

20TH ANNUAL RESEARCH DAY

SCIENTIFIC PROCEEDINGS

JAN. 26, 2019 | C. WAYNE MCILWRAITH TRANSLATIONAL MEDICINE INSTITUTE



COLLEGE OF VETERINARY MEDICINE
AND BIOMEDICAL SCIENCES
COLORADO STATE UNIVERSITY

OUR 20TH ANNUAL RESEARCH DAY SHOWCASES THE work of more than 100 aspiring scientists in Colorado State University's College of Veterinary Medicine and Biomedical Sciences. The event gives our rising stars vital experience presenting their research findings to a scientific audience through poster displays and talks. The day also provides young researchers with an avenue for feedback to help them develop ideas that, in many cases, will become lifelong scientific pursuits.

The research projects on display are sponsored by companies, foundations, and institutions concerned with improving human, animal, and environmental well-being. Thank you for supporting and engaging with our presenters - undergraduate students, graduate students, veterinary residents, and post-doctoral fellows - as they pursue research that will improve the health of animals, people, and the planet!

**2019 CVMBS Research Day
Organizing Committee**

Kelly Santangelo – Faculty Chair – Microbiology,
Immunology, and Pathology

Adam Chicco – Faculty Co-Chair –
Biomedical Sciences

Lindsey Burton – Environmental and
Radiological Health Sciences

Carolina Gonzalez-Berrios – Biomedical Sciences

Dilara Kiran – Microbiology,
Immunology, and Pathology

Lance Li Puma – Biomedical Sciences

Alissa Mathias – Cell and Molecular Biology

Asma Omar – Biomedical Sciences

Derek Schaeuble – Biomedical Sciences

Ariel Timkovich – Microbiology,
Immunology, and Pathology

Aimee Oke – Committee Coordinator –
CVMBS Dean's Office

Theresa Rulon – Committee Coordinator –
CVMBS Dean's Office

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SCHEDULE OF EVENTS

10-11:45 a.m.	Poster set up	TMI 1st Floor Lobby
10-11:45 a.m.	Tours of the Translational Medicine Institute	TMI 1st Floor Lobby
Noon	Opening Remarks	TMI 331
12:10 p.m.	ZOETIS RESEARCH EXCELLENCE AWARD WINNER – Dr. Jeremiah Easley	TMI 331
12:50 p.m.	Break	
1-5 p.m.	ORAL SESSION 1: Clinical/Basic Sciences	TMI 331
1-5 p.m.	ORAL SESSION 2: Basic Sciences	TMI 325
1-5 p.m.	ORAL SESSION 3: Basic Sciences	TMI 300
1-2:45 p.m.	POSTER SESSION I JUDGING: Odd-Numbered Posters	1st Floor
2:45-3 p.m.	Break	
3-4:45 p.m.	POSTER SESSION II JUDGING: Even-Numbered Posters	1st Floor
5-6 p.m.	Social Hour	TMI Grand Hall, Room 330
6 p.m.	Awards	TMI Grand Hall, Room 330

DEPARTMENTAL ABBREVIATIONS

BMS:	Biomedical Sciences
CS:	Clinical Sciences
ERHS:	Environmental and Radiological Health Sciences
MIP:	Microbiology, Immunology, and Pathology

CONGRATULATIONS AGAIN TO 2018 CVMBS RESEARCH DAY WINNERS!

ORAL PRESENTATIONS

- First Basic** Ashley Turnidge, graduate student, BMS, "Sex-dependent glucocorticoid regulation of the corticotropin releasing hormone (CRH) gene."
Mentor: Robert Handa
- Second Basic** Adam Heck, graduate student, MIP, "Regulation of neural differentiation through RNA methylation in stem cells." Mentor: Carol Wilusz
- Third Basic** Emma Krakoff, DVM student, Cornell, "De novo exploration of MHC class I genes in the Arabian horse." Mentor: Douglas Antczak
- First Clinical** Cindy Vaca, DVM student, CS, "Effect of maropitant and omeprazole on recovery quality in dogs undergoing routine ovarioectomy." Mentor: Pedro Boscan
- Second Clinical** Edward Cheng, DVM student, CS, "Comparison of alfaxalone and propofol with or without butorphanol for evaluation of laryngeal function in normal dogs."
Mentor: Catriona MacPhail
- Third Clinical** Stephen Pannone, DVM student, CS, "Comparison of serotonin levels between pit bull-type and non-pit bull-type dogs in shelters" Mentor: Rebecca Ruch-Gallie

POSTER PRESENTATIONS

- First** Shilo Bryan, DVM student, CS, "Effect of maropitant and omeprazole on gastroesophageal reflux in anesthetized dogs undergoing routine ovarioectomy."
Mentor: Pedro Boscan
- Second** Mark Parlier, DVM student, MIP, "Snake mites (*Ophionyssus natricis*) as a potential vector for reptarenavirus infection in snake populations."
Mentor: Mark Stenglein
- Third** Camron Pearce, graduate student, CS, "Inhaled clofazimine for the treatment of *Mycobacterium abscessus* and *Mycobacterium tuberculosis* infections."
Mentor: Mercedes Gonzalez-Juarrero
- Golden Pipette Award** Department of Microbiology, Immunology, and Pathology

EASLEY TO RECEIVE 2018 ZOETIS AWARD FOR VETERINARY RESEARCH EXCELLENCE

By Mary Guiden



DR. JEREMIAH EASLEY'S CAREER path has come full circle. As a young boy, he lived with his family in Fort Collins while his father, Jack – an accomplished equine veterinarian – completed a sabbatical under Dr. Simon Turner at Colorado State University.

Now, Easley serves as co-director of the lab Preclinical Surgical Research Laboratory at CSU, which was launched by Turner more than 20 years ago.

“I grew up knowing who Simon Turner was,” Easley explained. “In my mind, he was always this special person. I did not know what openings might exist right out of a residency, but I’m glad I kept an open mind and gave it a shot, because I’ve loved what I’m doing from day one.”

Growing up as a veterinarian’s son, Easley said he always had an interest in the field, but he wasn’t sure initially if it was for him.

He explored other areas as an undergraduate, first majoring in art and then, marine biology. But he was ultimately drawn to veterinary medicine, and received his DVM from Virginia-Maryland College of Veterinary Medicine in 2007. While there, he began to formulate his career goals, which included specializing in surgery.

Easley landed an internship with an equine veterinary practice in Ocala, Florida, which further fueled his interests in equine surgery. He then completed a residency at the University of Florida in large animal surgery.

DETERMINED, BUT IN A ‘GOOD WAY’

Easley returned to Fort Collins in 2011, after his wife, Dr. Jennifer Hatzel, lined up a residency with Dr. Patrick McCue in the Equine Reproduction Laboratory at CSU.

One of the jobs he interviewed for was a position at the Preclinical Surgical Research Laboratory. Dr. Howard Seim III, the lab’s director, said he thought Easley might stick around for a few years, since the job opening was temporary.

Easley learned quickly, yet has always remained humble, Seim said.

“He’s unbelievably good at nurturing relationships with corporate sponsors and companies,” he said. “He’s gone

from being the new kid in town to the guy who I named my co-director after four years,” he added.

Seim described Easley as “very driven,” but in the best of ways.

“He is driven to make a community of people in a team that can function together to absolutely be successful, and everybody can share in the success,” he said.

TACKLING NEUROLOGICAL DISORDERS, SPINE ISSUES, OSTEOPOROSIS

The team at the Preclinical Surgical Research Laboratory works with companies – including startups – to test new medical devices for use, eventually, in human patients. To date, more than 30 devices have been approved by the U.S. Food and Drug Administration following testing at CSU.

“We provide the ability to help take products from just a simple idea all the way to being implanted in patients, whether they be animals or people,” explained Easley. “Some of the most exciting work I do is when I see a product and recognize that the idea came about because a human patient had a problem, and we come up with a way to fix it. There’s a way to translate that back to the horse or the dog, too.”

Many of the devices that are evaluated in the lab fall under the realm of neurosurgery.

Researchers hope their tests will lead to improvements for the treatment of osteoporosis, spinal disease, disc regeneration, epilepsy, traumatic brain injury, Parkinson’s disease and pain in humans and animals.

INNOVATIVE, INVESTED

Dr. Yvette Nout-Lomas, an associate professor in the Department of Clinical Sciences who works in equine internal medicine at CSU, is currently collaborating with Easley on treatments for horses with Wobbler syndrome, a neurological disease that leads to compression of the spinal cord, and loss of control of the animals’ legs.

CSU is one of only a handful of centers around the world who treat Wobbler syndrome, the most common neurological condition that affects horses in the United States.

The team has treated more than a dozen animal patients to date, with promising results.

“Overall, the success rates have been between 65 to 70 percent,” said Nout-Lomas. “It’s exciting to have somebody like Jeremiah, who is interested in expanding and innovating the current status for horses with Wobbler syndrome, at CSU.”

Erin McCready is pursuing a master’s degree in the Department of Clinical Sciences, and a member of the lab. She described Easley as a great boss and a wonderful mentor, someone who works incredibly hard, but who also likes to have fun.

“Of anyone I’ve ever worked for, he’s the most invested in figuring out what people want to do with their lives, what their goals are and how he can help us achieve them,” she said. “It’s really important for him to build a team that will get work done and also work well together. It’s a priority for him.”

Easley said it’s imperative for students to see themselves as integral parts of the lab. He and Seim include the students, staff and veterinary technicians in dinners with corporate clients, send them to national conferences and hold team-building experiences, including renting out an arcade for a few hours of down time.

“I hope that when students leave our lab, they recognize what it’s like to be part of a good working experience, where teams work together and get a lot of work accomplished,” said Easley.

“I give tons of credit to Simon Turner and Howie Seim,” he said. “Simon developed the lab 25 years ago and he, with the help of Howie, built a wonderful working culture in the lab that was very much like what I envisioned. It’s allowed me to take that and make it my own.”

RESEARCH EXCELLENCE

Dr. Easley is the recipient of the 2018 Zoetis Research Excellence Award and will kick off the 20th annual CVMBS Research Day with a keynote address about the importance of collaboration in the workplace at noon on Saturday, January 26, at the C. Wayne McIlwraith Translational Medicine Institute. Global animal health company Zoetis sponsors Research Day and the Research Excellence Award.

SESSION 1: Clinical/Basic Science

1-5 p.m. | TMI 331

Time	Presenter	Topic	Dept.
1:00	Beale, Melanie	Relationships Between Objectively Measured Physical Activity and Plasma and Stool Metabolome in Individuals at High Risk for Colorectal Cancer Ryan	ERHS
1:15	Colussi, Jennifer	Effect of Topical Diclofenac 0.1% Ophthalmic Solution on Tear Production and Intraocular Pressure in Normal Research Beagles When Administered SID, BID, TID, and QID for 5 Days Henriksen	CS
1:30	Drizin, Sienna	Psychotropic Drug Use to Combat Stress Related Disease in Animal Shelters Ruch-Gallie	CS
1:45	Fukushima, Kenjiro	A Retrospective Study on the Safety of Mycophenolate Mofetil in Dogs Lappin	CS
2:00	Kelley, Jennifer	Dentistry Dogma: Challenging the Status Quo and Putting Suture Patterns to the (Tension) Test Rawlinson	CS
2:15	Kloer, Timothy	Computed Tomographic Pancreatic Perfusion in Normal Dogs Marolf	ERHS
2:30	McFarland, Alexander	Repeated Use of a Thiafentanil Based Anesthesia Protocol in an Okapi (Okapia Johnstoni) Mama	CS
2:45	BREAK		
3:00	McGee, Whitney	Effect of Maropitant, a Neurokinin-1 Antagonist, on Post-Operative Pain and Appetite in Rabbits Sadar	CS
3:15	Pezzanite, Lynn	Amikacin Toxicity Against Normal Joint Cells and Mesenchymal Stem Cells in Horses Dow	CS
3:30	Posukonis, Megan	Fracture Characterization via Computed Tomography in Thoroughbred Racehorses Kawcak	CS
3:45	Stewart, Holly	Physiologic Effects of Immobilization of the Equine Distal Limb Kawcak	CS
4:00	Summers, Stacie	Urinary Biomarkers of Renal Tubular Injury in a Model of Interstitial Nephritis in Cats Lappin	CS
4:15	Tierce, Rebecca	Safety and Efficacy of Stereotactic Radiation Therapy in the Treatment of Macroscopic Canine Soft Tissue Sarcoma Boss	ERHS
4:30	Ammons, Dylan	PD-L1 Immunotherapy Influence on Tumor Macrophage Metabolism and Vascular Remodeling Dow	MIP
4:45	Andrie, Kendra	Endogenous Nrf2-Signaling Within Knee Joint Tissue of Aging OA-Prone Hartley Guinea Pigs Santangelo	MIP

SESSION 2: Basic Science

1-5 p.m. | TMI 325

Time	Presenter	Topic	Dept.
1:00	Asay, Bryce	Digital Image Analysis of Heterogeneous Tuberculosis Pulmonary Pathology in Non-Clinical Animal Models Using Deep Convolutional Neural Networks Lenaerts	MIP
1:15	Bisazza, Katie	Characterization of Ovine Bone Marrow From Various Aspiration Sites Easley	CS
1:30	Bissinger, David	Prions are Commonly Present in Muscle of CWD-Infected Animals Hoover	MIP
1:45	Buglewicz, Dylan	Carbon-Ion Radiotherapy: Radiosensitizers and Biological Effects Surrounding the Bragg Peak Kato	ERHS
2:00	Burton, Lindsey	Joint Lavage Immediately After Injury Promotes Early Defect Filling in a Murine Model of Post-Traumatic Osteoarthritis Santangelo	MIP
2:15	Butler, Molly	Cyclin-Dependent Kinase 8 Regulates Dengue Virus-Induced Metabolic Changes Rovnak	MIP
2:30	Chiu, Elliott	Endogenous Feline Leukemia Virus (FeLV) May Restrict Exogenous FeLV Infection VandeWoude	MIP
2:45	BREAK		
3:00	Clarkson, Taylor	Developing a Mosquitocidal Vaccine to Mitigate Vector Borne Diseases Foy	MIP
3:15	Daimon, Caitlin	POMC Neuron Inhibition Can Lessen the Severity of Activity-Based Anorexia in Mice Hentges	BMS
3:30	Das, Sunetra	Mutational Landscape of Canine Osteosarcoma Duval	CS
3:45	Ericksen, Kelsea	Laser Plume Generation and Potential Associated Risks Hackett	CS
4:00	Geldert, Christina	Collaboration Between Veterinarians and Honey Bee Researchers Through Exploration of the Honey Bee Gut Microbiome Seshadri	Other
4:15	Haugen, Jessica	Enhancing Natural Resistance Against Mtb by Targeting Host Metabolism Basaraba	MIP
4:30	Johnson, James	Biomechanical Property Degradation Accompanied with Chronic Rotator Cuff Degeneration: Evaluation of Two New Ovine Models McGilvray	BS
4:45	Kalandarova, Ulmaskhon	Clinical and Economic Impact of Restricted Use of Antibiotics in Livestock Industry in the USA: A Systematic Review Rao	CS

SESSION 3: Basic Science

1-5 p.m. | TMI 300

Time	Presenter	Topic	Dept.
1:00	Kastendieck, Emily	MEGMobile: Creating a Bioinformatics Tool to Analyze Mobile Genetic Elements Morley	CS
1:15	Kechejian, Sarah	Genetic Diversity of Feline Foamy Virus (FFV) in Florida Panther (Puma Concolor Coryi) VandeWoude	MIP
1:30	Kiran, Dilara	Investigating 'Lactate Shuttle' Dynamics During Mycobacterium Tuberculosis Infection Basaraba	MIP
1:45	McCready, Erin	Structural, Biochemical, and Biomechanical Characteristics of Articular Cartilage of the Ovine Humeral Head Nelson	CS
2:00	Miedema, Kaitlyn	Examination of Chronic Wasting Disease Strain Differences in Free-Ranging Cervids Zabel	MIP
2:15	Nealon, Nora Jean	Lactobacillus spp. Differentially Metabolize Rice Bran to Suppress Antimicrobial-Resistant Salmonella Growth Ryan	ERHS
2:30	Pace, Sebastian	Stress-Reactive Cortical-Brainstem Circuitry Myers	BMS
2:45	BREAK		
3:00	Risch, Makayla	Mechanical, Biochemical and Morphological Properties of Ovine Knee Cartilage Vary Across Articular Surfaces Nelson	CS
3:15	Schlein, Lisa	Parthenolide: A Promising Phytomedicine for Deadly Cancers in People and Dogs Thamm	CS
3:30	Smith, Brian	Female- and Interaction-Induced Ultrasonic Vocalizations in C57BL/6J Mice as a Proxy Indicator for Acute Inflammatory Pain Kendall	MIP
3:45	Stenkamp-Strahm, Chloe	Birds of a Feather Shed Together: Using Geospatial Methods to Measure the Persistence of Avian Influenza Virus in the Environment Magzamen	ERHS
4:00	Timkovich, Ariel	Manual Acupuncture Decreased Histologic Evidence of Osteoarthritis in a Rodent Model of Spontaneous Disease Santangelo	MIP
4:15	Vilander, Allison	Immunogenicity of a Recombinant Lactobacillus Acidophilus Oral HIV-1 Vaccine is Enhanced by the E. Coli Type I Pilus Protein FimH Dean	MIP
4:30	Wallace, Tyler	Dissecting the Role of Prefrontal Circuitry in Motivation, Social Behavior, and Stress Responding Myers	BMS
4:45	Zhang, Lei	Food Metabolomics with Rice Bran for Improving Nutrition Quality Ryan	ERHS

POSTER PRESENTATIONS

SESSION 1 | ODD-NUMBERED POSTERS | 1-2:45 p.m.

SESSION 2 | EVEN-NUMBERED POSTERS | 3-4:45 p.m.

NOTE: The presenters listed below may be found according to their assigned poster numbers.

No.	Presenter	Title Mentor	Dept.
1	Alqahtani, Shaherah	The Effect of Flavonoid Compounds on BRCA2 Deficient Cancer Cells via Synthetic Lethality by PARP Inhibition Legare	ERHS
2	Alyami, Nouf	Defining the Significance of Insulinlike Growth Factor 2 mRNA Binding Protein 1 (IGF2BP1) Expression in both Human and Canine Osteosarcoma Duval	CS
3	Anderson, Jennifer	Using Whole Blood Samples Collected via Filter Paper to Assess Total Mercury Levels in Fish Muscle O'Hara	Other
4	Bacon, Margaret	Repeatability of Distal Limb Accelerations of the Horse at a Walk in a Natural Setting Nout-Lomas	CS
5	Baxter, Bridget	Ascending and Descending Colon Tissue Metabolites Reveals Differences Between Normal, Overweight and Obese Adults with Relevance to Colon Cancer Risk Ryan	ERHS
6	Beebe, Madeline	Connecting Nutrition to Ionized Calcium Blood Levels in Sugar Gliders (<i>Petaurus Breviceps</i>) Sadar	CS
7	Bickett, Tom	Alternative Mechanisms for Vaccine Induced Protection to <i>Mycobacterium Tuberculosis</i> Izzo	MIP
8	Bleicher, Shira	Characterization of the Guinea Pig Placental Histostructure Mathiason	MIP
9	Bonney, Alexandra	Efficacy of Fountain Flow Cytometry for Rapid Detection of Sepsis in Fluids Evans	MIP
10	Bordman, Aryn	Evaluating Telomere Length as a Biomarker of Reproductive Stress and Environmental Radiation Exposure in Wild Boar Bailey	ERHS
11	Bork, Sydney	Administration of a Nrf2-Activator Improves Gait Parameters in a Guinea Pig Model of Spontaneous Osteoarthritis Santangelo	MIP
12	Brown, Shaina	Increased Expression of Galectin-3 and CD25 as Pre-Neoplastic Events in Canine T Zone Lymphoma Avery	MIP
13	Cabral, Troy	Investigation and Analysis of the CVMBS Grant Submission Survey Strecker	Other
14	Chornarm, Nida	Prevalence Study of Feline Hemoplasma Species Associated with Anemic Status, Retroviral Infections and Vector-Borne Pathogens Co-Infection in Domestic Cats Lappin	CS
15	Chow, Lyndah	Direct and Indirect Antimicrobial Activity Of Human Mesenchymal Stem Cells Dow	CS

POSTER PRESENTATIONS

No.	Presenter	Title Mentor	Dept.
16	Contreras, Elena	Evaluation of Cortisol in Feline Fur and Claws: A Non-Invasive Measurement of Chronic Stress Lappin	CS
17	Cronise, Kathryn	Molecular and Immunohistochemical Characterization of the Immune Landscape of Spontaneous, Translationally-Relevant Canine Cancers Duval	CS
18	Dannemiller, Nicholas	Venous Blood Gas and Acid-Base Evaluation of Wild, Hooked, and Cold-Stunned Loggerhead Sea Turtles (<i>Caretta Caretta</i>) Barco	Other
19	Davari, Baharak	A Sensitive LC-MS/MS Assay for Quantification of Methadone and its Metabolites in Dried Blood Spots Sempio	Other
20	Catandi, Giovana	Equine Maternal Aging is Associated with Reduced Oxygen Consumption by Oocytes and Early-Stage Embryos Carnevale	BMS
21	Ellis, Megan	Corticosterone and Hematological Monitoring to Assess the Effect of Transport Modality on Stress Levels in Mice Kendall	MIP
22	Fox, Amy	Unsupervised Flow Cytometry Clustering Analysis of Memory Immune Populations in Response to BCG Vaccination and Persistence in Different Mouse Models Henao-Tamayo	MIP
23	Georges, Hanah	Transplacental BVDV Infection of Bovine Fetuses Results in Impaired Immune Development Hansen	BMS
24	Gold, Alexandra	Characterizing the Immune Landscape in Canine Oral Squamous Cell Carcinoma Boss	ERHS
25	Gray, Lyndsey	Mapping Potential Genetic Selection in Mosquitoes from Ivermectin Drug Administrations Foy	MIP
26	Harris, Macallister	A Guinea Pig Model of Vitamin A Deficiency and Tuberculosis Comorbidity Podell	MIP
27	Hawks, Meighan	Effect of the Commercially Available Probiotic <i>Enterococcus Faecium</i> SF-68 on Canine Giardiasis Lappin	CS
28	Hay, Arielle	Reverting Prion Disease in Olfactory Neuronal Progenitor Cells as a Cell Replacement Therapy Moreno	MIP
29	Heise, Natascha	Virtual Reality – An Intuitive Tool for Structural Visualization Clapp	BMS
30	Helmer, Elizabeth	Effects of Acetylcholinesterase Inhibition on Quality of Recovery and Post-Operative Gastrointestinal Motility Following General Anesthesia in Horses Hassel	CS
31	Hopkins, Leone	Expression and Function of the Co-Stimulatory Checkpoint Molecule OX40 by T Cells in Dogs Dow	CS
32	Ibrahim, Hend	Non-Targeted Metabolomic Signature in Patients with Long Bone Injuries Ryan	ERHS

No.	Presenter	Title Mentor	Dept.
33	Johnson, Valerie	Characterization and Administration of Allogeneic Blood Derived Mesenchymal Stem Cells in an African Elephant (<i>Loxodonta Africana</i>) with Severe Osteoarthritis Dow	CS
34	Kamal, Fahima	Benzalkonium Chloride Induces Ocular Inflammation: Understanding the Response Through Computational Modeling Hanneman	ERHS
35	Karn, Marta	Cell-Free DNA as a Diagnostic and Prognostic Marker in the Cerebrospinal Fluid of Dogs McGrath	CS
36	Kohnen, Allison	Can Veterinary Education SAVE the Planet Duncan	MIP
37	Kopanke, Jennifer	Characterizing Reassortment Between Endemic Bluetongue Virus Strains Using an in vitro System Mayo	MIP
38	Krakoff, Emma	Variation in Lentiviral Evolution Rates Across Three Species: A Systematic Review VandeWoude	MIP
39	Krause, Laurel	Evaluation for Novel Causes of Chronic Kidney Disease in Cats Lappin	CS
40	Krishnan, Sneha	The Effect of Environmental Enrichment on Captive Snake Behavior Sadar	CS
41	Kuzmik, Alana	Canine Oropharyngeal Microbiome Response to Non-Specific Mucosal Immune Activation Dow	CS
42	Lakin, Steven	Statistical Supercomputing Improves Surveillance of Bacterial Pathogens and Antimicrobial Resistance Abdo	MIP
43	Lian, Elena	Arachidonic Acid: Friend or Foe Perera	MIP
44	Liebig, Bethany	A New Mesenchymal Stem Cell Culture Approach Mimics Patterns of in vivo Fracture Healing Goodrich	CS
45	Lo, Stephanie	Transcorneal Ultrasonography and Retinal Spectral Domain Optical Coherence Tomography in the Minipig: A Pre-Clinical Model for Retinal Transplants in Humans with Retinitis Pigmentosa Wotman	CS
46	Mack, Maura	Coat Color, Sex, and Breed are Associated with Incidence of Ocular Squamous Cell Carcinoma in the Horse Wotman	CS
47	McNabb, Ian	Investigation of the Bioavailability of Radiocesium in the Fukushima Exclusion Zone Using a Sequential Extraction Technique Sudowe	ERHS
48	Meyer, McKayla	Evaluation of Embryo Formation via Comparisons of Oocyte Harvesting Methods Hatzel	CS
49	Miller, Morgan	Monitoring Populations of Vesicular Stomatitis Virus Vectors in Relation to Weather Conditions and Patterns Mayo	CS
50	Mishkin, Noah	Potentiation of Macrophage Response to <i>M. Tuberculosis</i> via Vitamin A-Dependent Nuclear Receptor Activation Podell	MIP

POSTER PRESENTATIONS

No.	Presenter	Title Mentor	Dept.
51	Montgomery, Caroline	Fatty Acid Synthesis: What's the Big Deal Anyway Perera	MIP
52	Mundell, Cary	Engineered Viral RNA Decay Intermediates to Assess XRN1-Mediated Decay Wilusz	MIP
53	Nguyen, Nhung	Effect of Matrix Constituents on the Separation of Plutonium and Americium from Bone Samples Sudowe	ERHS
54	Palmer, Eric	Identification of Lung Fibroblast-Mediated Changes in Breast Cancer Cell Chemosensitivity via Assessment of Drug Response in a 3D, Tumor-Specific Bioluminescence Co-Culture Model Regan	MIP
55	Pearson, Morgan	Correlates of Mucosal Immune Control of Feline Enteric Coronavirus Replication Dean	MIP
56	Personett, Alexa	Comparison of the Gingival Vein and Cranial Vena Cava as Blood Collection Techniques in Guinea Pigs Sadar	CS
57	Pierce, Jack	Radiographic Quantification of Tibial Long Axis Shift from Stifle Surgery Using the Anatomical-Mechanical Axis Angle Duerr	CS
58	Pires, Elena	Investigating the Role of RAD51AP1 in Homologous Recombination DNA Repair Wiese	ERHS
59	Pollard, Anna	Peroxisome Proliferator-Activated Receptors (PPAR) Pathway is Utilized to Control Lipid Metabolism During Dengue Virus Infection Perera	MIP
60	Ragan, Izabela	Cold Blood: Reptiles and Amphibians as Reservoir and Overwintering Hosts for Arboviruses Bowen	BMS
61	Redd, Katherine	The Effect of Cannabidiol on Seizure Activity in Uncontrolled Canine Epilepsy McGrath	CS
62	Reed, Olivia	Modeling the Effect of Rabies Virus Glycoprotein on Neuronal Type Cells Murphy Hueffer	Other
63	Regas, April	Testing the Detection of DNA Barcoded Microcrystals as a Novel Mosquito Marking Method Kading	MIP
64	Rozo, Vanessa	Testing a Non-Antibiotic Based Immunotherapy in Preventing Respiratory Disease in Dairy and Beef Cattle Wheat	MIP
65	Eckley, Miles	Mutant Neuraminidase Gene of HL18NL11 Bat Influenza A Virus Reverts to Wild-Type in Jamaican Fruit Bats Schountz	MIP
66	Schwerdtfeger, Luke	The Gut as an Instrument: Microfluidic Device for Intestine Culture Tobet	BMS
67	Selemenakis, Platon	Synergism Between RAD51AP1 and RAD54 During Late Stages of Homologous Recombination DNA Repair Wiese	ERHS

No.	Presenter	Title Mentor	Dept.
68	Smith, Hillary	Rice Bran Supplementation Effects on Protein, Lipid and Vitamin Metabolism in Malian Infants Identified Using Dried Blood Spots Ryan	ERHS
69	Soontararak, Sirikul	Abnormal Humoral Immune Response Targeting Endogenous Gut Bacteria in Dogs with Inflammatory Bowel Disease Dow	CS
70	Sztukowski, Kiera	HIV-Induced Neuronal Hyperactivity and Neuropathology in the FIV Infection Model Kim	BMS
71	Terry, Melissa	Identifying Patients at Higher Risk for Zoonotic Tuberculosis in Rural Uganda Olea-Popelka	CS
72	Thulson, Emily	Analysis of Cardiopulmonary Values in Chemically Immobilized White Rhinoceros in Kruger National Park Olea-Popelka	CS
73	Vick, Zaria	Computational Simulation Analysis of Metronidazole Pharmacokinetics and Potential Neurotoxicity Correlations Hanneman	ERHS
74	Vongtongsalee, Kridakorn	Development of a Mycobacterium Abscessus Reinfection Model Ordway	MIP
75	Williams, Maggie	Anti-Platelet Antibody Development and Thrombocytopenia in a Dog Passively Exposed to Canine Influenza Lappin	CS
76	Wilson, Heather	Total Antioxidant Capacity and Inflammation in Diabetic Cats Webb	CS
77	Zietz, Bryce	Effect of Cytokines on Myxoma Viral Replication in Canine Cancer Cells MacNeill	MIP

VETERINARY SUMMER SCHOLARS PROGRAM

DVM students dive into research with projects and field trips

APPLY BY FEB. 8, 2019!



Nearly 30 veterinary summer scholars traveled to Texas A&M with program director, Sue VandeWoude, this past August for the annual National Veterinary Scholar Symposium.

VETERINARY SUMMER SCHOLARS PROGRAM provides veterinary students with hands-on exposure to veterinary medical research to introduce them to potential research careers. The application deadline is Feb. 8 for the summer 2019 program!

The College of Veterinary Medicine and Biomedical Sciences received funding from the National Institutes of Health in 2013 to expand an already successful program. Partnership with the Young Investigator Awards Program has further boosted participation

Last year, 40 veterinary students from CSU and abroad participated in the 2018 CSU Veterinary Summer Scholar Program. Students spent the summer working in research labs, attending weekly research seminars, and going on field trips to other CSU, federal, and state research facilities. Many of the projects conducted by CSU students last summer are being presented today at the CVMBS Research Day.

The National Institutes of Health and Boehringer Ingelheim, a multinational animal health company, support the program, along with several other organizations, the college, and faculty mentors who help provide stipends for program participants.

We encourage students to apply for experiential learning in veterinary medical research!

To view the research of students funded in 2018, or to apply for the summer 2019 program, please visit the website at:

csu-cvmb.colostate.edu/dvm-program/Pages/Veterinary-Scholars-Program.aspx

BY THE NUMBERS

- 40 scholars in the 2018 program, from CSU and other veterinary programs across the country and around the world. The scholars are selected through a competitive application process and receive financial support from program sponsors.
- 335 summer scholars since 2001
- 500+ total students mentored by CVMBS faculty in past 10 years
- 20 percent of student participants in past five years have been under-represented minorities
- Over 70 CVMBS faculty mentors

SPONSORS OF THE 2018 PROGRAM:

- National Institutes of Health
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YOUNG INVESTIGATOR GRANT PROGRAM: FUNDING RESEARCH AND BOOSTING VET STUDENTS

Center for Companion Animal Studies, Department of Clinical Sciences



Young Investigator grants help students and early-career researchers like Dr. Stacie Summers pursue clinical projects, and improve the chances of securing complementary internships, graduate programs, and residencies.

THE YOUNG INVESTIGATOR GRANT PROGRAM provides funding to support research involving Colorado State veterinary students, and many of the recently funded projects are presented during Research Day.

In 2018, corporate and non-corporate sponsors donated more than \$50,000 to the program. This funding was distributed to 24 research projects involving students in our DVM Program.

The Young Investigator Grant Program began in 2006 with a donation of \$20,000 from HESKA Corp. In its 10 years, the program has grown to support five times the number of research projects that it supported in its first year – a credit to sponsors who understand the importance of bolstering young scientists, and a credit to our DVM students for the impressive quality of their research efforts.

The College of Veterinary Medicine and Biomedical Sciences thanks all program sponsors. These supporters are helping to advance veterinary science while also involving more DVM students in important clinical research. To view the grants funded in 2018 or to make a donation, please visit the Center for Companion Animal Studies website at companionanimals.colostate.edu.

YOUNG INVESTIGATOR AWARDS

- 20–25 research grants funded per year
- Student, intern, resident and faculty
- Over 200 grants funded
- Over 50 faculty have participated
- Over 200 DVM students on publications
- Several research awards for students

2018 YOUNG INVESTIGATOR GRANT PROGRAM SPONSORS

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