Awards and Accolades

Dr. Alice Lee Receives Outstanding Graduate Student Award

Congratulations to Dr. Alice Lee, PhD candidate and NCVP Novartis resident, who received the 2014 AAVP -Merck Animal Health Outstanding Graduate Student Award. Dr. Lee, who is originally from Taiwan and grew up in Toronto, Canada, earned her DVM from Ontario Veterinary College, University of Guelph. She is currently working toward her PhD under the advisement of Dr. Dwight Bowman, Cornell University, researching less invasive methods to evaluate canine anthelmintic efficacies and the dynamics of Toxoplasma gondii and Toxocara canis co-infection in mice. On the opening night of AAVP in Denver, Colo., Dr. Lee accepted the prestigious award and spoke to a room full of meeting attendees regarding her research on antibody-mediated trapping of Toxocara larvae in mice. Very well done, Alice!

Dr. Lindsay Starkey Does it Again!

Bayer resident Dr. Lindsay Starkey placed second in the 2014 AAVP student competition for her presentation entitled “Prevalence of vector-borne pathogens in dogs from Haiti.” Lindsay is a fantastic speaker. She has won several competitions including the 2010 AAVP student presentation session (first place) and the 2014 3-minute thesis competition within Oklahoma State University’s Center for Veterinary Health Sciences. Great job, Lindsay!
Awards and Accolades Continued...

Drs. Nagamori and Rodriguez Receive Honorable Mention

Dr. Yoko Nagamori, NCVP resident, and Dr. Jessica Rodriguez, NCVP Merial Resident, both received Honorable Mention in the student presentation competition at AAVP 2014 for their presentations “Association between nymphal engorgement weight and sex of adult Amblyomma americanum, Amblyomma maculatum, Dermacentor variabilis, and Rhipicephalus sanguineus” and “Detection of circulating anodic antigen in raccoons naturally infected with Heterobilharzia americana and comparison of test performance with fecal sedimentation and fecal PCR,” respectively. Way to go, Yoko and Jessica!

NCVP at AAVP 2014

NCVP Promotional Table Continues to Expand Awareness

The NCVP promotional table this year again offered brochures, temporary tattoos and NCVP branded and pre-loaded USB drives to AAVP meeting attendees. Tattoos included those distributed during AAVP 2013 and new “ink” of Cimex, a Giardia trophozoite, Ancylostoma caninum cutting teeth, and a Haemonchus female engorged with blood. In addition to parasite videos available on USB drives last year, new parasite “digital shorts” featured Mesocestoides oncospheres, a hatching/swimming Heterobilharzia (continued on the following page...
NCVP at AAVP 2014 Continued...

NCVP Member Research Presentations

NCVP members were very active in AAVP this year, with all residents and numerous board members presenting, some giving several talks. Research topics and speakers are listed below and on the following page.

NCVP Residents:

- Antibody-mediated trapping of *Toxocara canis* larvae within the murine liver upon challenge infection (2014 AAVP-Merck Outstanding Graduate Student Talk)—Dr. Alice Lee (see front page)
- Assessing the speed of kill of *Ancylostoma caninum* by Advantage Multi® for dogs using endoscopic methods—Dr. Alice Lee
- Prevalence of vector-borne pathogens in dogs from Haiti—Dr. Lindsay Starkey
- Detection of circulating cathodic antigen and circulating anodic antigen in raccoons naturally infected with *Heterobilharzia americana* and comparison of test performance with fecal sedimentation and fecal PCR—Dr. Jessica Rodriguez
- Association between nymphal engorgement weight and sex of adult *Amblyomma americanum*, *Amblyomma maculatum*, *Dermacentor variabilis*, and *Rhipicephalus sanguineus*—Dr. Yoko Nagamori
- Ectoparasites of free-roaming domestic cats (*Felis catus*) presented to a spay-neuter clinic in Oklahoma—Dr. Jennifer Thomas
- Evaluation of fecal samples from dogs with naturally acquired gastrointestinal nematodes for coproantigen of *Trichuris vulpis*, *Toxocara canis*, and *Ancylostoma caninum*—Dr. Chris Adolph (2013 NCVP Resident graduate).

NCVP Board Members:

- Factor selection for utilization in maps of four vector-borne diseases—Dr. Dwight Bowman
- Protection of dogs against canine heartworm infection 28 days after 4 monthly treatments with Advantage Multi® for dogs—Dr. Dwight Bowman
- Administration of 10% imidacloprid-1% moxidectin protects cats from subsequent, repeated infection with *Dirofilaria immitis*—Dr. Susan Little

(continued on the following page...)

Edible promotional items were “Feces Pieces” and “Feces Poonut Butter Cups,” which were quite popular as evidenced by the need for continual restocking. NCVP members staffed the table between sessions and during breaks to speak with interested perusers about the NCVP.

In the photograph to right, NCVP Project Leader Dr. Kelly Allen (behind table) and NCVP Zoetis sponsor representative Dr. Joyce Login (first from left) speak with Dr. Joe Dedrickson from Merial Limited and Dr. Tom McTier from Zoetis, who peruse the NCVP table during a meeting break at AAVP 2014.

Above: Edible promotional items available on the NCVP table at AAVP 2014.

If you would like a pre-loaded custom NCVP USB flash drive or any parasite temporary tattoos contact us at ncvp@okstate.edu
**NCVP at AAVP Continued...**

(NCVP member research presentations at AAVP 2014 continued from page 3...)

- Prevalence of *Dirofilaria immitis* antigen in feline samples after heat treatment—**Dr. Susan Little**
- False negative antigen tests in dogs infected with heartworm and placed on macrocyclic lactone preventives—**Dr. Susan Little**
- Tick-borne infections in the southern United States – changing patterns (President’s Symposium Keynote Talk)—**Dr. Susan Little**
- Prevalence of internal parasites in shelter dogs and cats based on centrifugal fecal flotation—**Dr. Byron Blagburn**
- Comparative efficacy of four commercially available heartworm preventive products against the JYD-34 laboratory strain of *Dirofilaria immitis*—**Dr. Byron Blagburn**
- Worm burdens of *Haemonchus contortus* in alpacas and sheep following experimental infection—**Dr. Anne Zajac**

---

**NCVP Case-Based Clicker Session Again a Success at AAVP**

The NCVP again held a case-based, interactive (clicker response) clinical parasitology session at AAVP this year. Ten cases were compiled by Drs. Susan Little and Mason Reichard (OSU), complete with case histories, pertinent images, and follow-up questions regarding case management. Susan and Mason were available to respond to questions from the audience about featured parasites or expound on why certain answers were correct or incorrect. It served as a great review for graduate students who intend to become boarded in Veterinary Parasitology, as well as veterinarians who do not often see cases of the parasites presented. The moderator, or rather, referee, for the event was the 2014 AAVP President-elect himself, Dr. Andrew Peregrine. The session was very positive, informative, and entertaining. Thank you, Andrew, for doing such a fantastic job at keeping the session lively, well-paced, and enjoyable! And many thanks to all audience members who participated in the session to make it such a wild success!
Jessica perfuses a mouse during the schistosome lifecycle workshop in Maryland.

Current NCVP Residents with their individual awards received at AAVP 2014. From left to right: Dr. Jessica Rodriguez (Texas A&M University, Merial Resident), Dr. Alice Lee (Cornell University, Novartis Resident), Dr. Yoko Nagamori (Oklahoma State University, NCVP Resident), and Dr. Lindsay Starkey (Oklahoma State University, Bayer Resident).

Read what our residents have been up to recently in the article below...

Alice recently completed intensive parasitology training in Woods Hole, Mass., during Biology of Parasitism: Modern Approaches, a program directed by Dr. Kirk Deitsch, Weill Cornell Medical College, and Dr. Gary Ward, University of Vermont. The highly esteemed, world-renowned training course focuses on molecular parasite function and host/parasite interactions. Great job, Alice!

Alice injects frog eggs with RNA during parasitology training in Woods Hole, Mass.

Jessica recently completed two human schistosome training courses in Rockville, MD in order to gain better understanding of canine schistosomes, the focus of her dissertational research. The first workshop examined small interfering RNA (siRNA) in functional genomic work with Schistosoma mansoni stages, and the second provided training on life cycle maintenance of Schistosoma mansoni, S. japonicum, and S. haematobium. Photomicrograph: egg of the canine schistosome Heterobilharzia americana.
Yoko trained in diagnostic clinical parasitology during May – August of 2014 with Dr. Eileen Johnson, clinical associate professor in Veterinary Parasitology, and Becky Duncan-Decoq, research technician at the Center for Veterinary Health Sciences, Oklahoma State University. In this capacity, Yoko developed and refined her parasitology diagnostic skills by examining and identifying samples submitted to the Diagnostic Parasitology Laboratory under the supervision of Dr. Johnson. Yoko’s diagnostic skills were impressive, as was her zeal for parasitology, which inspired her to independently obtain and identify parasites in various wildlife she collected herself or through the Avian, Exotic, and Zoo Department at Oklahoma State University. Yoko thoroughly enjoyed her internship in veterinary diagnostic parasitology with Dr. Johnson and Becky, made evident by her enthusiasm and eagerness to learn. The NCVP is thrilled to have Yoko as a resident!

Each of the NCVP residents, Alice, Lindsay, Jessica, and Yoko, completed Wildcat Parasitology (WCP) in 2014. The program, taught by Drs. Michael Dryden and Patricia Payne, Kansas State University, and sponsored by several veterinary pharmaceutical companies, is designed to expose attendees to a variety of parasitology concepts and techniques through lecture materials, directed field and laboratory work, and independent research. Many thanks to Mike, Pat, and NCVP sponsors for providing such an extraordinary parasitology training opportunity to NCVP residents, and great job residents on completing it!

Jessica (second from the left) and her partner Ashley McGrew (post-doc at Colorado State University) check for ticks on a drag during WCP. Dr. Sam Reichman, a private practitioner from Georgia, is on the left.

Jessica (front, middle) and Yoko (front, right) retreat from a successful tick drag with others in the group including American Heartworm Society President Dr. Stephen Jones (front, left) and Dr. Mike Dryden, who is in the back with a camera. You guys look like you’re draggin’ (get it)!
2014 Request for Parasitology Research Proposals

The NCVP is again offering funding for up to one year for parasitology research projects; the request for research proposals (RFP) was distributed to AAVP members on July 1, 2014. This year, investigators may request up to $15,000. Funding is made possible through our founding sponsors, Bayer Animal Health, Merial Limited, and Novartis Animal Health, and new sponsors Elanco, Merck Animal Health, and Zoetis which partnered with the NCVP in 2014. Excitingly, this year the American Heartworm Society will provide support for the RFP initiative, which means available funds can accommodate 6 to 8 one-year awards of $10,000 to $15,000 each, with two of the total number of projects funded focused on *Dirofilaria immitis*. The RFP is open to all members of the AAVP at AVMA accredited schools in the Americas. Awarded funds will be disbursed in November 2014. This is an excellent opportunity to obtain research funding for projects that are less likely to be funded through other organizations. The NCVP encourages your submission!

Parasites for the People

Merial Resident Jessica Rodriguez Talks Canine Heartworm on the Local News!

Dr. Jessica Rodriguez recently appeared on local morning news during the Pet Talk segment (KBTX, College Station, Texas) to raise public awareness about canine heartworm transmission, symptoms, testing, treatment, and year-round prevention. Jessica is a natural on camera, although she claims her dog Pixie stole the show! Keep up the great work, Jessica! Click [here](#) to see Jessica on the NEWS! Also, Jessica recently wrote an article about water-borne parasites in dogs for the Texas A&M University newspaper *tamu times*, an excerpt of which was featured in *Bio News Texas*. Click [here](#) to read the article. The photograph of Jessica performing a fecal sedimentation on the left was featured in *tamu times*.

NCVP Members Present during OSU’s Annual Summer Seminar

Drs. Kelly Allen, Eileen Johnson, and Jennifer Thomas (pictured from left to right) participated in Oklahoma State University’s College of Veterinary Medicine Annual Summer Seminar on June 6, 2014. Dr. Allen presented the latest findings in heartworm research, including canine and feline heartworm antigen negative test reversal through sample heating, and experimental evidence for heartworm resistance to macrocyclic lactones. Dr. Johnson spoke about different fecal egg count test methods, uses, limitations, and interpretations. And Dr. Thomas presented on common horse ectoparasites and methods for their control. Thanks for helping to educate practicing veterinarians and veterinary technicians on these important research topics!
And They’re Off! NCVP Introduces New Sport to the World — Tick Racing!

*Drs. Kelly Allen* and *Lindsay Starkey* recently instructed the Parasitology lab at Oklahoma State University’s annual Grandparent University (GPU), an event where OSU alumni are invited to escort their grandchildren to various classes on campus. Parasitology lab is highly sought after every year. During Parasitology at GPU, children (ranging in age from 5 to 12 years) and grandparents learn about and view specimens of various parasites including heartworms, roundworms, tapeworms, fleas, and ticks. A particularly popular specimen every year is the nearly 7-foot long, intact *Moniezia* graciously provided by Dr. Thomas Yazwinski at the University of Arkansas. Also, children (and grandparents) enjoy posing behind a life-sized *Amblyomma americanum* picture board to have their photos taken as lone star ticks. Live ticks in magnifying viewing boxes are also a source of entertainment.

And this year, a new sport was introduced to the world — ** TICK RACING! ** In preparation for racing, live colony-reared ticks were painted with different nail polish colors (fortunately, Dr. Starkey has an impressive selection) while adhered to double-sided tape, allowed to dry, and then placed in a 4 ml cryovial before waiting to race. The race track was a single empty circle printed on a piece of white paper, which was surrounded by double-sided tape to cordon off an arena. Kids first chose their racer color (Lime Laser, Lucky Lilac, Outrageous Orange, Racer Red, and Teal Tornado, to name a few). Ticks were flicked out of the cryovial into the center of the circle, and the first tick to make it across the circle line placed first. While caught up in the excitement of the race, kids and grandparents alike would cheer on their chosen racers, with “Go! Go! Go!” being a popular chant. It was a hit in 2014, and the start of a new GPU Parasitology tradition at Oklahoma State University!
NCVP Image Database Expanding

The NCVP is very excited about the new images available in the NCVP image database. Dr. Ellis Greiner, Professor Emeritus, Department of Infectious Diseases and Pathology, University of Florida, graciously shared with the NCVP his remarkable collection of parasite photographs he has taken and compiled over the years. The images are watermarked with both the NCVP and University of Florida (UF) logos. Third year veterinary student at OSU, Darcy Messerly, took on the task this summer of adding over 200 of Dr. Greiner’s images to the database, which currently houses over 400 images, but there are hundreds more to post! So please, be sure to check out the extraordinary parasite images available at www.ncvetp.org!

Trypanosoma theileria trypomastigote
Anterior end of an acanthocephalan
Haematobia irritans adult
Dermatobia hominis larva

Above: Photographs shared with the NCVP by Dr. Ellis Greiner, which are now available in the NCVP image database.

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.

NEWS FROM THE NCVP
Our residents, faculty, and staff have had a busy year. Below is an abridged list of just a few of the publications over the last year (names of board members and residents are bolded). To request the full list or individual reprints, please email ncvp@okstate.edu. And just let us know if you have suggestions for future CE articles, review papers, or topics you think would be of interest to others in the field.

2014 TO DATE...


AND A FEW MORE TO WATCH FOR...