

# FLINT ANIMAL CANCER CENTER

NEWSLETTER | Fall 2018



## LEAD GIFT MAKES WAY FOR ENHANCEMENTS TO BIOREPOSITORY

Dr. Susan Lana started the biorepository at the Flint Animal Cancer Center in 2003.

FIFTEEN YEARS AGO, THE [ROBERT H. AND MARY G. FLINT Animal Cancer Center](#) started on the path to create one of the first on-site biorepositories in veterinary medicine. The project was spearheaded by medical oncologist, [Dr. Sue Lana](#). Proper collection, processing, and storage were critical considerations when designing the program.

“Our focus from day one has been on collection and storage,” said Lana. “It was extremely important that the samples were handled in a way that would not affect the integrity of the DNA, RNA, and proteins. With safe handling, samples are available for decades.”

The goal was to build an archive that would serve the needs of Colorado State University [cancer center](#) researchers first and then scientists around the globe. At the time, scientists needed better access to a variety of tissue samples to take advantage of advances in molecular biology and to learn more about the life of cancer cells. The hope was to discover how cancer cells differed from normal cells

and how they interacted with the cells around them with the goal of developing new treatment strategies.

“When I joined the Flint Animal Cancer Center faculty in 2007, it was the first time I had access to patient samples,” said [Dr. Dawn Duval](#), associate professor of molecular oncology. “It provided an opportunity to actually try to understand what was happening in real patients. Not only that, but the tumors were matched with blood, serum, plasma, and normal tissue samples from the same patient. So not only could I ask what was happening in the tumor, I could also ask how the patient’s body was responding and if those changes could be measured from a simple blood sample.”

One example of the importance of the biorepository has been in the study of osteosarcoma. “Since most human osteosarcoma patients are treated with chemotherapeutic drugs prior to surgery to remove the tumor, the tumors have been exposed to a lot of agents that change their biology and cause a lot of damage,” said Duval. “The standard of care for dogs is to remove the tumor first, so we have better samples to study,

*continued on Page 2*



From left to right: Dr. Dawn Duval; tissue archivist processes a blood sample; a student examines cancer cells in the laboratory of Musculoskeletal Oncology and Traumatology

which has provided the opportunity to improve cancer treatment for both groups.”

### TODAY'S BIOREPOSITORY

Currently, the Flint Animal Cancer Center biorepository stores more than 26,600 tumor and normal tissue and fluid samples from canine and feline patients.

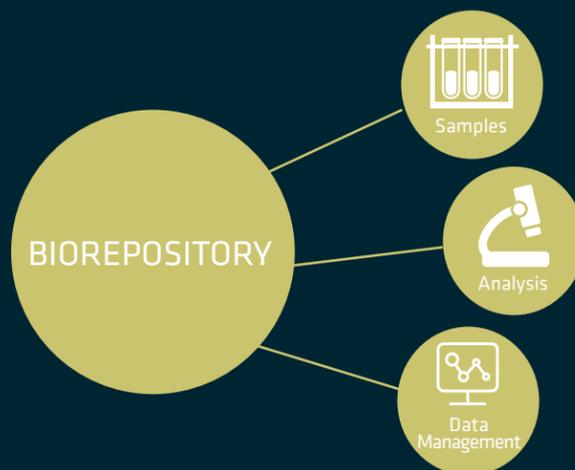
Industry partners and academic institutions from around the world have requested samples for study. More than half of the overall samples have been used by CSU scientists. Biorepository samples have been used for a variety of research purposes with some leading to publications in journals such as *Cancer Research*, *Genome Research*, and *Veterinary Comparative Oncology*.

“We have been working hard to make the tumor biorepository as useful as possible by checking in with researchers to make sure we are collecting the most important samples,” said Duval. “We were ahead of the curve in creating our program, but it is important that we continue to stay ahead of that curve moving forward, and that means investing additional resources to take advantage of the power of these samples.”

### What is a biorepository?

According to the [National Institutes of Health National Cancer Institute](#), a biorepository is a facility that collects, catalogs, and stores samples of biological material, such as urine, blood, tissue, cells, DNA, RNA, and protein, from humans, animals, or plants for laboratory research. At the Flint Animal Cancer Center, samples are collected from patients with owner consent. Once

collected, samples are processed, catalogued, and stored in controlled conditions through the use of ultra-low temperature freezers. Scientists use the samples to examine the molecular and biological traits of cancerous tissue, normal tissue, and other patient samples. The ultimate goal is to find better therapies.



### VISION FOR THE FUTURE

Thanks to an anonymous lead gift, Flint Animal Cancer Center faculty are excited to build the power of the biorepository for the next generation of discovery. Plans include investment in personnel to increase data collection and to build a robust database that can link all forms of information tied to a sample.

“The power of the biorepository is not just in the samples, but in linking the samples with patient information, including diagnosis, treatment, outcomes, successes, and failures, and also linking basic science research back to that sample,” said Lana. “Our vision is to have the complete package for every sample used.”

New investment will also allow the cancer center to take advantage of advances in sample collection techniques and facilitate the study of additional tumor types. According to [Dr. Rod Page](#), director, Flint Animal Cancer Center, “Modernizing our biological collections, deriving new cell lines, and building a clinical data repository is a critical initiative for our future work to find solutions for better cancer diagnostics and therapy.”

To learn more about future plans for the biorepository or how you can support this initiative, please contact Lauren Mingus, [lauren.mingus@colostate.edu](mailto:lauren.mingus@colostate.edu).

## HOLLY'S LEGACY REMOVES FINANCIAL BARRIERS TO TREATMENT

**R**OCKY IS A SMART, LOVING, LOYAL companion for 9-year-old Nikolai. As Nikolai's service dog, Rocky has been by his side through every doctor visit, surgery, MRI, EEG, EKG, therapy appointment, hospital stay, night terror, and moment of distress. They are best friends and soul mates.

In August 2018, Rocky was diagnosed with a very aggressive maxilla tumor. After meeting with clinicians at Colorado State University's Flint Animal Cancer Center, Rocky's family learned there were few options to treat this type of cancer. The best option was intensive radiation therapy. However, the cost of this treatment posed a huge financial burden for the family.

Thanks to [Holly's Legacy fund](#), Rocky's family received the financial help they needed to cover the cost of radiation therapy. Holly's Legacy fund provides monetary support for elderly and disabled pet owners seeking treatment for their companion animals at the Flint Animal Cancer Center.

“There are not enough words we can put together to begin to thank Holly's Legacy for helping us give Rocky a longer life to care for his boy,” said Nikolai's mom.

The night Rocky returned from treatment, he went right to Nikolai's bedroom door and immediately jumped onto his favorite place on Nikolai's bed, and they showered each other with kisses.

“We are praying Rocky can stay in our lives and be there for Nikolai for many more years with the radiation therapy he received, thanks to Holly's Legacy.”



Above: Best friends and soul mates, Rocky and Nikolai, received financial assistance from Holly's Legacy fund.



Above: Holly, namesake of Holly's Legacy fund.

### ABOUT HOLLY'S LEGACY FUND

This fund was established in memory of Holly, a remarkable chocolate lab who endured many health challenges in her 12 years. Through numerous health diagnoses, Holly remained good-humored and embraced her treatments with enthusiasm and energy. The compassionate care Holly received at CSU inspired Terry and Bart Mayes to create Holly's Legacy.

“Helping animals is high on our priority list,” said Terry. “We established Holly's Legacy to make sure seniors and persons with disabilities, who often don't have resources for companion animal care, can choose the best treatment option without worrying about the financial burden.”

With gifts from Terry and Bart as well as Terry's mother, Mary Anderson, Holly's

Legacy fund will grow to \$25,000 by the end of the year, which is the threshold to reach permanent endowment status. However, a generous gift from an anonymous donor allowed the fund to start providing assistance beginning in 2017. To date, 16 patients have benefited from treatment sponsored by Holly's Legacy.

“We are truly grateful to the anonymous donor for helping us grow Holly's Legacy,” said Terry. “We love knowing that this fund is already making a difference in the world.”

Terry and Bart plan to continue to support Holly's Legacy into the future and have included the fund in their estate plan as well. They invite others to support this fund to ensure future patients will have access to the best possible care. To contribute, please visit [Holly's Legacy fund](#).



Dr. Meg Macy, pediatric oncologist at Children's Hospital Colorado, presented the One Cure Dinner keynote.



Duke's story was featured at the Dinner in White event in Denver.



Flint Animal Cancer Center patient, PD, poses with the clinical trials team and his family at Dinner in White in Fort Collins.

## ONE CURE EVENTS RAISE AWARENESS, FUNDING, AND HOPE

This year, the Flint Animal Cancer Center hosted not one, but two events to raise awareness and critical funding for [One Cure](#), which supports the clinical trials program at the [Flint Animal Cancer Center](#). Thanks to generous supporters, we have received more than \$700,000 in gifts to One Cure this year. These contributions will be used to finance our clinical trials operating costs, including five full-time staff and up to three additional clinical trials in 2019.

### SEVENTH ANNUAL ONE CURE DINNER

Eighty friends of the Flint Animal Cancer Center along with furry guests gathered Aug. 11, 2018, for the seventh annual One Cure Dinner. For the first time, the event was held in Fort Collins on the campus of the [Colorado State University James L. Voss Veterinary Teaching Hospital](#). In addition to spending time with old and new friends, dinner guests had the opportunity to tour the newly remodeled [Lucy Oncology Clinic](#) at the Flint Animal Cancer Center.

The evening's theme, Growing Hope, was inspired by a promising new clinical trial for patients with metastatic osteosarcoma, an aggressive form of cancer with no effective treatment options. The clinical trial, which uses a known anti-cancer agent in combination with a repurposed blood pressure medication, was designed by cancer center scientists Drs. [Steve Dow](#) and Dan Regan.

"[In canine patient studies] we've seen, in some cases, tumor regression, cessation of tumor growth in a disease that's really stymied other investigations," said Dow. "We feel like this is a breakthrough."

In addition to supporting the next phase of study at the cancer center, One Cure monies will be used to launch a similar clinical trial in patients with metastatic osteosarcoma at [Children's Hospital Colorado](#).

"I don't know any other center that would have the resources in basic science, clinical trials experience, and the connections to take these opportunities to humans as quickly as we are," said [Dr. Rod Page](#), director of the Flint Animal Cancer Center.

The dinner's featured speaker, [Dr. Meg Macy](#), a pediatric oncologist at Children's Hospital Colorado, spoke about her team's

excitement about the upcoming clinical trial.

"We've not moved the needle in 20 years," said Macy. "Through this trial, we can provide our families with new hope."

### DINNER IN WHITE

Since 2010, [Dinner in White](#) has "popped up" annually in a secret location in the Denver Metro area to raise support for the [University of Colorado Cancer Center](#). This year, in a unique twist, Dinner in White headed to Fort Collins in addition to Denver for two simultaneous events to raise awareness of comparative oncology research at CSU's Flint Animal Cancer Center, one of the CU Cancer Center's consortium members.

Event highlights included stories from Flint Animal Cancer Center patient families. Denver guests heard from Brad and Heidi Robinson whose dog [Duke](#) was diagnosed with osteosarcoma and is participating in a clinical trial designed to personalize his chemotherapy. In Fort Collins, retired K9 tracking dog [PD](#) took the stage with his humans Tina and Scott Wisler. Teary-eyed, Tina shared the story of PD's diagnosis with hemangiosarcoma and their journey through PD's treatment at CSU.

Fort Collins' guests also heard from human osteosarcoma patient, Travis Vagher, one of the first human surgical limb spare patients more than 30 years ago. He credited Flint Animal Cancer Center founding director, [Dr. Steve Withrow](#), with saving his life. Dr. Withrow originally perfected the surgical limb spare technique in dogs and later shared his work with Travis's orthopedic surgeon, Dr. Ross Wilkins. Travis quipped, "It might have been the drugs, but I'm pretty sure there was a veterinarian in my surgery."

According to Dr. Christine Hardy, Flint Animal Cancer Center One Cure program lead, "Dinner in White provided an amazing opportunity to connect with both old and new One Cure friends. We are grateful to every single guest in both Denver and Fort Collins and to the CU Cancer Center staff for spending a lovely evening focused on the potential of comparative oncology for all cancer patients."

## COMINGS & GOINGS

### Please join us in welcoming several new members to the FACC team!

**Dr. Brittany Ciepluch** joins us as a surgical oncology fellow. She received her D.V.M. from The Ohio State University. She recently completed a four-year surgery residency at Texas A&M University.

**Dr. Giovanni Tremolada** also joins us as a surgical oncology fellow. Dr. Tremolada completed veterinary school and a Ph.D. program in Italy. After an internship at Oregon State University, he recently finished a surgery residency at Colorado State University.

**Dr. Alex Pyuen** joins our team as a medical oncology resident. Dr. Pyuen attended veterinary school at Colorado State University and completed an internship at the University of Georgia.

**Dr. Thomas Lee** joins our team as a radiation oncology resident. Dr. Lee completed a medical oncology residency at National Taiwan University Veterinary Teaching Hospital. After his residency, he decided to pursue board certification in radiation oncology.

**Dr. Zulema Villa** is also a new radiation oncology resident. Dr. Villa earned her master's in toxicology and Doctor of Veterinary Medicine at Colorado State University. She joins us after finishing a rotating internship in Los Angeles.

**Dr. Chris Dolan** is our new medical oncology intern. Dr. Dolan received his undergraduate degree from Texas A&M where he also attended veterinary school. Dr. Dolan spent last year on a rotating internship at Blue Pearl in Atlanta, Ga.

**Dr. Allison Gedney** joins us as our clinical trials intern. She earned her D.V.M. from Oklahoma State University.

**Jhoni Sorrenson** is one of our newest oncology technicians. Sorrenson graduated from Front Range Community College's veterinary technician program and worked in private practice for 11 years before joining our team.

**Al Aradi** joins us as our clinical trials coordinator. Aradi is a CSU alumnus with an undergraduate degree in biomedical sciences and a master's in microbiology-immunology.

**Lucas Bisel** recently relocated from Arizona and joins us as an oncology technician. Bisel has worked in the veterinary field for more than 12 years.

**Amanda Jenkins** joins us as project coordinator working with Dr. Doug Thamm. Jenkins brings 12-plus years of experience in biomedical research and was most recently an assistant scientific investigator in the Department of Otolaryngology at the University of Arizona.

**Mila Lam** is a new research associate working with Dr. Dan Gustafson.

**Eric Palmer** is a new research associate working with Dr. Dan Regan.

**We bid a fond farewell to the following team members who have left us for new adventures and thank them for the many ways they have enriched our lives in their time with us!**

**Dr. Megan Mickelson** finished her surgical oncology fellowship with us and is looking forward to a career in academia.

**Dr. Joanne Tuohy** completed her surgical oncology fellowship and looks forward to a career in academia.

**Dr. Amber Wolf-Ringwall** joined the faculty of the University of Minnesota as an assistant professor of oncology.

**Dr. Benoit Clerc-Renaud** completed his radiation oncology residency this summer and joined a private practice in Maryland.

**Dr. Sunny Kao** completed her internship and has moved on to an oncology residency program at the University of Illinois.

## STAFF NEWS

Flint Animal Cancer Center staff members, Drs. Ruth Rose, Amanda Guth, and Valerie Johnson recently received loan repayment awards through the National Institutes of Health and the National Center for Advancing Translational Sciences.

The NIH Loan Repayment Programs were established by Congress to recruit and retain qualified professionals into biomedical or biobehavioral research careers. The increasing costs of advanced education and training in medicine and clinical specialties force some scientists to abandon their research careers for higher-paying careers in the private sector.

"The financial relief the award provides is truly remarkable," said Rose. "After paying on my student loans (equal to a monthly mortgage

payment) for almost 10 years, the total amount I owed decreased by only a few thousand dollars. In the next two years, it will be reduced by half. I am truly honored to receive this award along with my colleagues."

According to Rose, it has been extremely difficult for veterinarians in research to achieve any significant means of debt relief. These awards acknowledge the value of translational research.

Flint Animal Cancer Center's Dr. Dan Regan received the same award last year. "By removing the financial stress of student loan payments, the award has been invaluable toward helping me continue my career and focus in basic and translational cancer research," said Regan.



Above: Drs. Ruth Rose, Valerie Johnson, and Amanda Guth received loan repayment awards from the National Institutes of Health to offset a portion of their student loans.

## Littermates Annie and Ollie race again, but this time for a cure



Left to right: Flint Animal Cancer Center clinical trials patients and siblings, Ollie and Annie, before their cancer diagnoses.

FROM THE MOMENT KIM THOMSEN FIRST MET GREYHOUNDS, she was hooked.

“My husband, Pat, and I had just lost our first dog together, a basenji, from lymphoma,” said Kim. “A month later, Pat was mobilized by the Army Reserve and moved away,” said Kim. “I was pretty sad and a bit lonely when I stopped by the pet store to buy cat food and came upon a group of dogs who circled around me. Not a single one barked. I asked an employee what was going on, and I learned it was a greyhound meet and greet.”

That’s when Kim decided to learn more about this interesting breed. She started volunteering at a greyhound rescue and, soon after, fostered her first dog. “When greyhounds first come into your home, they are usually 2 to 5 years old,” Kim said. “After retiring from racing, they have to learn everything about living in a house and all their new surroundings. They are usually overwhelmed because most have only ever lived in a crate. It can take a year to come out of their shell.”

In September 2004, Kim adopted her first greyhound, a red brindle she named Bella. Sadly, Bella died of a bone cancer called

osteosarcoma in March 2013. A few months later, Kim decided to foster again, but as soon as they picked up Annie, Kim’s husband fell in love and Annie joined their family. When Kim learned that Annie’s brother, Ollie, was available for adoption, she didn’t hesitate to reunite the siblings. At first, Annie played the bossy sister. She stole Ollie’s toys and his bed. Before long, Ollie won her heart and they became best friends.

### RETIRED, BUT NOT DONE RACING

In June 2017, Annie was diagnosed with osteosarcoma. Having been through this diagnosis with Bella, Kim was better prepared and wanted to know more about treatment options. Her veterinarian recommended Colorado State University’s [Flint Animal Cancer Center](#). After meeting with the cancer center team and learning more about Annie’s diagnosis, Kim enrolled Annie in a clinical trial with the hopes of helping not just Annie, but other dogs too. She believed Annie could join in the race for a cure.

Kim selected the COXEN clinical trial, which offers a personalized chemotherapy protocol based on the individual patient’s tumor characteristics. Before chemotherapy could begin, Annie would have to have her left hind leg amputated to remove the primary tumor. Annie recovered well from surgery and began chemotherapy a few weeks later. In October, routine chest X-rays revealed that the cancer had spread to Annie’s lungs, which happens in about 90 percent of osteosarcoma cases. Due to the lung tumors, Annie was withdrawn from the clinical trial.

“I had hoped the combination of amputation and chemotherapy would help Annie,” said Kim. “Unfortunately, she didn’t tolerate chemotherapy very well, and then we learned the cancer had spread to her lungs. We made the tough decision to stop chemo and keep her comfortable. She died in December 2017.”

Just two months after Annie passed away, Ollie started limping. “I brought him to our vet right away,” said Kim. X-rays revealed a suspicious lesion on Ollie’s right front leg, likely bone cancer.

Without hesitating, Kim scheduled an appointment for Ollie at the Flint Animal Cancer Center. After radiographs and a fine needle aspirate confirmed the osteosarcoma diagnosis, Kim faced more treatment decisions. “I wanted to try something different for Ollie, so we enrolled in the [COTC026](#) trial,” Kim said.

“Losing Annie was extremely difficult, and I wanted to do the best I could for Ollie, to give him a chance to enjoy life to the fullest and for the longest period of time.”

The COTC026 clinical trial is investigating the effectiveness of a *Listeria* vaccine in delaying or preventing metastatic disease in dogs with osteosarcoma that are treated with standard chemotherapy. Following amputation in late February, Ollie began the treatment protocol.

“The first few weeks post-surgery were tough,” said Kim. “Ollie had a nerve impingement that caused a lot of pain, but about a month later, he was much better.”

After surgery, Ollie received four doses of chemotherapy followed by three vaccinations over the course of several weeks.

“We held our breath at the five-month mark, hoping to have more time with Ollie than we did with Annie” said Kim.

Eight months after his diagnosis, Ollie races around in the backyard with the two newest greyhound family members, Smiley and Lucy.

“I’m grateful to the caring and extremely professional team at the Flint Animal Cancer Center, including our surgeon, Dr. Megan Mickelson, Drs. [Monica Fernandez](#) and [Brittany Wittenberns](#), and the clinical trials team, especially [Kara Hall](#),” said Kim.

“I always knew that they really cared about Annie and have shown the same love for Ollie.”

“Kim’s dedication to Annie and Ollie’s care has been amazing,” said Hall, clinical trials technician at the Flint Animal Cancer Center. “Despite having faced cancer multiple times with her dogs, Kim’s heart for helping us advance therapies for future patients has never wavered.”

Through her commitment to the [clinical trials program](#), Kim turned a difficult situation into an opportunity.

“I’m a data-driven person, and I believe that knowledge is power,” said Kim. “I’ve seen so many benefits to participating in clinical trials, not just for Annie and Ollie, but for the students who are learning about cancer, for the clinicians who can use the information to improve future treatments, and for the next osteosarcoma patients. I’m happy that Annie and Ollie can make a difference. It’s been a big commitment, but it’s worth it to know that we are part of a team that is racing for a cure.”



Post-amputation surgery, Ollie is participating in a clinical trial for dogs with osteosarcoma.

“I’ve seen so many benefits to participating in clinical trials, not just for Annie and Ollie, but for the students who are learning about cancer, for the clinicians who can use the information to improve future treatments, and for the next osteosarcoma patients. I’m happy that Annie and Ollie can make a difference.”

– Kim Thomsen  
Flint Animal  
Cancer Center  
Client



One Cure's message reached millions of racing fans worldwide this season.

## Speeding up the cure

Thanks to a generous [One Cure](#) supporter who hates cancer and loves car racing, One Cure's message reached millions of racing fans worldwide in 2018. Building on last year's partnerships, three professional race car drivers, Jay Howard, Clint Bowyer, and Graham Rahal, proudly sported the One Cure colors at six races across the the country.

Featured races included Howard's second appearance as a driver for One Cure at the Indianapolis 500; three NASCAR races with Bowyer; and two races with Indy Car driver, Rahal. The drivers and teams used their collective voices to share One Cure's story of hope and potential with their fans.

For nearly two years, Howard has championed One Cure via his social media channels. He's adopted the hashtag #LoveDogsHateCancer to rally his fans. "One Cure is literally my ideal Indy 500 sponsor — I couldn't think of a better partner," said Howard. "To be racing for something that is so near and dear to my heart, well, it's just incredible."

Bowyer first learned about One Cure when he joined the Stewart Haas Racing team "Everyone knows somebody who has been touched by cancer," said Bowyer. "I like to have fun in life, but racing is my job and I take it very seriously and, even as seriously as I take racing, I'd like to think there are few things more important to all of us than finding a cure for cancer."

One Cure is all about speeding up new and promising treatments for all cancer patients — pets and people — which is why we're thrilled to team up with the car racing industry. All of these efforts have succeeded in amplifying our message and helping us raise critical funding for our comparative oncology research.

"For me, [racing for a cure](#) is personal," said Rahal. "I don't want to see anyone else I love go through cancer."

Through his 2018 charity golf tournament, Rahal donated \$100,000 to One Cure. According to Rahal, "to speed up a cure, it's going to take all of us rallying together." Please visit [www.onecure.com](http://www.onecure.com) to join this effort and help us race toward a cure.



Thanks to One Cure's generous benefactor, One Cure was the season scoreboard sponsor at [Bandimere Speedway](#) in Golden, Colo. In addition to the scoreboard sponsorship, One Cure was featured during Drag Illustrated World Series of Pro Mod race weekend in August.

## Wish List

THE FOLLOWING WISH LIST ITEMS support the work of our surgical team. If you would like to help by donating funds toward the purchase of any of these items, please call (970) 297-4175. All donations and every amount of support makes a difference to our program.

### FLUOROSCOPY TABLES - \$15,150 (2)

The Oakworks CFPM300 fluoroscopy table is designed for use in highly specialized surgical cases. The tables include wheels and can be easily moved from anesthesia to surgery, which eliminates the need to transfer patients from one bed to another. The new tables would replace our 30-year-old surgical tables and offer state-of-the-art ergonomic functionality, including power-assisted raising, lowering, and tilting.

### BRASSELERPNEUMOMICRO POWER SYSTEM - \$6,600

This surgical tool can be used in a variety of small-animal surgical applications. The tool replaces older technology that is no longer serviced by the manufacturer and facilitates advanced surgical techniques.

### LEFT-HANDED SURGICAL INSTRUMENTS - \$500

For our left-handed trainees and surgical oncology visitors, we're in need of a set of lefty surgical instruments. Each set includes a needle driver, one pair of large scissors, one pair of fine scissors, and two hemostats.

### ULTRA-LOW TEMPERATURE FREEZER - \$10,000

A new ultra-low temperature freezer will support enhancements to our biorepository and provide additional storage space for tumors, tissue, and other samples collected during surgical procedures and diagnostic testing.



Flint Animal Cancer Center's surgical oncologists perform approximately 400 surgeries each year. Surgery is the most commonly used technique to treat cancer in companion animals.

## DID YOU KNOW?

Flint Animal Cancer Center founding director Dr. Stephen Withrow established the field of veterinary surgical oncology? Since then, our surgeons have pioneered several procedures, including limb spare and oral/facial reconstruction. Today, these techniques are common practice around the world.

## Surgical Oncology Team

### Dr. Nicole Ehrhart, V.M.D.

Diplomate ACVS, ACVS Founding Fellow - Surgical Oncology  
Professor, Surgical Oncology  
Ross M. Wilkins, M.D. Limb Preservation University Chair in Musculoskeletal Biology and Oncology

### Dr. Bernard Séguin, D.V.M., M.S.

Diplomate ACVS, ACVS Founding Fellow - Surgical Oncology  
Associate Professor, Surgical Oncology

### Dr. Deanna Worley, D.V.M., M.S.

Diplomate ACVS, ACVS Founding Fellow - Surgical Oncology  
Associate Professor, Surgical Oncology

### Dr. Brittany Ciepluch, D.V.M., M.S.

Surgical Oncology Fellow

### Dr. Giovanni Tremolada, D.V.M., M.S., Ph.D.

Surgical Oncology Fellow

### Deanna Williams, C.V.T.

Surgical Oncology Technician



Dr. Rod Page, director of the Flint Animal Cancer Center and the Golden Retriever Lifetime Study.

## Golden Retriever Lifetime Study celebrates six years

IN AUGUST 2018, THE [GOLDEN RETRIEVER Lifetime Study](#), led by [Flint Animal Cancer Center](#) director, [Dr. Rod Page](#) in partnership with the [Morris Animal Foundation](#), celebrated six years. The study is gathering information on more than 3,000 golden retrievers, throughout their lives, to identify the nutritional, environmental, lifestyle, and genetic risk factors for cancer and other major diseases in dogs. It is the most extensive investigation of its kind ever undertaken in veterinary medicine.

The overarching goal of the study is to identify potential risk factors that may lead to the development of four types of cancers common in golden retrievers – lymphoma and osteosarcoma, which are dramatically similar to the same cancers in humans, as well as hemangiosarcoma and mast cell tumors. But we will learn so much more.

The study began as a way to fill a major information gap. Veterinary medicine lacked the long-term, expansive prospective studies that might reveal disease correlations – why

were dogs getting certain diseases and what risk factors for those diseases might be. It was based on the structure of the Framingham Heart Study, a 70-year study that follows the residents of Framingham, Mass., to identify and better understand risk factors for heart disease. Golden retrievers were chosen for the study for several reasons, including a suspected higher risk for cancer development, genetics, and popularity of the breed, which led to easier enrollment.

Enrollment began in 2012, and the study reached capacity in 2015. Of the 3,044 enrollees, an incredible 95 percent remain in the study and 85 percent are compliant with all study tasks. Those statistics would be unheard of in human studies and speak to the dedication of each owner. The team estimates they will be actively collecting data and samples for approximately eight more years.

The project has accumulated enough data to authorize research projects that take advantage of current data to expand

knowledge about canine health. New projects include:

- Genetically identifying breeding closeness to help breeders optimize the preservation of desirable traits
- Establishing new “normal ranges” in blood levels to better predict the development of diseases
- Determining environmental and gut microbiome contributions to obesity risk in Golden Retriever Lifetime Study participants

The Golden Retriever Lifetime Study team will continue to share its gold mine of information through published reports and data sharing with outside researchers. For more information on the Golden Retriever Lifetime Study, visit [www.morrisanimalfoundation.org/golden-retriever-lifetime-study](http://www.morrisanimalfoundation.org/golden-retriever-lifetime-study).

*Excerpted with permission from Morris Animal Foundation.*

## HONOR ROLL 2018

Generous giving from the private sector to the Colorado State University Robert H. and Mary G. Flint Animal Cancer Center has become increasingly important over the years. The following individuals (in alphabetical order) are especially noteworthy in that they have given once, or in a sustained way, more than \$25,000 to support the efforts of the CSU Flint Animal Cancer Center. Our heartfelt appreciation goes out to them.

Allen & Company Inc.	Kneller Family Foundation	Michael and Iris Smith
Herbert A. Allen	Robert E. Knight Trust	David and Peggy Sokol
Brett and Dawn Anderson	Robert* and Eva Knight	Frederick W. Stelle
Anschutz Foundation	Kate Koogler Canine	Dr. Ralph and Peggy Starkey
Libby Anschutz	Cancer Fund Inc.	Jennie and Bob Strayer
Philip Anschutz	Susan Lefebvre	Brett F. Stuart
John H.* and Raelia J.* Bell	Limb Preservation Foundation	Dr. E. Hadley Stuart Jr.* and Family
Bow Wow Buddies Foundation	William C. Lukes, AIA*	Dr. Nan M. Stuart
Timothy T. Brown	Maddie’s Fund	Elbridge and Debra Stuart Family
Don* and Katy Callender	ZaZa and Donald Manocherian	Foundation
CanineKids Outfitters	Steven J. McCarthy	Stuart Foundation
C.H. Robinson Worldwide Foundation	Robert and Evelyn McKee Foundation	The Estate of Barbara Cox Anthony
Colorado State University	Ana Mendez and Rajeev Jayavant	The Estate of Maria Bristol
Research Foundation	David Merin Foundation	The Estate of Lionel Edmunds
Community Foundation of Northern	Jay and Sandra Mesinger	The Estate of Jaynn Emery
Colorado	Milheim Foundation Cancer Research	The Estate of Patricia Hall
Steve and Kitty Cooper	Kenneth and Myra Monfort	The Estate of June Harper
Sophie and Derek Craighead	Charitable Foundation	The Estate of Fern A. Howard
Crystal Waters Foundation Inc.	Thelma C. Morici	The Estate of Elisabeth Kellie
David Cummings and Shelley Kerr	Mark L. Jr. * and Bette M. Morris	The Estate of Lillian M. Key
Dani’s Foundation	National Institutes of Health	The Estate of Laura Katherine Krebill
Dr. William and Sara DeHoff	Jeffrey Neu	The Estate of Carolyn Larson
Paul Dunbar and Mindy	Robert Neu	The Estate of William Lukes
Richards-Dunbar	Gary L. and Alice M.* Nordloh	The Estate of Lois Maurer
Willard L. and Ruth P. Eccles	Meg and Andy O’Neil	The Estate of Carol E. McCandless
Foundation	Dr. Rodney L. Page	The Estate of Julie Holt Merkle
Walter* and Jaynn* Emery	Susan C. Page	The Estate of Nancy A. Oyster
Charles Engelhard Foundation	PetCo Foundation	The Estate of Constance C. Ricci
Gene and Marylynn Fischer	Landon Phillips and Susan Maltby	The Estate of Patricia Shay
Robert H.* and Mary G. Flint*	Ann E. Osborn	The Estate of Jacquelyn Ann Smith
Matthew Frank	David A. and Maxine M. Pierce	The Hadley and Marion Stuart
Mari Hulman George	Maj. Glen E. and Rose M. Porter	Foundation
Golden Retriever Endowment Fund	Joe and Kay Pylant	William V. Taylor*
Richard and Linda Habitzreiter	Graham Rahal Foundation	Allison Topham
Haddington Ventures LLC	Reiman Charitable Foundation	Trailsend Foundation
Ed and Marilyn Hansen	Roy and Roberta Reiman	Dr. Cleve Trimble
Jeffery Harbers*	Scott and Virginia Reiman	Deborah Van Dyke
Renee Harbers-Liddell	Erik and Terrin Riemer	Lori Venners
June Harper*	Dr. Ronald R. and Sara Ringen	Theodore Venners
Alan* and Berte Hirschfield	River Terminal Development	Bruce Weber and Nan Bush
Norman Hirschfield Foundation	Company	Rick and Melissa Westerman
Jewish Communal Fund	Richard and Nancy Rogers	Richard and Nancy White
Lawrence L. Jones III*	Harold and Cathy M. Roozen	Robert and Susan Wilson
Dr. Norman and Ann Jorgensen	Rotherham Family	Dr. Stephen J. and Susan L. Withrow
Gretchen* and Taylor Joyner	Albert and Nancy Sarnoff	William Wrigley Jr. Trust
Elizabeth Keen	Charles R. Jr.* and Lucia H. Shipley*	Rosamond R. Zetterholm*
Sam* and Margaret Kelly	Shipley Family Foundation	
Lillian M. Key*	Kraig and Suzanna Smiegowski	

\*Deceased

We are grateful to the following individuals for honoring the Flint Animal Cancer Center in their estate planning.

Vikki and Arthur Anderson	Robert and Elizabeth Merrill	B. Gregory Russell
Dr. Allen D. and Kathy Brandon	Connie Miller	Mark and Nancy Sisinyak
Susan Butler	Jerry and Karen Moore	Kraig and Suzanna Smiegowski
Susan Coit	Deanna and Daniel Mueller	Robyne Taylor
Steve and Kitty Cooper	Alan and Robyn Pauley	Clint Teegardin and Martha Baxter
Edward and Karen Franceschina	Landon Phillips and Susan Maltby	Allison Topham
Virginia Garland	David and Maxine Pierce	Julie Tyger
Larry and Nancy McDonald	Sharon Powers	Jacqui and Russell Widener

THANK YOU FOR  
MAKING OUR  
WORK POSSIBLE!

FY2018 Impact

1,461  
NEW  
PATIENTS



6,021  
PATIENT VISITS

32

Clinical Trials

1,453

ONLINE  
CONSULTS

1,934

Radiation therapy  
treatments



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### ONE CURE

**Cancer is cancer.** At the Flint Animal Cancer Center, we believe the answer to curing cancer lies in comparative oncology. Our One Cure initiative works to advance translational cancer research through comparative oncology clinical trials. Every day, our scientists look for new treatment options that benefit our pet patients – and people too. Your support is critical to our continued work. Please visit [www.onecure.com](http://www.onecure.com) to learn more.



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