This scan is typically scheduled within 1-2 weeks of your initial appointment. Depending on the type of treatment, a patient-specific plan may take 24-72 hours to generate. Each radiation treatment plan then goes through a rigorous set of quality assurance tests.

Your doctor will discuss with you during your appointment when radiation delivery is anticipated to start.

How long is a radiation treatment protocol? How is the schedule determined?

Radiation protocols can vary from 1 single treatment to 20 treatments. This is based on the type of tumor your pet has, the location of the tumor, and overall health of your pet. Your doctor will discuss the advantages and disadvantages of various treatment protocols with you during or shortly after your appointment.

Will my pet have daily anesthesia?

Yes, your pet will undergo anesthesia for each treatment. Anesthesia is required to ensure that your pet does not move during their treatment, as the radiation is very focused on the tumor and away from normal structures. The anesthesia is generally brief and your pet will be monitored throughout the entire treatment and recovery. CASE has a board-certified veterinary anesthesiologist who oversee all patients undergoing anesthesia, as well as highly-trained dedicated veterinary technicians who specialize in radiation anesthesia.

How long is an individual treatment?

Individual treatments may vary from less than 30 to 90 minutes. This depends on the protocol, positioning, and amount of radiation dose your pet receives each day. Following anesthesia your pet will be monitored to ensure they recover safely. Some patients need more time than others to wake up from anesthesia.

Will my pet be radioactive?

No, your pet will not be radioactive during external beam radiation. External beam radiation means a beam of x-rays comes from outside of the patient. Once the beam is off, there is no more radiation. You can have normal contact with your pet during and after radiation therapy.



How long will my pet be at the hospital each day?

Patients must be dropped off in the morning by 8:30am to allow for examination by the clinicians/nurses prior to appointments. Our entire radiation oncology team works hard each day to ensure that each patient is treated in a safe, compassionate, and timely manner. That said, there are no guaranteed treatment or discharge times. Some patients may be treated and discharged in the morning, while others may not go home until the evening. Discharge times will vary from day to day. We will also do our best to keep you updated on your pet's status throughout the day. We recognize that transit to and from the hospital each day can be difficult – we are always able to offer overnight boarding if this is more convenient for you.

Can my pet board for treatments or throughout the course of treatment?

You always have the option to board your pet overnight at the hospital during the course of treatment. For some patients, this is less stressful than coming to and from the hospital each day. There are additional costs associated to boarding.

Can my pet eat a raw diet during cancer treatment?

No. Our Oncology service has a strict policy prohibiting raw diets during cancer therapy. This is due to the greatly increased risk of exposure to harmful bacteria, both to pets eating raw diets and people who interact with them. Out of concern for both our patients' and staff's safety, we ask that you do not feed a raw diet while your pet is a patient at CASE. There is no nutritional difference between raw and cooked food, and there are no proven benefits to raw food.

Can my pet bring their own food and toys?

You can bring your pet's food with you, and this is recommended if they have a special diet. Please see above regarding our strict policy prohibiting raw diets. We do have many types of dry and wet food at the hospital. You may bring your pet's current medications, and we will confirm the current drugs and dosages for use at the hospital. We generally do not recommend bringing personal belongings for your pet such as blankets or toys- if they get soiled and washed, they may not be returned.

Will my pet have side effects?

As a result of normal tissues receiving radiation dose, we will see side effects. There are two types of radiation therapy side effects: acute and late. The types and severity of side effects will vary based on the location of the treatment site, the protocol used, and individual patient sensitivity.

Acute side effects of therapy are relatively common and occur during or shortly after the completion of radiation therapy. Acute side effects usually involve irritation or inflammation of the tissues within the radiation field, such as the skin, mouth, eyes, stomach/intestines, footpads, or urinary



tract. Typically, these begin in the second or third week of treatment and may last for 2 – 4 weeks. While acute side effects are common, they are generally temporary and self-limiting. However, there are patients that experience more severe or prolonged side effects as a result of biologic variation or trauma to the radiation site (i.e. licking or scratching).

While acute side effects are healing, we support our patients with pain medications and other supportive care.

Late side effects occur 6 months or later after the completion of radiation therapy. Unlike **acute** side effects, which are common and self-limiting, late effects are much less common (rare) but may be chronic or permanent. This may include scarring, chronic inflammation, cataracts, bone necrosis and fracture, and secondary tumor formation. The adverse effects of radiation therapy are difficult to predict, specific side effects will be discussed with you on an individual basis. In most patients, our radiation dosing schedule is aimed at minimizing the likelihood of late side effects. In most cases, the risk of serious late radiation side effects is 5% or less.

While we recognize that radiation therapy causes some discomfort in the short term, the goal is for our patients to have a good quality of life following treatment.

What is a vascular access port? Why are they used?

A vascular access port (VAP) is an implantable port intended for patients who require long-term intravenous (IV) access, such as patients undergoing 15 or more anesthesia events for radiation therapy. The port is placed just under the skin of the neck and is connected to an internal IV line to the jugular vein. The jugular vein is a common site for blood collection in animals. The use of a VAP results in less peripheral catheter placements and removes the need for IV catheter maintenance during radiation treatment. The possible complications of VAP placement include swelling, failure to function (ie clotting), migration of the port, bleeding, and infection.

What are the costs associated with radiation therapy?

Radiation therapy protocols include the anesthesia, radiation planning and delivery as well as boarding during the day. The costs of the radiation therapy protocols do not include overnight boarding. Patients with longer protocols may be offered a vascular access port which is also included in the costs.

To monitor patients during anesthesia we perform routine blood work half way through treatment. The cost of blood work is included in the estimates you will receive; however, we cannot charge for blood work until the tests are performed. Your initial invoice will not include the blood work and you will be billed at the time it is performed. The total cost will be the same.

Please keep in mind the radiation protocol estimates do not include additional testing, supportive medications or unforeseen complications.



When will my pet need to have a recheck examination?

Most patients will be scheduled for a post-radiation recheck examination between 2-3 weeks following completion of radiation. This is typically done at CASE, however pending how far you have to travel we can arrange for you to see a veterinarian closer to you.

After your 2 week recheck examination, the schedule for recheck evaluations will depend on the tumor type, and whether additional therapies such as surgery or chemotherapy are recommended.

What are our thoughts on herbs, supplements, alternative therapies, CBC, etc for my pet?

We understand and respect that these therapies may play a role in the support and quality of life of a cancer patient. Unfortunately, we do not have data or science backing for many alternative or holistic therapies for pets with cancer. Although these products are “natural,” that does not mean they are free from causing any side effects or interactions with other drugs. Overall, we just do not have a lot of data and information regarding these products and how they may benefit (or harm) a pet with cancer. The National Animal Supplement Council (NASC) does do quality control of suppliers of herbs and supplements, therefore, you may look for this label when purchasing products for your pet. You may also view these products on their website (<https://www.nasc.cc/members/>).

Does my pet’s primary veterinarian still play a role in my pet’s care following a diagnosis of cancer?

Yes. We see ourselves as a team with your pet’s primary care veterinarian. Although pets may develop cancer, other ongoing non-cancer care will need to be continued with their primary veterinarian. This may include concurrent conditions (such as kidney disease) or for ongoing preventative care.

How do I know it is time to euthanize and what does it involve? What resources are available for my pet and myself during difficult end-of-life times?

Making the decision to say goodbye to a pet is extremely difficult. The timing of this decision is also very hard and different among individuals. Monitoring your pet’s quality of life day to day is very important, yet when an individual elects to euthanize their pet has many different personal factors. Every owner knows their pet best and everyone is also entitled to their own beliefs. Remember, although this is very difficult, the goal of euthanasia is to relieve suffering of your pet when their quality of life is no longer where we want it to be. This may be related to decreased energy, decreased appetite, loss of their excitement for things they love, vomiting, diarrhea, weight loss, pain, among many other factors. There are really great resources that may help us all when evaluating our pets’ quality of life.

Euthanasia is a peaceful process that involves your pet having an IV catheter placed. Different drugs are used to allow your pet to be very comfortable and at rest. Owners can be with their pet through the entire process and the veterinarian or nurse will discuss the entire process. There are many options when it is time to say goodbye to your pet that can help provide euthanasia services. This



includes your pet's oncologist here at CASE, ER veterinarians at CASE (if after hours), primary veterinarians, and at-home euthanasia veterinarians (see listed below).

Resources for quality of life monitoring, pet loss support, and at-home euthanasia services:

1. Lap of Love (<https://www.lapoflove.com/> 720-399-7334)
 1. This site includes many great resources, such as Quality of Life monitoring scales and calendar, more information regarding how to know it is time, and contact information for at-home euthanasia veterinarian
2. Caring Pathways (720-287-2553)
 1. At-home euthanasia services
3. One Last Gift (720-432-4579)
 1. At-home euthanasia services
4. Guardian Pet (970-889-9331)
 1. At-home euthanasia services
5. Home to Heaven (970-412-6212)
 1. At-home euthanasia services
6. ARGUS Institute at CSU (<https://vetmedbiosci.colostate.edu/argus/>) (Support - (970) 297-1242 (voicemail))
 1. This also includes Owner Support and Pet Loss Services

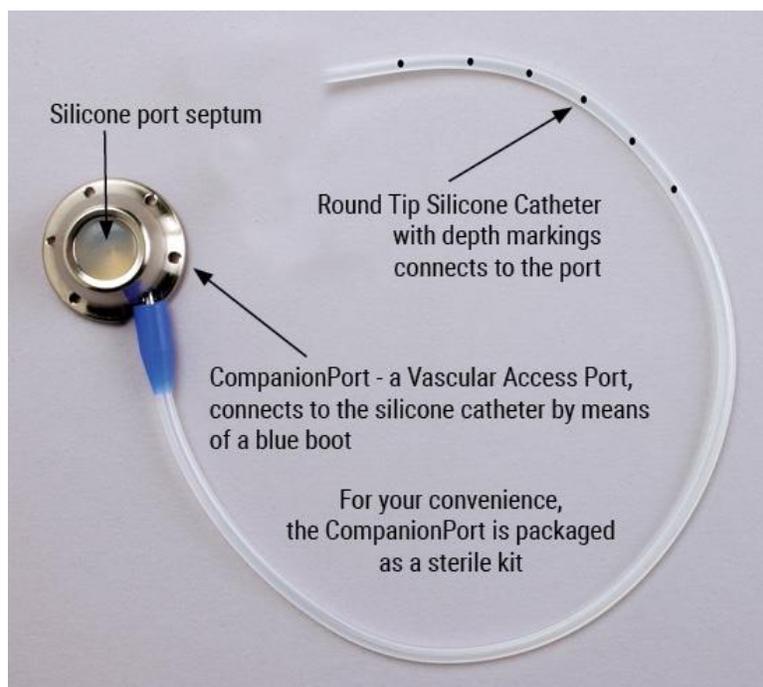
Information on vascular access ports (VAPs)

A vascular access port (VAP) is an implanted intravenous catheter device. This device can be used to administer anesthesia for radiation therapy, for chemotherapy drugs, or even for administering IV fluids. We use vascular access ports for most of our patients receiving full course radiation (greater than 15 doses), provided that patients are large enough to accommodate port placement.

Using these ports typically allows for shorter treatment sessions and better patient comfort. This port eliminates the need for IV catheter placement and therefore eliminates the need for extra sedation.

The port is placed under the skin, so you will not see the port. Your pet will have two small incisions: one where the port is placed on the neck and one where the catheter enters the jugular vein.

Image of a CompanionPort



<https://norfolkvetproducts.com/products/companionport/>