

Stanford



Kerriann Casey, DVM

Clinical Associate Professor, Comparative Medicine

Bio

ACADEMIC APPOINTMENTS

- Clinical Associate Professor, Comparative Medicine

ADMINISTRATIVE APPOINTMENTS

- Director, Comparative Medicine Necropsy Service, (2018- present)

HONORS AND AWARDS

- Department of Comparative Medicine Distinguished Clinician Award, Stanford University School of Medicine (2018)
- Dr. Donald R. Cordy Prize in Veterinary Anatomic Pathology, University of California, Davis (2016)
- Gerald V. Ling Award - Outstanding Small Animal Research Study and Presentation, University of California, Davis (2016)
- Henry L. Foster DVM Scholar, Tufts Cummings School of Veterinary Medicine (2012-2013)
- Norman J. MacLeod Endowed Scholar, Tufts Cummings School of Veterinary Medicine (2012)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, Geropathology Research Network (2017 - present)
- Member, Digital Pathology Association (2017 - present)
- Member, American College of Veterinary Pathologists (2016 - present)

PROFESSIONAL EDUCATION

- Fellow, Stanford University School of Medicine , Post-Doctoral Research Fellowship (2018)
- Diplomate, American College of Veterinary Pathologists (ACVP) , Anatomic Pathology (2016)
- Resident, University of California - Davis , Anatomic Pathology (2016)
- DVM, Tufts University , Veterinary Medicine (2013)
- BA, Connecticut College , Behavioral Neuroscience (2007)

Teaching

COURSES

2023-24

- Aardvarks to Zebras: The A to Z of Animal Anatomy: COMPMED 81Q (Win)

2022-23

- Aardvarks to Zebras: The A to Z of Animal Anatomy: COMPMED 81Q (Win)

2021-22

- Aardvarks to Zebras: The A to Z of Animal Anatomy: COMPMED 81Q (Win)

2020-21

- Rodent Animal Models: Selection, Detection, Dissection, Inspection: BIOS 285 (Spr)

GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Laboratory Animal Science (Masters Program)

Publications

PUBLICATIONS

- **Subcutaneous choriocarcinomas in captive Amargosa voles (*Microtus californicus scirpensis*).** *Veterinary pathology*
Carrasco, S. E., Johnson, A. L., Casey, K. M., Allan, N., Reed, M., Foley, J. E., Imai, D. M.
2023; 3009858231203647
- **Deep Learning-Based Pipeline for Automatic Identification of Intestinal Regenerating Crypts in Mouse Histological Images.** *International journal of radiation oncology, biology, physics*
Fu, J., Jiang, H., Melemenidis, S., Viswanathan, V., Dutt, S., Lau, B., Soto, L. A., Manjappa, R., Skinner, L., Yu, S. J., Surucu, M., Graves, E. E., Casey, et al
2023; 117 (2S): S117-S118
- **Equivalent Dose Estimation in FLASH Irradiation with a Deep Learning Approach.** *International journal of radiation oncology, biology, physics*
Yang, Z., Fu, J., Melemenidis, S., Viswanathan, V., Dutt, S., Lau, B., Soto, L. A., Manjappa, R., Skinner, L., Yu, S. J., Surucu, M., Casey, K., Rankin, et al
2023; 117 (2S): e272
- **An Online AI-Powered Interactive Histological Image Annotation Platform for Analyzing Intestinal Regenerating Crypts in Post-Irradiated Mice.** *International journal of radiation oncology, biology, physics*
Jiang, H., Fu, J., Melemenidis, S., Viswanathan, V., Dutt, S., Lau, B., Soto, L. A., Manjappa, R., Skinner, L., Yu, S. J., Surucu, M., Graves, E. E., Casey, et al
2023; 117 (2S): e676
- **Design of a mucin-selective protease for targeted degradation of cancer-associated mucins.** *Nature biotechnology*
Pedram, K., Shon, D. J., Tender, G. S., Mantuano, N. R., Northey, J. J., Metcalf, K. J., Wisnovsky, S. P., Riley, N. M., Forcina, G. C., Malaker, S. A., Kuo, A., George, B. M., Miller, et al
2023
- **Subfunctionalized expression drives evolutionary retention of ribosomal protein paralogs Rps27 and Rps27l in vertebrates.** *eLife*
Xu, A. F., Molinuevo, R., Fazzari, E., Tom, H., Zhang, Z., Menendez, J., Casey, K. M., Ruggero, D., Hinck, L., Pritchard, J. K., Barna, M.
2023; 12
- **Lineage-Specific Induced Pluripotent Stem Cell-Derived Smooth Muscle Cell Modeling Predicts Integrin Alpha-V Antagonism Reduces Aortic Root Aneurysm Formation in Marfan Syndrome Mice.** *Arteriosclerosis, thrombosis, and vascular biology*
Nakamura, K., Dalal, A. R., Yokoyama, N., Pedroza, A. J., Kusadokoro, S., Mitchel, O., Gilles, C., Masoudian, B., Leipzig, M., Casey, K. M., Hiesinger, W., Uchida, T., Fischbein, et al
2023
- **An optimized bioluminescent substrate for non-invasive imaging in the brain.** *Nature chemical biology*
Su, Y., Walker, J. R., Hall, M. P., Klein, M. A., Wu, X., Encell, L. P., Casey, K. M., Liu, L. X., Hong, G., Lin, M. Z., Kirkland, T. A.
2023
- **Brain Permeable Bioluminescent Substrate for NanoLuc based Reporters**
Walker, J. R., Su, Y., Wu, X., Casey, K., Hong, G., Kirkland, T. A., Lin, M. Z.
AMER SOC CELL BIOLOGY.2023: 662
- **Canagliflozin retards age-related lesions in heart, kidney, liver, and adrenal gland in genetically heterogenous male mice.** *GeroScience*
Snyder, J. M., Casey, K. M., Galecki, A., Harrison, D. E., Jayathne, H., Kumar, N., Macchiarini, F., Rosenthal, N., Sadagurski, M., Salmon, A. B., Strong, R., Miller, R. A., Ladiges, et al

2022

- **A novel photosynthetic biologic topical gel for enhanced localized hyperoxygenation augments wound healing in peripheral artery disease.** *Scientific reports*
Zhu, Y., Jung, J., Anilkumar, S., Ethiraj, S., Madira, S., Tran, N. A., Mullis, D. M., Casey, K. M., Walsh, S. K., Stark, C. J., Venkatesh, A., Boakye, A., Wang, et al
2022; 12 (1): 10028
- **Degenerative Osteoarthropathy in Laboratory Housed Xenopus (*Silurana*) tropicalis.** *Comparative medicine*
Zhang, M., Wilson, S. S., Casey, K. M., Thomson, P. E., Zlatow, A. L., Langlois, V. S., Green, S. L.
1800; 71 (6): 512-520
- **Fibrous Osteodystrophy, Chronic Renal Disease, and Uterine Adenocarcinoma in Aged Gray Mouse Lemurs (*Microcebus murinus*).** *Comparative medicine*
Casey, K. M., Karanewsky, C. J., Pendleton, J. L., Krasnow, M. R., Albertelli, M. A.
2021; 71 (3): 256-266
- **Antitumor effects of iPSC-based cancer vaccine in pancreatic cancer.** *Stem cell reports*
Ouyang, X., Liu, Y., Zhou, Y., Guo, J., Wei, T., Liu, C., Lee, B., Chen, B., Zhang, A., Casey, K. M., Wang, L., Kooreman, N. G., Habtezion, et al
2021
- **Management of Morbidity and Mortality in a New Zealand White Rabbit Model of Steroid-Induced Osteonecrosis of the Femoral Head** *COMPARATIVE MEDICINE*
Casey, K. M., Gore, F., Vilches-Moure, J. G., Maruyama, M., Goodman, S. B., Yang, Y., Baker, S. W.
2021; 71 (1): 86-98
- **Mitochondrial copper depletion suppresses triple-negative breast cancer in mice.** *Nature biotechnology*
Cui, L., Gouw, A. M., LaGory, E. L., Guo, S., Attarwala, N., Tang, Y., Qi, J., Chen, Y., Gao, Z., Casey, K. M., Bazhin, A. A., Chen, M., Hu, et al
2020
- **FLASH irradiation enhances the therapeutic index of abdominal radiotherapy in mice**
Natarajan, S., Levy, K., Wang, J., Chow, S., Eggold, J., Loo, P., Manjappa, R., Lartey, F. M., Schuler, E., Skinner, L., Rafat, M., Ko, R., Kim, et al
AMER ASSOC CANCER RESEARCH.2020
- **Novel NanoLuc substrates enable bright two-population bioluminescence imaging in animals.** *Nature methods*
Su, Y., Walker, J. R., Park, Y., Smith, T. P., Liu, L. X., Hall, M. P., Labanieh, L., Hurst, R., Wang, D. C., Encell, L. P., Kim, N., Zhang, F., Kay, et al
2020
- **The Stability and Efficacy of Tricaine Methanesulfonate (MS222) Solution After Long-Term Storage** *JOURNAL OF THE AMERICAN ASSOCIATION FOR LABORATORY ANIMAL SCIENCE*
Katz, E. M., Chu, D. K., Casey, K. M., Jampachaisri, K., Felt, S. A., Pacharinsak, C.
2020; 59 (4): 393-400
- **Premature thymic involution and oropharyngeal blistering cause early lethality in generalized severe junctional epidermolysis bullosa**
Yenamandra, V. K., Dolorito, J., Gurevitch, I., Godoy, E., Casey, K., Marinkovich, M. P.
ELSEVIER SCIENCE INC.2020: S35
- **Tumor shedding and metastatic progression after tumor excision in patient-derived orthotopic xenograft models of triple-negative breast cancer.** *Clinical & experimental metastasis*
Razmara, A. M., Sollier, E., Kisirkoi, G. N., Baker, S. W., Bellon, M. B., McMillan, A., Lemaire, C. A., Ramani, V. C., Jeffrey, S. S., Casey, K. M.
2020
- **Histologic safety of transcranial focused ultrasound neuromodulation and magnetic resonance acoustic radiation force imaging in rhesus macaques and sheep.** *Brain stimulation*
Gaur, P., Casey, K. M., Kubanek, J., Li, N., Mohammadjavadi, M., Saenz, Y., Glover, G. H., Bouley, D. M., Pauly, K. B.
2020; 13 (3): 804-14
- **AND-gate contrast agents for enhanced fluorescence-guided surgery.** *Nature biomedical engineering*
Widen, J. C., Tholen, M. n., Yim, J. J., Antaris, A. n., Casey, K. M., Rogalla, S. n., Klaassen, A. n., Sorger, J. n., Bogoyo, M. n.
2020
- **Multi-modal imaging reveals differential brain volumetric, biochemical, and white matter fiber responsivity to repeated intermittent ethanol vapor exposure in male and female rats.** *Neuropharmacology*

Zahr, N. M., Lenart, A. M., Karpf, J. A., Casey, K. M., Pohl, K. M., Sullivan, E. V., Pfefferbaum, A. n.

2020: 108066

- **FLASH Irradiation Results in Reduced Severe Skin Toxicity Compared to Conventional-Dose-Rate Irradiation.** *Radiation research*
Soto, L. A., Casey, K. M., Wang, J. n., Blaney, A. n., Manjappa, R. n., Breikreutz, D. n., Skinner, L. n., Dutt, S. n., Ko, R. B., Bush, K. n., Yu, A. S., Melemenidis, S. n., Strober, et al
2020
- **Abdominal FLASH irradiation reduces radiation-induced gastrointestinal toxicity for the treatment of ovarian cancer in mice.** *Scientific reports*
Levy, K. n., Natarajan, S. n., Wang, J. n., Chow, S. n., Eggold, J. T., Loo, P. E., Manjappa, R. n., Melemenidis, S. n., Lartey, F. M., Schüler, E. n., Skinner, L. n., Rafat, M. n., Ko, et al
2020; 10 (1): 21600
- **Biodegradable fluorescent nanoparticles for endoscopic detection of colorectal carcinogenesis.** *Advanced functional materials*
Rogalla, S., Flisikowski, K., Gorpas, D., Mayer, A. T., Flisikowska, T., Mandella, M. J., Ma, X., Casey, K. M., Felt, S. A., Saur, D., Ntziachristos, V., Schnieke, A., Contag, et al
2019; 29 (51)
- **Biodegradable Fluorescent Nanoparticles for Endoscopic Detection of Colorectal Carcinogenesis** *ADVANCED FUNCTIONAL MATERIALS*
Rogalla, S., Flisikowski, K., Gorpas, D., Mayer, A. T., Flisikowska, T., Mandella, M. J., Ma, X., Casey, K. M., Felt, S. A., Saur, D., Ntziachristos, V., Schnieke, A., Contag, et al
2019; 29 (51)
- **EVALUATION OF DYNAMIN 2 (DNM2) AS A THERAPEUTIC TARGET IN LEPTOMENINGEAL METASTATIC DISEASE**
Chernikova, S., Polyak, D., Deng, J., Tsau, S., Casey, K., Johnson, E., Bhambhani, H., Khoeur, L., Stanley, G., Tran, K., Connolly, I., Joyce, A., Li, et al
OXFORD UNIV PRESS INC.2019: 57
- **Investigating circulating tumor cells and distant metastases in patient-derived orthotopic xenograft models of triple-negative breast cancer.** *Breast cancer research : BCR*
Ramani, V. C., Lemaire, C. A., Triboulet, M., Casey, K. M., Heirich, K., Renier, C., Vilches-Moure, J. G., Gupta, R., Razmara, A. M., Zhang, H., Sledge, G. W., Sollier, E., Jeffrey, et al
2019; 21 (1): 98
- **Novel NanoLuc substrates enable bright and sustained bioluminescence imaging in animals**
Walker, J., Park, Y., Smith, T., Wang, D., Hall, M., Liu, L., Hurst, R., Su, Y., Encell, L., Kim, N., Casey, K., Kirkland, T., Lin, et al
AMER CHEMICAL SOC.2019
- **Total abdominal ultra-rapid flash irradiation decreases gastrointestinal toxicity compared to conventional radiation**
Levy, K., Rafat, M., Casey, K., Rankin, E.
ACADEMIC PRESS INC ELSEVIER SCIENCE.2019: 75
- **Preclinical testing of ultra-rapid FLASH total abdominal irradiation demonstrates survival benefit and decreased gastrointestinal toxicity compared to conventional external beam radiation.**
Levy, K., Rafat, M., Schueler, E., Eggold, J., Wang, J., Casey, K., Koong, A., Maxim, P., Loo, B. W., Rankin, E.
AMER SOC CLINICAL ONCOLOGY.2019
- **Remodeling of epigenome and transcriptome landscapes with aging in mice reveals widespread induction of inflammatory responses** *GENOME RESEARCH*
Benayoun, B. A., Pollina, E. A., Singh, P., Mahmoudi, S., Harel, I., Casey, K. M., Dulken, B. W., Kundaje, A., Brunet, A.
2019; 29 (4): 697–709
- **Western diet regulates immune status and the response to LPS-driven sepsis independent of diet-associated microbiome** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Napier, B. A., Andres-Terre, M., Massis, L. M., Hryckowian, A. J., Higginbottom, S. K., Cumnock, K., Casey, K. M., Haileselassie, B., Lugo, K. A., Schneider, D. S., Sonnenburg, J. L., Monack, D. M.
2019; 116 (9): 3688–94
- **SETD3 is an actin histidine methyltransferase that prevents primary dystocia** *NATURE*
Wilkinson, A. W., Diep, J., Dai, S., Liu, S., Ooi, Y., Song, D., Li, T., Horton, J. R., Zhang, X., Liu, C., Trivedi, D. V., Ruppel, K. M., Vilches-Moure, et al
2019; 565 (7739): 372–+

- **Pravastatin improves fetal survival in mice with a partial deficiency of heme oxygenase-1. *Placenta***
Tsur, A. n., Kalish, F. n., Burgess, J. n., Nayak, N. R., Zhao, H. n., Casey, K. M., Druzin, M. L., Wong, R. J., Stevenson, D. K.
2019; 75: 1–8
- **Pravastatin improves fetal survival in mice with a partial deficiency of heme oxygenase-1 *PLACENTA***
Tsur, A., Kalish, F., Burgess, J., Nayak, N. R., Zhao, H., Casey, K. M., Druzin, M. L., Wong, R. J., Stevenson, D. K.
2019; 75: 1–8
- **Validation of a geropathology grading system for aging mouse studies. *GeroScience***
Snyder, J. M., Snider, T. A., Ciol, M. A., Wilkinson, J. E., Imai, D. M., Casey, K. M., Vilches-Moure, J. G., Pettan-Brewer, C. n., Pillai, S. P., Carrasco, S. E., Salimi, S. n., Ladiges, W. n.
2019
- **Proliferative Typhlocolitis With Multinucleated Giant Cells: A Nonspecific Enteropathy in Immunodeficient Sentinel Mice *VETERINARY PATHOLOGY***
Casey, K. M., Johnson, A. L., Hunrath, M. N., Fraser, J. K., McCowan, N. C., Wasson, K., Doty, R. A., Griffey, S. M., Imai, D. M.
2019; 56 (1): 157–68
- **Evaluation of 3 Alcohol-based Agents for Presurgical Skin Preparation in Mice. *Journal of the American Association for Laboratory Animal Science : JAALAS***
Huss, M. K., Casey, K. M., Hu, J. n., Moorhead, R. C., Chum, H. H.
2019
- **What is your diagnosis? Conjunctival smear in a dog *VETERINARY CLINICAL PATHOLOGY***
Gonzales-Viera, O., Casey, K., Keel, M.
2018; 47 (3): 509-510
- **What is your diagnosis? Conjunctival smear in a dog. *Veterinary clinical pathology***
Gonzales-Viera, O., Casey, K., Keel, M. K.
2018
- **Pravastatin Induces Heme Oxygenase Activity and Enhances Placental Development in a Murine Model.**
Tsur, A., Kalish, F., Burgess, J., Zhao, H., Casey, K. M., Druzin, M. L., Wong, R. J., Stevenson, D. K.
SAGE PUBLICATIONS INC.2018: 155A–156A
- **Pravastatin improves pregnancy outcome and placental development in heme oxygenase-1 deficient mice**
Tsur, A., Kalish, F., Burgess, J., Zhao, H., Casey, K., Druzin, M. L., Wong, R. J., Stevenson, D. K.
MOSBY-ELSEVIER.2018: S202
- **TREATMENT WITH PRAVASTATIN IMPROVES PREGNANCY OUTCOME AND PLACENTAL DEVELOPMENT IN HEME OXYGENASE-1-DEFICIENT MICE**
Tsur, A., Kalish, F., Burgess, J., Zhao, H., Casey, K. M., Druzin, M. L., Wong, R. J., Stevenson, D. K.
BMJ PUBLISHING GROUP.2018: 241–42
- **SETD3 is an actin histidine methyltransferase that prevents primary dystocia. *Nature***
Wilkinson, A. W., Diep, J. n., Dai, S. n., Liu, S. n., Ooi, Y. S., Song, D. n., Li, T. M., Horton, J. R., Zhang, X. n., Liu, C. n., Trivedi, D. V., Ruppel, K. M., Vilches-Moure, et al
2018
- **Identification of occult micrometastases and isolated tumour cells within regional lymph nodes of previously diagnosed non-metastatic (stage 0) canine carcinomas *VETERINARY AND COMPARATIVE ONCOLOGY***
Casey, K. M., Steffey, M. A., Affolter, V. K.
2017; 15 (3): 785–92
- **Partial gastrectomy for resection of a gastric leiomyoma in a guinea pig (*Cavia porcellus*) *JAVMA-JOURNAL OF THE AMERICAN VETERINARY MEDICAL ASSOCIATION***
Gardhouse, S. M., Guzman, D., Sadar, M. J., DeRouen, A. J., Bucy, D. S., Adedeji, A. O., Vernau, W., Casey, K. M., Mohr, F., Steffey, M. A.
2016; 249 (12): 1415–20
- **Bilateral Aural Adenocarcinoma in a Congo African Grey Parrot (*Psittacus erithacus erithacus*) *JOURNAL OF AVIAN MEDICINE AND SURGERY***
Houck, E. L., Keller, K. A., Hawkins, M. G., Burton, A. G., Casey, K. M., Keel, K., Tong, N., Guzman, D.
2016; 30 (3): 257–62

- **Bilaterally Symmetric Focal Cortical Dysplasia in a Golden Retriever Dog** *JOURNAL OF COMPARATIVE PATHOLOGY*
Casey, K. M., Bollen, A. W., Winger, K. M., Vernau, K. M., Dickinson, P. J., Higgins, R. J., Siso, S.
2014; 151 (4): 375–79
- **Reproductive Experience Alters Neural and Behavioural Responses to Acute Oestrogen Receptor alpha Activation** *JOURNAL OF NEUROENDOCRINOLOGY*
Byrnes, E. M., Casey, K., Carini, L. M., Bridges, R. S.
2013; 25 (12): 1280–89
- **Reproductive experience modifies the effects of estrogen receptor alpha activity on anxiety-like behavior and corticotropin releasing hormone mRNA expression** *HORMONES AND BEHAVIOR*
Byrnes, E. M., Casey, K., Bridges, R. S.
2012; 61 (1): 44–49