



NCVP
National Center for Veterinary Parasitology

News from the NCVP

SPRING 2017

SPECIAL POINTS OF INTEREST:

- NCVP Welcomes Virbac Resident
- New Boarded Parasitologists
- NCVP Annual Spring Meeting
- NCVP at AAVP in Indy, 2017

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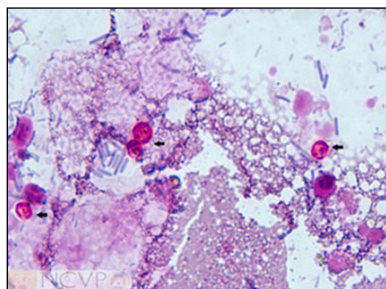
People

Welcome Dr. Jeba Jesudoss, Iowa State University!

Dr. Jeba Jesudoss Chelladurai, the **Virbac Resident** in veterinary parasitology, earned her veterinary degree from Madras Veterinary College in Chennai, India. After completing 2 months of clinical training at Michigan State University's College of Veterinary Medicine, she earned an MS in Microbiology from North Dakota State University studying *Cryptosporidium* spp. in wild birds before beginning her PhD research and clinical parasitology training at **Iowa State University** under the direction of Dr. Matt Brewer (DACVM-Parasitology).



Dr. Jeba Jesudoss, Virbac Resident at Iowa State University. Welcome Jeba!



Above, Modified Kinyoun's acid fast stain of *Cryptosporidium* spp. oocysts. Dr. Jesudoss's Master's work focused on *Cryptosporidium* spp. in wild birds.

emerging macrocyclic lactone resistance, and she'll also be spending some time preparing for the ACVM board examination in veterinary parasitology.

Congratulations Jeba – and welcome to the NCVP family!

Originally from southern India, **Dr. Jeba Jesudoss** has worked on **veterinary parasites** since her undergraduate days when she participated in projects involving everything from fecal egg counting to identification of arthropod vectors to tick pheromones.

Her graduate research will focus on the **spectrum of resistance mechanisms in nematodes**, including

Virbac
ANIMAL HEALTH



Jeba is receiving clinical parasitology training under the direction of Dr. Matt Brewer (DACVM-Parasitology) at Iowa State University

2017 ACVM—Boarded
Parasitologists:Dr. Matt Brewer, Iowa
State University

Dr. Jason Drake, Elanco

Dr. Brian Herrin, Oklahoma
State University

Congratulations 2017 Boarded Parasitologists!



Congratulations are in order for the newest cohort of parasitologists boarded through the ACVM. **Drs. Matt Brewer, Jason Drake, and Brian Herrin** took the Board exam in December 2016...and it's official! They can all add DACVM-Parasit. to their respective list of credentials. Way to go, guys!

Dr. Matt Brewer is Assistant Professor of Parasitology in the College of Veterinary Medicine at Iowa State University. He is also **mentor to Jeba Jesudoss, NCVP's newest Resident (Virbac).**

Dr. Drake is the Global Technical Marketer in Companion Animal Parasitocides at **Elanco** in the Bryan/College Station, Texas area. Jason has been an NCVP-er from the beginning, as he was an **industry representative** for one of our founding sponsors.

Dr. Brian Herrin, Boehringer Ingelheim (BI) Resident Scholar, is currently completing his post-doctoral research at Oklahoma State University's Center for Veterinary Health Sciences (OSU-CVHS). Brian earned his DVM and PhD in 2014 and 2016, respectively, from OSU and was awarded the **BI scholarship** in the Spring of 2016. In addition to his post-doctoral training, Brian is presently **applying for academic positions** at universities with research programs that complement his interest in vector-borne infections.

Once again, congratulations guys on such an amazing accomplishment!

Events



Spring 2017 Annual Meeting in Stillwater, OK

The NCVP held its annual **Spring 2017 meeting of the Board** in Stillwater, OK on **March 28–30**. Academic and industry board members met to discuss regular matters regarding the Center's ongoing **progress and successes**, and to brainstorm on **ideas for the future**. Outreach, training programs and short courses, Resident training, and the Small Grants Program were just a few of the items on the meeting's full agenda.

Above: Photo of NCVP academic Board members and industry sponsors taken at the Spring 2017 meeting in Stillwater, OK.



(article continued from page 2...)

Diversions during the meeting included a **Keynote presentation by Dr. Matt Bolek**, Assistant Professor of Zoology at Oklahoma State University, entitled "**Gordiids, Butterflies, and Protozoa, Oh My! Using Life Cycles to Uncover the Hidden Diversity of Parasites**" on the evening of the 28th and then Trivia Night at the local brewery *Iron Monk* the next night.

Pictured right: Keynote speaker for the 2017 NCVP Annual Spring meeting, Dr. Matt Bolek, Professor of Zoology at Oklahoma State University. And yes, that is a snake skin draped around his neck...



Check us out in Indy at AAVP 2017!

NCVP presence at AAVP 2017 will again be strong. The **NCVP Board, Residents, and Resident mentors will convene over lunch** on the Saturday of AAVP opening events to catch up, and to express our **gratitude** for the continued support from our industry sponsors and academic members. During the meeting, be sure to stop by the **NCVP educational table** to check out what has been happening with the Center, and of course to stock up on new parasite temporary tattoos and other NCVP paraphernalia. There is a **new twist to the table this year** – those stopping by will have a chance to *finally* give parasites a voice. Don't be left out! Find some time to swing by and contribute to this potentially hysterical and possibly offensive (well, hopefully not) activity.



At the conclusion of the AAVP meeting, the NCVP will again hold its challenging **audience-interactive clinical case series** presented by our Residents. The more audience participation, the better! So please join us for **one last parasite fix** before heading out. Thanks again, AAVP, for hosting this unique and interesting session at the annual meeting.

Pictured left: A custom NCVP temporary tattoo give-away from the 2016 NCVP table at AAVP in San Antonio. Be sure to stop by the NCVP table at AAVP 2017 in Indianapolis to stock up on new tattoos and other fun items!

Educational Opportunities

Can't Get Enough of Parasites?

We know how you feel! Fortunately there are a number of programs around the world to feed your need for training in all aspects of parasitology. From molecular to ecological, specialist to generalist, CE to academic degree, there are options that offer something for everyone. **Article continued on page 4...**



(article continued from page 3...)

NCVP residents and many of the veterinarians working with different NCVP sponsors over the years have greatly benefited from the week-long intensive **Wildcat Parasitology** experience led by [Dr. Michael Dryden at Kansas State University](#). Whatever your interest, there is likely a course or program to help it grow. And if you know of any parasitology training programs we don't have listed please [email](#) to let us know!

Parasitology Short Courses Around the Globe:

- [Biology of Parasitism](#) – Woods Hole, Massachusetts
- CDC short courses in [Molecular Diagnostics](#), [Diagnostic Parasitology I](#) (intestinal organisms and arthropods), and [Diagnostic Parasitology II](#) (blood and tissue parasites)
- [Concepts in Parasitology](#) – Australian Society for Parasitology
- [FR3 Filariasis Course](#) – Athens, Georgia
- [Ohio State Medical and Veterinary Acarology](#) – the tick course!
- [ParSCo](#) (Parasitology Summer Course), University of Bari, Italy
- [Schistosome training](#) in life cycle and molecular approaches from BRI



Degree Programs in Veterinary Parasitology



So you'd like more formal training and a graduate degree in veterinary parasitology? There are options!

Most veterinary colleges offer MS and PhD programs in veterinary parasitology. Full-time graduate students design and carry out mentored research projects, immerse themselves in learning veterinary parasitology, complete a thesis or dissertation, publish research papers, and gain skills that enable them to conduct research and teach in academia, industry, or at governmental agencies.

The [National Center for Veterinary Parasitology](#) can provide funding through our residency program for veterinarians who want to pursue full-time graduate research toward the PhD degree while also gaining diagnostic parasitology training and preparing for board examination from the ACVM. Degrees can be obtained from any North American institution with a strong program in veterinary parasitology teaching, research, and service. Learn more about NCVP funding for a combined PhD / residency program [here](#).



Cornell University
College of Veterinary Medicine

Cornell University's MPS Program

A new program at Cornell University, the [Master of Professional Studies \(MPS\) in veterinary parasitology](#), provides another exciting opportunity for professionals in industry, government, or non-governmental organizations to complete a parasitology degree. Structured to fit into an already busy schedule and with a flexible, professional-friendly timeline, the MPS is a great option for those looking to grow their parasitology expertise, gain hands-on experience, and master a comprehensive veterinary parasitology curriculum while earning an MPS degree. Learn more about the MPS program [here](#).

Research



Less is More—New NCVP Small Grants Approach

In Fall 2016, the NCVP awarded its **fourth cycle** of grants to AAVP researchers seeking funding for important parasite projects. In the past, grants have been awarded at \$10,000 increments. This last cycle, however, it was decided that selected grants could receive **up to \$15,000** in funding to help facilitate the research involved. A total of \$97,000 in funds were disbursed to seven researchers. The funded **researchers and projects for the 2016/2017 NCVP Small Grants Program** are listed below.

- **Dr. Scott Bowbridge**, West Virginia University - Identification of cuticular antigenic components found in third stage *Haemonchus contortus* larvae and the immune response they illicit.
- **Dr. Matt Brewer**, Iowa State University - Development of a Rapid Field Diagnostic Test for *Tritrichomonas foetus*.
- **Dr. Matt Griffin**, Mississippi State University - Investigating the *myxozoan* etiology of proliferative gill disease in blue x channel hybrid catfish in the southeastern United States.
- **Dr. Brian Herrin**, Oklahoma State University - Characterization of a novel tick-transmitted *Ehrlichia* sp. infection in horses.
- **Dr. Emily Jenkins**, University of Saskatchewan - *Echinococcus* species and genotypes in North America.
- **Dr. Andrea Varela-Stokes**, Mississippi State University - Refining approaches for detecting pathogens in the Gulf Coast tick, *Amblyomma maculatum*.
- **Dr. Michael Yabsley**, University of Georgia - Experimental investigation into the significance of domestic dogs as hosts for *Baylisascaris procyonis*, the raccoon roundworm.

AAVP members, take advantage of this unique resource and **submit your 2017/2018 small grants (up to \$15,000)** to further parasitology research! The next call for grants will be in **May 2017**, so be on the look out.

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
National Center for Veterinary Parasitology

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...

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.

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

Paarlberg T, Winkle J, Rumschlag AJ, Young LM, Ryan WG, **Snyder DE**. Feb 2017. Effectiveness and residual speed of kill of a novel spot on formulation of spinetoram (Cheristin®) for cats. *Parasit Vectors*. 10(1):59.

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 field study to assess the use of fluralaner topical solution in controlling feline flea infestations. *Parasit Vectors*. 10(1):37.

White WH, Riggs KL, Totten ML, **Snyder DE**, McCoy CM, Young DR. Jan 2017. Initial evaluations of the effectiveness of spinetoram as a long-acting, oral systemic pulicide for controlling cat flea (*Ctenocephalides felis*) infestations on dogs. *Vet Parasitol*. 233:25-31.

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*. [Epub ahead of print]

HIGHLIGHTS FROM 2016...

Tritten L, Clarke D, Timmins S, McTier T, **Geary TG**. Dec 2016. *Dirofilaria immitis* exhibits sex- and stage-specific differences in excretory/secretory miRNA and protein profiles. *Vet Parasitol*. [Epub ahead of print.]

Carithers D, Crawford J, de Vos C, Lotriet A, Fourie J. Dec 2016. Assessment of afoxolaner efficacy against *Otodectes cynotis* infestations of dogs. *Parasit Vectors*. 9(1):635.

Rosypal AC, Houk-Miles A, **Zajac AM**, Lindsay DS. Nov 2016. Flotation of *Toxocara canis* eggs in commercial bleach and effects of bleach treatment times on larval development in these eggs. *J Parasitol*. 62(7):553-6.

Snowden KF, Krecek RC, **Bowman DD**. Winter 2016. AAVP recommendations for core competency standards relating to parasitological knowledge and skills. *J Vet Med Educ*. 43(4):344-348.

Bowman DD, Liu Y, McMahan CS, Nordone SK, Yabsley MJ, Lund RB. Oct 2016. Forecasting United States heartworm *Dirofilaria immitis* prevalence in dogs. *Parasit Vectors*. 9(1):540.

Gruntmeir JM, **Adolph CB**, Thomas JE, **Reichard MV**, **Blagburn BL**, **Little SE**. Sep 2016. Increased detection of *Dirofilaria immitis* antigen in cats after heat pretreatment of samples. *J Feline Med Surg*. [Epub ahead of print]

Saleh MN, Gilley AD, Byrnes MK, **Zajac AM**. Sep 2016. Development and evaluation of a protocol for control of *Giardia duodenalis* in a colony of group-housed dogs at a veterinary medical college. *J Am Vet Med Assoc*. 249(6):644-9.

Raghavan RK, Goodin DG, Hanzlicek GA, Zolnerowich G, **Dryden MW**, Anderson GA, Ganta RR. Sep 2016. Maximum entropy-based ecological niche model and bio-climatic determinants of lone star tick (*Amblyomma americanum*) niche. *Vector Borne Zoonotic Dis*. 16(3):205-11.

Thomas JE, Staubus L, Goolsby JL, **Reichard MV**. Sep 2016. Ectoparasites of free-roaming domestic cats in the central United States. *Vet Parasitol*. 228:17-22.

Mani T, Bourguinat C, Keller K, Ashraf S, **Blagburn B**, Prichard RK. Sep 2016. Interaction of macrocyclic lactones with a *Dirofilaria immitis* P-glycoprotein. *Int J Parasitol*. 46(10):631-40.

Lucio-Forster A, Mizhquiri Barbecho JS, Mohammed HO, Kornreich BG, **Bowman DD**. 2016. Comparison of the prevalence of *Toxocara* egg shedding by pet cats and dogs in the USA, 2011-2014. *Vet Parasit Regional Studies and Reports* 5:1-13

Ketzis JK, Fogarty EA, Martini K, **Bowman DD**. Aug 2016. Explaining premonition with Kin selection using *Haemonchus contortus*. *Parasitology*. 143(9):1187-92.

Fankhauser R, Hamel D, Dorr P, **Reinemeyer CR**, Crafford D, **Bowman DD**, Ulrich M, Yoon S, Larsen DL. Jul 2016. Efficacy of oral afoxolaner plus milbemycin oxime chewables against induced gastrointestinal nematode infections in dogs. *Vet Parasitol*. 225:117-22.

Starkey LA, Newton K, Bruncker J, Crowdis K, Edourad EJ, Meunus P, **Little SE**. Jul 2016. Prevalence of vector-borne pathogens in dogs from Haiti. *Vet Parasitol*. 224:7-12.

Shreeg ME, Marr HS, Griffith EH, Tarigo JL, Bird DM, **Reichard MV**, Cohn LA, Levy MG, Birkenheuer AJ. Jul 2016. PCR amplification of a multi-copy mitochondrial gene (cox3) improves detection of *Cytauxzoon felis* infection as compared to a ribosomal gene (18S). *Vet Parasitol*. 225:123-30.

Dryden MW, Canfield MS, Kalosy K, Smith A, Crevoiserat L, McGrady JC, Foley KM, Green K, Tebaldi C, Smith V, Bennett T, Heaney K, Math L, Royal C, Sun F. Jun 2016. Evaluation of fluralaner and afoxolaner treatments to control flea populations, reduce pruritis and minimize dermatologic lesions in naturally infested dogs in private residences in west central Florida USA. *Parasit Vectors*. 9(1):365.

Milley C, **Dryden M**, Rosenkrantz W, Griffin J, Reeder C. Jun 2016. Comparison of parasitic mite retrieval methods in a population of community cats. *J Feline Med Surg*. [Epub ahead of print].

Barrett AW, **Little SE**. Jun 2016. Vector-borne infections in tornado-displaced and owner-relinquished dogs in Oklahoma, USA. *Vector Borne Zoonotic Dis*. 16(6):428-30.

Breitschwerdt E, **Little S**, Rugg D. May 2016. Sarolaner – a novel isoxazoline-addresses the need for enhanced flea and tick control. *Vet Parasitol*. 222:1-2.

Blagburn BL, Arther RG, Dillon AR, Butler JM, Bowles JV, **von Simson C**, Solynas R. Apr 2016. Efficacy of four commercially available heartworm preventive products against the JYD-34 laboratory strain of *Dirofilaria immitis*. *Parasit Vectors*. 9(1):191.

Rodriguez JY, Camp JW, Lenz SD, Kazacos KR, Snowden KF. Apr 2016. Identification of *Heterobilharzia Americana* infection in a dog residing in Indiana with no history of travel. *J Am Vet Med Assoc*. 248(7):827-30.

Geary TG. Apr 2016. A step toward eradication of human filariasis in areas where Loa is endemic. *MBio*. 7(2).

Zhou G, Stevenson MM, **Geary TG**, Xia J. Apr 2016. Comprehensive transcriptome meta-analysis to characterize host immune responses in helminth infections. *PLoS Negl Trop Dis*. 10(4).

Davignon DL, **Lee AC**, Johnston AN, **Bowman DD**, Simpson KW. Mar 2016. Evaluation of capsule endoscopy to detect mucosal lesions associated with gastrointestinal bleeding in dogs. *J Small Anim Prac*. 57(3):148-58.

Cossaboom CM, Heffron CL, Cao D, Yugo DM, Houk-Miles AE, Lindsay DS, **Zajac AM**, Berke AS, Elvinger F, Meng XJ. Feb 2016. Risk factors and sources of foodborne hepatitis E virus infection in the United States. *J Med Virol*. 88(9):1641-5.

Bowman DD, Grazette AR, Basel C, Wang Y, **Hostetler JA**. Jan 2016. Protection of dogs against canine heartworm infection 28 days after four monthly treatments with Advantage Multi® for Dogs. *Parasit Vectors*. 9(1):12.