

News from the NCVP

SPECIAL POINTS OF INTEREST:

- Success of 2017
 Resident Alums
- Little named
 Distinguished
 Veterinary
 Parasitologist
- NCVP at AAVP in Indianapolis
- Bayer Resident
 Named

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Congratulations to Two More NCVP Resident Alums!

Brian Herrin, DVM, PhD, DACVM-Parasitology began an Assistant Professorship in Veterinary Parasitology at Kansas State University's College of Veterinary Medicine in August 2017. The position allows him to participate in all aspects of veterinary parasitology diagnostic service, teaching, and research while also getting to collaborate with Dr. Mike Dryden (NCVP board member and parasitologist extraordinaire) and all the other outstanding faculty at KSU.



FALL 2017

Brian earned his DVM and PhD from the Oklahoma State University Center for Veterinary Health Sciences (OSU-CVHS) in 2014 and 2016, respectively. His PhD, conducted under the mentorship of Susan Little, DVM, PhD, DACVM-Parasitology, documented the geographic expansion of *Borrelia burgdorferi* in North America. During his training, Brian served as the BI resident

in veterinary parasitology, and passed the parasitology boards in 2016. **Congratulations Brian (and KSU)!**



The inaugural Merial Resident in Veterinary Parasitology, **Dr. Jessica Rodriguez**, graduated from Texas A&M University with a PhD in Veterinary Pathobiology in August 2017 and was immediately hired by Zoetis as a Field Specialist in Parasitology in the US Companion Animal Veterinary Specialty Operations Division. As expected, Jessica is thriving in this position, relishing the opportunity to work with veterinarians in practice as they combat parasitology challenges in their patients. Pictured left is Jessica with her PhD mentor Karen Snowden, DVM, PhD,

DACVM-Parasitology at graduation.

Jessica earned her DVM from TAMU in 2009. Her PhD research under the guidance of Dr. Snowden focused on novel approaches to diagnose and manage infections with the trematode *Heterobilharzia americana* in dogs. Dr. Rodriguez also passed the Parasitology board examination administered by the ACVM in November 2017 (see page 2).

Dr. Brian Herrin, AAVP/Merck Graduate Student Award

Dr. Brian Herrin, featured on page 1 for his recent appointment as an Assistant Professor at Kansas State University, received the AAVP/Merck Animal Health Outstanding Graduate Student Research Award at the annual AAVP meeting for his dissertational research.



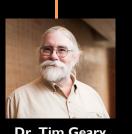
Dr. Herrin presents his dissertational research as the **AAVP/Merck Outstanding Graduate Student for 2017.**

As the BI Resident Scholar in Veterinary Parasitology, Dr. Herrin documented the expanding geographic distribution of Borrelia burgdorferi in North America and identified risk factors important for predicting human and canine infection.

being addition to outstanding an researcher, Dr. Herrin is a stellar teacher of veterinary students, technicians, practicing veterinarians. His continuing education presentations at regional national meetings are some of the best attended and he is a widely sought after lecturer.

During his address, Dr. Herrin credited the supportive culture in veterinary parasitology created by the AAVP and the NCVP as instrumental in allowing him to pursue his research interests in the field. We are so fortunate to have Dr. Herrin continuing the legacy of excellence in parasitology research, teaching, and diagnostics.

Congratulations Brian!



Dr. Tim Geary



Dr. Lindsay Starkey



Dr. Lisa Young

The NCVP Welcomes 3 New Members to the Board!

The NCVP is thrilled to announce three additional Board members who will be helping to guide the Center in all of its efforts to support veterinary parasitology training, research, and education. Drs. Tim Geary, Lindsay Starkey, and Lisa Young joined the Board in the Fall of 2017.

Tim Geary, PhD, serves as Canada Research Chair in Biotechnology (Institute Director) at McGill University. Lindsay Starkey, DVM, PhD, DACVM-Parasitology, and the first NCVP Bayer resident, is an Assistant Professor of Parasitology at Auburn University's College of Veterinary Medicine, an appointment she accepted in 2016. Lisa Young, DVM, is a Principal Research Scientist for Elanco Animal Health in Companion Animal Development, located in Greenfield, Indiana.

Welcome — we are so glad to have you on Board!

Dr. Susan Little, 2017 AAVP-BI Distinguished Parasitologist

Susan Little, DVM, PhD, DACVM-Parasitology was selected as the 2017 AAVP-Boehringer Ingelheim Distinguished Veterinary Parasitologist. This award honors contributions to veterinary parasitology that are widely recognized internationally as significant and important to the understanding and control of parasitic diseases of animals and is the highest award offered by the AAVP. The award was presented at this year's AAVP meeting in Indianapolis.

Dr. Little grew up in rural Kentucky and realized her love for animals and all things veterinary medicine at an early age. She earned her BS from Cornell University (1989) and her DVM at Virginia Tech (1993). While in veterinary school, Dr. Little had the privilege to learn parasitology from Dr. Anne Zajac (DVP 2016), an experience that ignited her passion for the discipline. She went on to complete a PhD in veterinary parasitology at

the University of Georgia (1996) working with the Southeastern Cooperative Wildlife Disease Study and then joined the faculty at UGA as an Assistant Professor in parasitology, filling the position opened by the retirement of Dr. Ed Roberson (DVP 2000). She stayed at UGA for a decade, working with wonderful colleagues like Dr. John McCall (DVP 2006) and earning promotion to Associate Professor and tenure.

In 2005, Dr. Little joined the faculty at Oklahoma State University's Center for Veterinary Health Sciences as the Krull-Ewing Professor in veterinary parasitology. The robust support for veterinary parasitology at Oklahoma



Dr. Little delivers Keynote address as the 2017 AAVP / BI Distinguished Veterinary Parasitologist. Featured in the presentation here are other renowned parasitologists of Oklahoma State University, Dr. Wendell Krull (left) and Dr. Sidney Ewing (right).

State and the presence of outstanding colleagues like Drs. Sidney Ewing (DVP 2002), Eileen Johnson, Kathy Kocan, Mason Reichard, Kelly Allen, and Yoko Nagamori allowed the NCVP to develop and flourish. During her time at OSU Dr. Little was named Regents Professor, became a charter diplomate in parasitology through the ACVM, and served as President of both AAVP and CAPC. She has also served as major professor to numerous parasitology graduate students, including 6 recipients of the AAVP Outstanding Graduate Student Research Award and 4 recipients of the AAVP-CAPC Award in Zoonotic Disease. Susan's former PhD students are now on faculty at four different veterinary colleges.

As a Distinguished Veterinary Parasitologist, Dr. Little is in great company—in addition to Dr. Zajac, other NCVP board members who have also received this award include Drs. Byron Blagburn, Dwight Bowman, Mike Dryden, and Tim Geary.

Very well-deserved, Dr. Little!



Dr. Ruth Scimeca Named Bayer Resident

We are delighted to announce that **Dr. Ruth Scimeca**, DVM, MS, PhD, was named the **Bayer Resident in Veterinary Parasitology** at the October 2017 Board Meeting of the NCVP.

Originally from Guatemala, Dr. Scimeca completed her veterinary degree in 2004 and then earned both the MS and PhD degree in Ciudad Real, Spain. After beginning her post-doctoral work with Dr. Kathy Kocan at Oklahoma State University, Ruth discovered diagnostic parasitology and a new passion was borne.

Dr. Scimeca will complete her 2-year clinical residency training under the direction of Dr. Mason Reichard, Co-Director of the NCVP, as she prepares for the board examination in veterinary parasitology. Her primary research interest is transmission of *Cytauxzoon felis* by *Amblyomma americanum* and she also plans to

continue her ongoing work on other very productive research efforts.

Congratulations Ruth—and welcome!



Dr. Ruth Scimeca, Bayer Resident in Veterinary Parasitology



Dr. Kelly Allen Promoted to Assistant Professor

Dr. Kelly Allen, our much lauded NCVP project leader and an amazing veterinary parasitologist, was recently promoted from Instructor to **Assistant Professor of Parasitology** at Oklahoma State University.

While we are sad to lose her project leadership skills we are delighted that this new tenure-track position will allow her to pursue her research interests in greater depth.

Rest assured, Dr. Allen will continue on as a key member of the NCVP board and the parasitology team at Oklahoma State University.

We are so happy and excited for you, Kelly!



Dr. Allen brings the fun of parasites to the general public at our annual Camp Parasitology.



Events



NCVP at AAVP 2017 in Indy

Pre-AAVP Luncheon with Residents, Mentors, and Board Members

Weber Grill Restaurant in Indianapolis was the site of this year's **NCVP pre-AAVP luncheon**. Residents, resident mentors, board members, and industry sponsor representatives enjoyed the chance to mingle and connect with colleagues and friends before the AAVP and AVMA meetings were fully underway.

Thanks to the Oklahoma State University Foundation for helping the NCVP pre-celebrate the **62nd annual AAVP meeting!**



NCVP Resident Research Presentations at AAVP 2017

Brian Herrin, DVM, PhD, DACVM-Parasit. (Oklahoma State University, BI Resident Scholar in Veterinary Parasitology)

- · Geographic distribution of Lyme borreliosis in North America
- Transmission of an equine *Ehrlichia* spp. following exposure to *Amblyomma americanum*



Jeba Jesudoss Chelladurai (Iowa State University, Virbac Resident in Veterinary Parasitology)

- Characterization of a ATP binding cassette transporter from *Toxocara canis*
- Novel mRNA localization technique to visualize drug target expression in *Parascaris equorum*



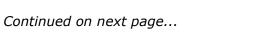
Dr. Brian Herrin

Dr. Jeba Jesudoss Chelladurai

Kelsey Paras, MS, DVM

(University of Georgia, Elanco Resident in Veterinary Parasitology)

- Prevalence of gastrointestinal nematode resistance to avermectin anthelmintics on beef cattle operations in Georgia
- Impact of a refugia-based strategy in stocker cattle on species diversity, pasture contamination, and development of resistance
- Evaluation of a refugia-based strategy in pastured stocker cattle treated with LongRange®





Dr. Kelsey Paras



Dr. Cassan Pulaski



Dr. Jessica Rodriguez



Dr. Ashley Steuer



Dr. Jennifer Thomas



NCVP Resident Research Presentations at AAVP 2017 Continued...

Cassan Pulaski, DVM (Louisiana State University, Merck Resident in Veterinary Parasitology) - Heartworm preventive drug lack of effectiveness claims submitted to the FDA (2004-2015): an analysis of reports and further applications

Jessica Rodriguez, DVM, PhD (Texas A&M University, Merial Resident in Veterinary Parasitology) - Utilizing next generation sequencing to discover highly repetitive DNA sequence targets for real-time PCR diagnosis of *Heterobilharzia americana*

Ashley Steuer, DVM (University of Kentucky, Zoetis Resident in Veterinary Parasitology) - Histopathologic evaluation of local inflammatory responses surrounding encysted larval cyathostomins in 36 moxidectin and fenbendazole treated ponies

Jennifer Thomas, DVM (Texas A&M University, Dermatology Resident, formerly affiliate NCVP resident at Oklahoma State University) - Histopathologic changes at the tick-host interface of *Amblyomma americanum* on tick-naïve domestic cats

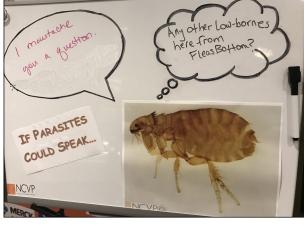
Congratulations to all of you on your outstanding contributions to veterinary parasitology!

NCVP Educational Table at AAVP 2017

Now an annual fixture, the **NCVP promotional table at AAVP 2017** was again a popular hotspot. Displaying brochures, newsletters, and invitations to apply for NCVP grant and residency support funding, the table was well attended and enjoyed.

New this year—who speaks for the parasites? The parasitologists of course! Those stopping by were invited to complete the "If Parasites Could Speak" bubbles. Check out a few of the contributions to the right and on the following page!

With NCVP branded jump drives (loaded with new videos) and other cool items,



AAVP members were able to enjoy some fun with the parasites while receiving updates on the NCVP efforts. Thanks to everyone who visited with us. **See you next year!**

NCVP Residents Host NCVP-AAVP Clicker Session



Our sincere gratitude to the AAVP for again allowing us to organize the clicker case session and box lunches. This interactive **clinical case extravaganza** has emerged as a much anticipated and appreciated final session at the annual AAVP meeting, and the event in Indianapolis did not disappoint!

Our fearless emcee leader, **Dr. Dwight Bowman**, Cornell University, gently shepherded us through the presentations



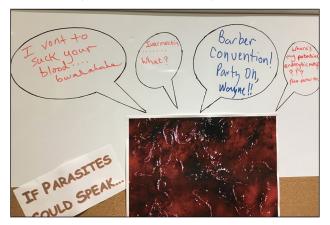
which included clinical cases on *Skrjabinema*, *Cotylophoron*, *Spirometra*, *Strongyloides*, and *Mesocestoides* as well as a poultry specimen with multiple parasites.

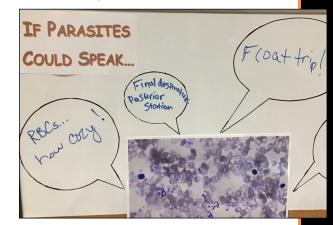
Always a font of parasitology knowledge both critically important and trivial (but oh so fun), Dr. Bowman entertained and clarified as the residents—including Drs. Steuer, Paras, Chelladurai, Rodriguez, Pulaski, and Scimeca—led us through the cases. Thanks again to all who presented, clicked, and attended—see you in 2018!

NCVP-AAVP 2017 Clinical Clicker Case Participants. Thank you!



We speak for the parasites for the parasites have no tongues...*





*with apologies to The Lorax and Theodor Seuss Geisel

PAGE







NCVP Funded Research Presented at AAVP 2017

Several presentations at AAVP stemmed from funding provided by NCVP to AAVP members, including:

- Dr. Scott Bowdridge's team from West Virginia University presented their recent findings regarding immune responses to *Haemonchus contortus*, work that was funded in part by an NCVP grant entitled "Identification of cuticular antigenic components found in third stage *H. contortus* larvae and immune response they elicit." (Abstracts 10-13)
- Sarah Sapp from the University of Georgia received the 2017 AAVP-CAPC
 Graduate student award for her work on Baylisascaris procyonis. Her major professor, Dr. Michael Yabsley, received NCVP funding for
 "Experimental investigation into the significance of domestic dogs as hosts for the raccoon roundworm." (Abstract 67)
- Dr. Brian Herrin, Oklahoma State University, presented his results from an NCVP grant entitled "Characterization of a novel tick transmitted *Ehrlichia* sp. infection in horses." (Abstract 47)

NCVP Awards over \$100,000 USD in Funding

It is with real pleasure we share the news that our small grants program was able to fund eight (8!) different research projects in the fall of 2017, with support totaling \$111,012.

Members of the American Association of Veterinary Parasitologists from across the US, Canada, and the Caribbean received funding to study systems as diverse as *Dirofilaria immitis*, *Giardia duodenalis*, *Trypanosoma cruzi*, and parasites of cats being imported to the US.

The NCVP grants program was established to provide a mechanism for veterinary parasitology researchers to obtain research funds for parasites that are less eligible for funding through traditional channels. Some level of student involvement in the research is also expected.

We are pleased to announce that NCVP in cooperation with the American Heartworm Society will be funding another round of grants in Fall of 2018. Each fall we receive an increasing number of quality grant proposals requesting funding far in excess of what we have in our budget. Even though we are forced to make difficult decisions, we are pleased that NCVP continues to contribute to the advancement of knowledge of veterinary parasites.

Please keep those applications coming!







NCVP Grant
Applications
are accepted
September 1st
of each year.
Be sure to look
for the Request
for Proposals on
the AAVP

ListServ

Fall 2017 Annual NCVP Meeting in Stillwater, OK

The Fall 2017 in-person meeting of the NCVP Board and Residents took place in Stillwater, OK on October 10-12, 2017. A welcome dinner was held on the evening of the 10^{th} . On the evening of the 11^{th} over dinner at Backstage Stillwater, NCVP Residents gave presentations over their respective experiences and research to NCVP Board members and to veterinary students interested in parasitology.



Above: Group photo of NCVP Residents, Board Members, and OSU veterinary students after dinner during the Fall 2017 NCVP annual meeting. This time, the NCVP Residents were the featured presenters. Great job, Residents!



About the National Center for Veterinary Parasitology

Veterinary parasites impact human health and society in many ways. With the generous support of our sponsors, the National Center for Veterinary Parasitology works to promote greater understanding and control of parasitic diseases in animals through innovative partnerships between academia and industry. Housed in the Center for Veterinary Health Sciences at Oklahoma State University, the center strives to create future generations of veterinary parasitologists, conduct targeted research, and provide diagnostic and consulting services worldwide. To learn more, please visit www.ncvetp.org.

















Center for Veterinary Health Sciences Healthy Animals - Healthy People



NCVP Residents and Board Members. October 2017.



Selected Publications from NCVP Members

Our residents, faculty, and board members are a busy group. Below is a very abridged list of just a few of the recent publications from NCVP members (names of board members and residents are bolded). To request the full list or individual reprints, please send an email to ncvp@okstate.edu. Most importantly if you have suggestions for future continuing education articles, review papers, or topics you think would be of interest to veterinarians and others in parasitology, please send us your suggestions.

2017 TO DATE ...

Adolph C, Barnett S, Beall M, Drake J, Elsemore D, Thomas J, Little S. Nov 2017. Diagnostic strategies to reveal covert infections with intestinal helminths in dogs. Vet Parasitol. 247:108-112.

Bowman DD, Drake J. Nov 2017. Examination of the "susceptibility gap" in the treatment of canine heartworm infection, Parasit Vectors, 10(Suppl2):513.

Bowman DD, Ohmes CM, Hostetler JA, Keil DJ, Settje TL, Charles SD. Nov 2017. Efficacy of 10% imidacloprid + 2.5% moxidectin topical solution (Advantage Multi® for Dogs) for the prevention of heartworm disease and infection all month long. Parasit Vectors. 10(Suppl2):478.

Bowman DD, McTier RL, Adams EL, Mahabir SP, Login JA, Bidgood T, Woods DJ. Nov 2017. Evaluation of the efficacy of ProHeart® 6 (moxidectin) against a resistant isolate of Dirofilaria immitis (JYD-34) in dogs. Parasit Vectors. 10(1):437.

Dillon AR, Blagburn BL, Tillson M, Brawner W, Welles B, Johnson C, Cattley R, Rynders P, Barney S. Nov 2017. The progression of heartworm associated respiratory disease (HARD) in SPF cats 18 months after Dirofilaria immitis infection. Parasit Vectors. 10(Suppl 2):533.

Dillon AR, Blagburn BL, Tillson M, Brawner W, Welles B, Johnson C, Cattley R, Rynders P, Barney S. Nov 2017. Heartworm-associated respiratory disease (HARD) induced by immature adult Dirofilaria immitis in cats, Parasit Vectors, 10(Suppl 2):514.

Evans CC, Moorhead AR, Storey BE, Blagburn BL, Wolstenholme AJ, Kaplan RM. Nov 2017. Evaluation of the larval migration inhibition assay for detecting macrocyclic lactone resistance in Dirofilaria immitis. Vet Parasitol. 246:76-81.

Gruntmeir JM, Adolph CB, Thomas JE, Reichard MV, Blagburn BL, Little SE. Oct 2017, Increased detection of Dirofilaria immitis antigen in cats after heat pretreatment of samples. J Feline Med Surg. 19(10):1013-1016.

Little SE. Nov 2017. Lotilaner—a novel systemic tick and flea control product for dogs. Parasit Vectors. 10(1):539.

Saleh MN, Thomas JE, Heptinstall JR, Herbein JF, Wolf RF, Reichard MV, Zajac AM. Nov 2017. Immunologic detection of Giardia duodenalis in a specific pathogenfree captive olive baboon (Papio cynocephalus anubis) colony. J Vet Diagn Invest. 29(6):916-919.

Starkey LA, Bowles JV, Payton ME, Blagburn BL. Nov 2017. Comparative evaluation of commercially available point-of-care heartworm antigen tests using wellcharacterized canine plasma samples. Parasit Vectors. 10(Suppl 2); 475.

Winter RL, Ray Dillon A, Cattley RC, Blagburn BL, Michael Tillson D, Johnson CM, Brawner WR, Welles EG, Barney S. Nov 2017. Effect of heartworm disease and heartworm-associated respiratory disease (HARD) on the right ventricle of cats. Parasit Vectors. 10(Suppl 2):492.

Maté ML, Geary T, Mackenzie C, Lanusse C, Virkel G. Oct 2017. Species differences in hepatic biotransformation of the anthelmintic drug flubendazole. J Vet Pharmacol. 40(5):493-499.

Skinner D, Mitcham JR, Starkey LA, Noden BH, Fairbanks WS, Little SE. Oct 2017. Prevalence of Babesia spp., Ehrlichia spp. and tick infestations in Oklahoma black bears (Ursus americanus), 53(4):781-787.

Valanparambil RM, Tam M, Gros PP, Auger JP, Segura M, Gros P, Jardim A, Geary TG, Ozato K, Stevenson MM. Oct 2017. IRF-8 regulates expansion of myeloidderived suppressor cells and Foxp3+ regulatory T cells and modulated Th2 immune responses to gastrointestinal nematode infection. PLoS Pathog. 13(10):e1006647.

Elsemore DA, Geng J, Cote J, Hanna R, Lucio-Forster A, **Bowman DD**. Sep 2017. Enzyme-linked immunosorbent assays for coproantigen detection of Ancylostoma caninum and Toxocara canis in dogs and Toxocara cati in cats. J Vet Diagn Invest. 29(5):645-653.

Harroff LA, Liotta JL, Bowman DD, Angenent LT, Sep 2017, Inactivation of Ascaris eggs in human fecal material through in situ production of carboxylic acids. Environ Sci Technol. 51(17):9729-9738.

Pollard DA, Reichard MV, Cohn LA, James AM, Holman PJ. Sep 2017. Genetic

Dryden MW, Canfield MS, Niefeldt E, Kinnon A, Kalosy K, Smith A, Foley KM, Smith V, Bress TS, Smith N, Endrizzi M, Login J. Aug 2017. Evaluation of sarolaner and spinosad oral treatments to eliminate fleas, reduce dermatologic lesions and minimize pruritis in naturally infested dogs in west Central Florida, USA. Parasit Vectors. 10 (1):389

Tritten L, Tam M, Vargas M, Jardim A, Stevenson MM, Keiser J, Geary TG. Jul 2017. Excretory/secretory products from the gastrointestinal nematode *Trichuris muris*. *Exp* Parasitol. 178:30-36.

George MM, Paras KL, Howell SB, Kaplan RM. Jun 2017. Utilization of composite fecal samples for detection of anthelmintic resistance in gastrointestinal nematodes of cattle, Vet Parasitol, 240:24-29.

Herrin BH, Peregrine AS, Goring J, Beall MJ, Little SE. May 2017. Canine infection with Borrelia burgdorferi, Dirofilaria immitis, Anaplasma spp. and Ehrlichia spp. in Canada, 2013-2014, Parasit Vectors, 10(1):244,

Milley C, Dryden M, Rosenkrantz W, Griffin J, Reeder C. Jun 2017. Comparison of patristic mite retrieval methods in a population of community cats. J Feline Med Surg. 19(6):657-664.

Mitcham JR, Barrett AW, Gruntmeir JM, Holland T. Martin JE, Johnson EM, Little SE, Noden BH. Jun 2017. Active surveillance to undate county scale distribution of four tick species of medical and veterinary importance in Oklahoma. J Vector Ecol. 42 (1):60-73.

Reichard MV, Logan K, Criffield M, Thomas JE, Paritte JM, Messerly DM, Interisano M, Marucci G, Pozio E. May 2017. The occurrence of Trichinella species in the cougar Puma concolor cougar from the state of Colorado and other regions of North and South America. J Helminthol. 91(3):320-325.

Savadelis MD, Ohmes CM, **Hostetler JA**, Settje TL, Zolynas R, Dzimianski MT, Moorhead AR, May 2017, Assessment of parasitological findings in heartworm-infected beagles treated with Advantage Multi® for dogs (10% imadocloprid + 2.5% moxidectin) and doxycycline. Parasit Vectors. 10(1):245.

Carithers DS. Apr 2017. Examining the role of macrolides and host immunity in combatting filarial parasites. Parasit Vectors. 10(1):182.

Johnson EM, Nagamori Y, Duncan-Decocq RA, Whitley PN, Ramachandran A, Reichard MV. Apr 2017. Prevalence of Alaria infection in companion animals in north central Oklahoma from 2006 through 2015 and detection in wildlife. J Am Vet Med Assoc. 250(8):881-886.

Von Dohlen AR, Houk-Miles AE, Zajac AM, Lindsay DS. Apr 2017. Flotation of Toxocara canis eggs in commercial bleach and effects of bleach treatment times on larval development in these eggs. J Parasitol. 103(2):183-186.

Thomas JE, Ohmes CM, Payton ME, Hostetler JA, Reichard MV. Feb 2017. Minimum transmission time of Cytauxzoon felis by Amblyomma americanum to domestic cats in relation to duration of infestation, and investigation of ingestion of infected ticks as a potential route of transmission. J Feline Med Surg. 20(2):67-72.

Meadows C, Guerino F, Sun F. Jan 2017. A randomized, blinded, controlled USA field study to assess the use of fluralaner topical solution in controlling canine flea infestations. Parasit Vectors. 10(1):36.

Meadows C, Guerino F, Sun F. Jan 2017. A randomized, blinded, controlled USA filed study to assess the use of fluralaner topical solution in controlling feline flea infestations. Parasit Vectors. 10(1):37.

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treating captive-born olive boons (Papio Anubis) coinfected with Strongvloides leborni and Trichuris trichu-J Am Assoc Lab Anim Sci. 56



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