

FVSP Faculty Application Checklist-**DUE 1/20/2023 5PM EST**

- Completed cover page with prior mentorship history
- Training/Registration requirements needed
- Abstract of proposed work
- NIH-format biosketch

Submission Instructions

Convert the application to *one .pdf document*. Name the file using your last name, followed by an underscore, and your first initial. For example: Walden_H.pdf

Submit the following pages, via email attachment, to Dr. Heather Walden (hdstockdale@ufl.edu). The subject line should read “FVSP Faculty Application”.

The FVSP Research Program runs 5/22/2023 to 7/28/2023 with final research presentations prior to the national symposium.

2023 Linda F. Hayward Florida Veterinary Scholars Program Faculty Application

Name	Elizabeth Maxwell
Email address	Emaxwell@ufl.edu
Proposed project title	Detecting and quantifying kratom metabolites in urine of 8 research beagles
Will you provide matching student stipend funding (\$3250)?	No
Source of project/research funding	

Prior student research mentees (last 5 years, if applicable):

CLASS	STUDENT	PROJECT TITLE	STATUS
2025	Molly Cohen	Endoscopic treatment of tracheal lacerations with fibrin glue - a feline cadaveric study	Published
2023	Alyssa Carillo	Management of open wounds using a bioresorbable polymeric wound matrix in dogs: 14 cases (2019-2021)	Published
2022	Meghan Watt	The Role of Carbon Nanoparticles in Oncologic Surgery and Targeted Chemotherapy Delivery	Published
2021	Seth Locker	Novel treatment of recurrent abdominal lymphatic malformations in a dog	Published
2024	Madison Hurley and Seth Straw	Cytotoxicity of mitragynine to canine hemangiosarcoma cell lines	Manuscript in preparation

If project qualifies for Morris Animal Foundation Student Scholarship Funding and you have identified a specific interested student, please provide their name and email address

LAST NAME	FIRST NAME	EMAIL ADDRESS

I agree to obtaining all necessary approvals (e.g. IACUC/IRB/EH&S/VHRRRC – see below for specifics) to conduct the project with the student PRIOR to the commencement of the summer program, as well as submitting documentation of these approvals to the FVSP board by 5/11/2023

YES
 NO

I agree to assisting my student prepare for the summer program during the Spring semester, which will include preparation of a study outline, and training in relevant laboratory techniques

YES NO

I agree to plan for commencing the experiment/data collection by the beginning of the summer program (5/22/23)

YES NO

I agree to be available to the student throughout the summer to assist with the experiment/data collection, preparation of the manuscript and poster.

YES NO

	Needed (Yes/No)	Approval by 5/11/23 (Yes/No)?
IACUC Approval and Training	No	
IRB Registration and Training	No	
Biological Agent Registration	No	
Biopath Registration	No	
Veterinary Hospital Research	No	
FERPA Training	No	
Biohazardous Waste Training	No	
Laboratory Safety Training	Yes	

Abstract of proposed student project (1 page limit. This should mirror the aims page of a grant and CLEARLY indicate the student's role.)

Detecting and Quantifying Kratom Metabolites in Urine of Research Beagles Administered a Single Dose of Kratom Using Over the Counter Kratom Urine Tests

Rationale:

Kratom, a psychoactive plant-derived substance, has gained popularity for its purported medicinal properties. However, limited research exists on its pharmacokinetics and metabolites in veterinary medicine. This study aims to investigate the presence and quantification of kratom metabolites in the urine of research beagles following a single dose. Utilizing over-the-counter kratom urine tests, commonly available for human use, will provide a practical and accessible method for monitoring kratom exposure in veterinary settings.

Aims:

- 1.) To assess and quantify kratom metabolites in the urine of beagles following a single controlled dose of kratom to research beagles, using over-the-counter kratom urine tests.
- 2.) To analyze the time course of kratom metabolite excretion in urine post-administration
- 3.) Compare over the counter kratom detection methods with mass spectrometry for detection of kratom urine metabolites.

Methods:

Eight healthy adult research beagles were administered a single dose of oral kratom for a study evaluating serum pharmacokinetics. The dose was within a range relevant to reported therapeutic usage. Urine was pre-emptively collected every 4-8 hours via free catch and stored at -80 degrees C for use at a later date.

Commercially available over-the-counter kratom urine tests designed for human use will be employed. The tests will be validated for canine urine by comparing results with liquid chromatography-mass spectrometry (LC-MS), a gold standard for drug metabolite detection. Quantitative analysis of kratom metabolites in urine will be conducted using the over-the-counter tests. Additional confirmation and quantification will be performed using LC-MS for select samples. Time course data will be analyzed to determine peak metabolite concentrations and elimination rates.

Kratom metabolite concentrations will be presented graphically over time. Statistical analyses, such as paired t-tests or non-parametric equivalents, will be applied to compare baseline and post-administration values.

Clinical Significance:

Utilizing over-the-counter kratom urine tests provides a cost-effective and accessible method for routine monitoring of kratom exposure in veterinary practice. This study's outcomes will enhance our understanding of kratom metabolism in dogs and provide practical tools for veterinarians to monitor kratom exposure in

clinical settings. It may have broader implications for the safe and responsible use of kratom-containing products in veterinary medicine, safeguarding the health of companion animals.

Student responsibilities:

As the urine samples have already been collected and frozen, the student would be responsible for thawing all samples and running the urine test for identification of kratom on a commercially available over the counter kratom urine test. Urine metabolites have already been measured via LC-MS for comparison. The student will be responsible for data analysis (with the assistance of a statistician if needed) and for writing up the manuscript for publication (with assistance of other authors/investigators and mentor. They will be the primary author for this study.

BIOGRAPHICAL SKETCH

NAME: Elizabeth A Maxwell

POSITION TITLE: Assistant Professor – Surgical Oncology

EDUCATION/TRAINING (*Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.*)

INSTITUTION AND LOCATION	DEGREE	END DATE MM/YYYY	FIELD OF STUDY
University of Florida, Gainesville, FL	BS	05/2008	Animal Science
Ross University, St. Kitts, West Indies	DVM	01/2012	Veterinary Medicine
University of Illinois, Urbana, IL.	MS	06/2018	Veterinary Science
University of Illinois, Urbana, IL.	Residency	07/2018	Small Animal Surgery

A. Personal Statement

I am a board-certified small animal surgeon specializing in surgical oncology with over 8 years of research and clinical experience in small animal surgery. My research interests focus on novel treatments for cancer. As a surgical oncologist and clinical scientist, my knowledge, background, and collaborative research experiences, ensures I can provide a significant contribution to the design and execution of this study.

B. Positions

2023-current **Assistant Professor, Surgical Oncology**
University of Florida College of Veterinary Medicine, Gainesville, FL.

2020-current **Clinical Assistant Professor, Surgical Oncology**
University of Florida College of Veterinary Medicine, Gainesville, FL.

2019-2020 **Adjunct Clinical Instructor, Surgical Oncology**
University of Florida College of Veterinary Medicine, Gainesville, FL.

2018-2019 **Fellowship in Surgical Oncology**
University of Florida College of Veterinary Medicine, Gainesville, FL.

2015-2018 **Residency in Small Animal Surgery**
University of Illinois College of Veterinary Medicine, Urbana, IL.

2014-2015 **Fellowship in Small Animal Surgery**
Lauderdale Veterinary Specialists, Fort Lauderdale, FL

2013-2014 **Internship in Small Animal Surgery**
Wheat Ridge Veterinary Specialists, Wheat Ridge, CO

2012-2013 **Internship in Companion Animal Medicine and Surgery**
Louisiana State University, School of Veterinary Medicine, Baton Rouge, LA.

Honors

2018 American College of Veterinary Surgeons Video Competition- 2nd Place
2018 University of Illinois Graduate College Conference Travel Funds Award
2017 University of Illinois Research Live Finalist
2017 Phi Zeta College of Veterinary Medicine Research Day Lightning Talk Competition

2017 University of Illinois Graduate College Conference Travel Funds Award
2012 Certificate of Appreciation, American Society for the Prevention and Cruelty to Animals

C. Select Contributions to Science

Worden NJ, Bertran J, Watt MM, Reynolds PS, Souza C, **Maxwell EA**, Fox-Alvarex WA, Adin CA, Ham K, Regier PJ, Sapper MS. Superficial anatomic landmarks can be used to triangulate the location of canine peripheral lymphocentrums: superficial cervical, axillary, and superficial inguinal. *J Am Vet Med Assoc.* 2023;1-10.

Huerta Y(p), De Mello Souza CH, Selmic LE, McGrath A, Skinner OT, Dark KV, Traverson M, Snell WL, **Maxwell EA**, Bertran J, & Hasiuk M. 2022. Complications associated with iliosacral lymphadenectomy in dogs with metastatic apocrine gland anal sac adenocarcinoma. *The Canadian veterinary journal*, 63(9), 929–934.

Watt M, Moitra P, Sheffield Z, Ostadhossein F, **Maxwell EA**, & Pan D. (2022). A narrative review on the role of carbon nanoparticles in oncology. *Wiley interdisciplinary reviews. Nanomedicine and nanobiotechnology*, e1845. Advance online publication. <https://doi.org/10.1002/wnan.1845>

Cook MR, Gasparini M, Cianciolo RE, Brown ME, Moore AS, Curran KM, **Maxwell EA**, Gasson S, Wustefeld-Janssens BG, Veluvolu SM, Keepman S, Wouda R, Griffin LR, Selmic LE. Clinical outcomes of thyroid tumours with concurrent epithelial and mesenchymal components in 14 dogs (2006-2020). *Vet Med Sci.* 2022 Mar;8(2):509-516.

Almodovar N, Huguet E, Miller B, Craft S, **Maxwell EA**, Gallastegui A, Vilaplana Grosso FR. What is your diagnosis? Perosteal osteosarcoma of the distal tibia in a dog that imitates a joint-associated synovial neoplasm. *J of Amer Vet Med Ass.* 2022 259 (S1).

Locker SH, **Maxwell EA**, Grosso FR, Bertran J, Shiomitsu K. Novel treatment of recurrent abdominal lymphatic malformations in the dog. *Vet Rec Case Reports.* 2021;9:e127.

Harding K, Souza CS, Shiomitsu K, Bertran J, **Maxwell E**, C-KIT, FIT-3, PDGFR-B, and VEGFR2 expression in canine adrenal tumors and correlation with outcome following adrenalectomy. *Can J of Vet Res.* (Accepted July 2021)

Almodovar N, Huguet E, Miller B, Craft S, **Maxwell EA**, Gallastegui A, Vilaplana Grosso FR. What is your diagnosis? Perosteal osteosarcoma of the distal tibia in a dog that imitates a joint-associated synovial neoplasm. *J of Amer Vet Med Ass.* (Accepted March 2021)

Locker SH, **Maxwell EA**, Grosso FR, Bertran J, Shiomitsu K. Novel treatment of recurrent abdominal lymphatic malformations in the dog. *Vet Rec Case Reports.* June 15, 2021. Vol 9 (3), e127

Rivenburg R, Gailbreath K, Campbell K, **Maxwell EA**. Surgical resection of colonic hemangiosarcoma in a cat. *Vet Rec Case Reports:* April 8, 2021. Vol 9 (2), e72.

Maxwell EA, Phillips H, Selmic LE, Schaeffer DJ, Vieson MD, Clark-Price SC, Fan TM. Pharmacokinetics of platinum and safety evaluation of carboplatin-impregnated calcium sulfate hemihydrate beads after implantation in healthy cats. *Vet Surg.* 2020;49(4):748-757.

Maxwell, EA. Thesis: Evaluation of carboplatin-impregnated calcium sulfate hemihydrate beads as a local treatment option for feline injection site-associated sarcomas. Advisor: Heidi Phillips. Published Sep 2018. [Ideals.illinois.edu/handle/2142/101244](https://ideals.illinois.edu/handle/2142/101244).

Phillips H, **Maxwell EA**, Schaeffer DJ, Fan TM. Simulation of spatial diffusion of platinum from carboplatin-impregnated calcium sulfate hemihydrate beads by use of an agarose gelatin tissue phantom. *Am J Vet Res.* 2018;79(6):592-599.

Maxwell EA, Phillips H, Schaeffer DJ, Fan TM. In vitro chemosensitivity of feline injection site-associated sarcoma cell lines to carboplatin. *Vet Surg.* 2018; 47:219-226

D. Additional Information: Research Support and/or Scholastic Performance

Ongoing Research Support

AKC Canine Health Foundation
2022-2023

Evaluating accuracy for identification of sentinel lymph nodes in dogs with cutaneous mast cell tumors; a comparison between preoperative CT lymphography, intraoperative indocyanine green near infrared fluorescence imaging and the standard cytology of the locoregional lymph node.

Role: Co-I

Veterinary Society of Surgical Oncology
2022-2023

Accuracy of NIRF in detecting SLN for canine cutaneous MCT: A veterinary society of surgical oncology study

Role: Co-I

University of Florida 2021 CVM Spring Consolidated Faculty Research Development Award Grant Competition

06/01/21-06/01/22

Controlled non-inferiority trial evaluating the use of liposomal bupivacaine on postoperative analgesia in canine hindlimb amputations.

Role: PI

University of Florida 2021 Unique Opportunity Grant Competition

06/01/21-06/01/22

Evaluation of the effect of mitragynine on naturally occurring osteoarthritic pain in a canine model, a prospective, randomized, crossover, double-blinded, placebo-controlled clinical trial.

Role: PI

E. Student request or ranking