

# In this Issue

# Wool & Wattles

The AASRP Newsletter  
April - June 2020  
Volume 48, Issue 2

President's Letter .....	2
Management Report .....	2
Student Externship Opportunities .....	3
AASRP Webinars, Past and Future .....	3
Minutes of Board Meetings .....	4
AASRP Annual Membership Zoom Meeting .....	6
AASRP Annual Convention Hybrid Format .....	7
Student Externships Report .....	7
Announcements .....	8
Books, Bulletins, and Computer Websites .....	8
Camelid Antibodies Fight Covid 19 Virus .....	8
Practice Tip — Enterotoxemia Antitoxin Unavailable .....	8
AASRP-L Q&A — Gynecomastia in Bucks .....	9
AASRP-L Q&A — Rectal Prolapse Repair .....	9
AASRP-L Q&A — Writing a VFD for Minor Species .....	10
AASRP-L Q&A — Perruque Antlers .....	10
LAMA_MED Q&A — Cria Vaccination Protocol .....	11
Practice Tip — Alfaxalone in Place of Propofol .....	12
Goat Milk Withdrawal Intervals for Flunixin .....	12
Meningomyelitis from Tail Docking .....	12
Polioencephalomalacia in Ruminants .....	12
Laser Ablation of Retropharyngeal Abscess .....	13
Mycoplasma ovis in United States Sheep .....	13
Sertoli Cell Tumor in an Alpaca .....	14
Epidural with Lidocaine Plus Dexmedetomidine .....	14
Toe Granulomas and Shelly Hoof in Sheep .....	14
Brain Histology in Goats with Enterotoxemia .....	15
Infrared Thermography to Measure Stress in Sheep .....	15
<i>Mycobacterium kansasii</i> Resembles Tuberculosis .....	15
Review of Clostridial Enterotoxemias .....	16
Skin Diseases of Goats with Photos .....	16
<i>Blastomyces</i> Pneumonia in a Llama .....	17
<i>Campylobacter</i> Abortion in Sheep, Zoonotic Concerns .....	17
Bactrian Camels Shed MERS CoV Coronavirus .....	17
AASRP Board of Directors and Committees .....	18
Veterinary College Liaisons .....	19

## Mission Statement of AASRP

“To improve the health and welfare of sheep, goats, camelids and cervids, to further the professional development of the members, provide resources to elevate the standards of small ruminant practice and to be the voice for small ruminant issues.”



## Letter from the President



Greetings!

Hello everyone! I hope this finds everyone well. A lot of change has occurred the last three months in how we live, work and interact with others. Our organization has had to adapt also.

General Membership meeting: will now be held virtually via "ZOOM" on August 12th, 2020 at 11:30 am Eastern / 10:30 am Central/ 9:30 am Mountain/ 8:30 am Pacific just prior to the AASRP CE session presented by Dr. Robert

Van Saun on small ruminant nutrition. More details will follow by email and are on page 6 of this newsletter. Please plan on tuning in to hear about what we are doing for you our members.

We thank Dr. Chris Duemler for his service as Region 3 Director for two terms and Dr. Meredyth Jones for her service as Treasurer. They have been valuable members of our board and we appreciate them sharing their time, energy, knowledge and skills with the organization. Both will continue as members of committees and valuable assets to us! We welcome Dr. Virginia Fajt as the incoming Region 3 director and Dr. Michelle Kutzler as our new treasurer. Thank you to everyone who participates in leadership and committees. Please contact any officer or your regional director if you would like to help on a committee.

We welcome two new lifetime members: Dr. Marie Bulgin (Idaho) and Dr. William Brockway (Minnesota). Thank you to these, other lifetime members, and other longterm members for their continued support of our organization and promotion of small ruminant medicine.

The AASRP CE RACE approved webinars coordinated by Dr. Kelly Still-Brooks are going strong. We have had two fantastic webinars in May and June with Dr. Tanya Applegate (Urogenital Procedures in the Ram and Buck) and Dr. Pippa Gibbons (Practical Sustainable Parasite Control). These have been well attended and positive feedback has been received. The next three will focus on nutrition. Webinars will be on Wednesdays at 12 noon eastern. The complete webinar schedule will be available on the website and later in the newsletter. These sessions are being recorded and are available on the website free for our members through the BCI Mobile Conference platform (along with other free small ruminant CE sessions). Be sure to check the website, Bugles and Orgles and social media sites (Instagram: @aasrppofficial, Facebook: American Association of Small Ruminant Practitioners) for the most up to date information and plan on joining in on the free CE!

Upcoming conferences status as of 6/26/20:

**AVMA**- in person cancelled, virtual sessions will concentrate on COVID.

**AABP**- Louisville, Sept. 24-26, will continue. The small ruminant schedule has been moved around a bit, but sessions will continue.

**NAVC -1/2021**- still on, small ruminant sessions not reduced.

**International Sheep Veterinary Congress**, Seville, Spain delayed until Sept. 19-23,2022

The board continues to review and revise the policies. Revisions available for review on the webpage on the "About" tab drop down. If there are other topics that you think we need to develop policies on, please let your regional director or one of the officers know your idea and one or two potential persons to help develop the new policy. We will be reviewing all the policies currently in place prior to developing any new ones.

Keep Safe, Be Kind & Take Care of yourself and your family & friends.

Ann Goplen, AASRP President, Gople003@umn.edu

## Executive Director's Report

Summer Greetings AASRP Members

I hope that you are all safe and healthy during the unfortunate situation that our world is currently facing. The AASRP office has recently developed a re-branded electronic Bugles and Orgles newsletter delivered to your email inbox once a month with information and updates. Included in the recent issues have been messages regarding Congressional legislation in the COVID-19 relief packages. Specifically, we have included information about the Payroll Protection Program and loan forgiveness. We intentionally keep these messages succinct to encourage you to read them and stay informed on issues important to veterinarians.

Our dues renewal season has closed and those who have not paid have been removed from the mailing list and the listserve. In the future you can update your dues online at <http://aasrp.org/members/payment.asp>. Please keep current on your account information. Review your account by logging on to the website at [aasrp.org](http://aasrp.org) and hover over your name to select 'Manage My Account'. From that page, you can update your contact information, check to make sure your membership expiration date is 12/31/2020 (if it is not it means your dues have not been received), scroll down to select delivery of the Wool and Wattles (electronic or mailed) and find your webinar CE certificates.

Please continue to read the notices from the office to find information about AASRP, including webinars that will be offered this year. Dr. Kelly Still-Brooks has done a tremendous job bringing practical and relevant CE to the members, a major mission of the organization. Thank you for your membership and participation in AASRP!

Sincerely,

K. Fred Gingrich II DVM  
Executive Director

American Association of Small Ruminant Practitioners

## Student Externship Opportunities

We receive many requests from veterinary students for information about externship opportunities. We are asking AASRP Veterinary members if they are interested in hosting primarily 4th year students for two to four weeks. Our new search function within the website allows members to self-identify if they are able to host externships in small ruminant practice. To update your information, simply log into your membership portal and select Manage My Account and scroll down to the Membership Info section to indicate if you will accept externships by selecting 'Yes'. After that, students who are searching for extern opportunities can find your location and contact you.

Information that the students desire includes: — Small ruminant species seen in your practice, — Busiest months of the year relevant to small ruminant work, — Practice location, — Availability of housing, and — Preferred contact information for externship requests.

Based on student feedback, we see a need to update externship opportunity information from the membership. Thus we are asking for those of you who wish to host student externs to update your current membership information on the [www.aasrp.org](http://www.aasrp.org) website. If you have any questions or concerns, or need help accessing the website, email [aasrp@aasrp.org](mailto:aasrp@aasrp.org) or call 419-496-0696 for assistance.

Thanks!  
Cindy Wolf, DVM



*Dr. Samuel B. Guss  
(1916–1984)*

## Samuel B. Guss Memorial Fund

### *Contributions for 2020 Second Quarter*

Bridget Hopkins

Julie Hurley

In order to assist veterinary students interested in small ruminant medicine, AASRP provides grants each year to help student members of AASRP undertake externship opportunities. It is not required that the experience be with small ruminants exclusively, but it should provide at least some chance to observe a modern veterinary practice working with one or more small ruminant species.

Over one hundred AASRP member practitioners throughout the United States - as well as Australia, Brazil, Canada, Germany, Israel and Puerto Rico - offer externships to students seeking experience in small ruminant medicine. To learn more about the AASRP Student Externship Program, call the AASRP Management Office at 419-496-0696, or log on at [aasrp.org](http://aasrp.org).

Donations for the Sam Guss Fund can now be made online without membership renewal by going to [www.aasrp.org](http://www.aasrp.org) and choosing the tab 'About AASRP'. The direct link is [http://www.aasrp.org/guss/guss\\_fund.asp](http://www.aasrp.org/guss/guss_fund.asp)

## Sam Guss Externship Grants

Thanks to generous donors to the Sam Guss Fund, the AASRP is able to provide externship support for veterinary students wishing to expand their knowledge and experiences in small ruminant practice. The following students were approved by the Student Education Committee and Board of Directors for Sam Guss Fund Externship Grants:

Audrey Dollinger, St. Georges University, \$750 to attend coursework at the Royal Dick School of Veterinary Science with Dr. Cristina Soare.

Marina Sweet, The Ohio State University, \$545 to attend an externship with Dr. Dale Roberts of Feeder Creek Veterinary Service, Millersport, OH.

Taylor Mittleider, Lincoln Memorial University, \$750 to attend an externship with Dr. Blake Miller of Northwest Mobile Vet, Portland, OR

Christina Lamb, Lincoln Memorial University, \$750 to attend an externship with Dr. Blake Miller of Northwest Mobile Vet, Portland, OR.

## WELCOME NEW MEMBERS

### 2nd Quarter

#### New Students

Matthew Herber  
Christina Lamb  
Calli Morris  
Rachel Prestigiacomo  
Kelsey Seremet  
Aubrey Vena

#### Retired Member

Michael Cousins

#### New Active Members

George Barrington  
Elisabeth Begley  
Catalina Cabrera  
Rachel Chase  
Sarah Cooper  
Brittany Diehl

Lauren Dodds  
Sarah Dyck  
Austin Hinds  
Jessica Kidd  
Andi Lear  
Shawn McKenna  
Christine Moebus  
Jenna Moore  
Cesar Narciso

Jessica Paris  
Beth Pollock  
Kevin Rockow  
Tori Stierns  
Megan Stuart  
Jerica Thoms  
Lauren Waldorf  
Doni Zivotofsky

## Recorded Webinars Available

If you were unable to attend a live webinar and you are a current AASRP member, you can access recorded webinars utilizing the free CE portal. This CE portal is made available to AASRP members through a collaborative effort with the Beef Cattle Institute (BCI) at Kansas State University. AASRP sessions from the AABP annual conference as well as webinar recordings are available and RACE approved for CE. There are two ways to access the content:

1. Log on to the AASRP website and click on the purple cow head BCI logo. A direct link is here. <<http://www.bcionlinece.org/Search.aspx>> Once you are in the CE portal, you can search by keyword, author, or conference. Select 'Webinar' from the Conference Location drop down box to locate the webinar recordings. Once you have completed your viewing, you can take a quiz to receive a CE certificate that is stored on the BCI site or printed.
2. Go to your app store and download the free "BCI Mobile Conference App". You can login using your AASRP credentials to view the same content. Please note that sessions and webinars listened to via the app are not available to receive a CE certificate.

This is a great member benefit and the board encourages members to take advantage of the online CE content that is available at no charge to you!

## Accessing your webinar CE certificate

If you listen to an online webinar live, please be sure to sign in to the webinar using your first and last name. If you are an AASRP member, the office will assign a CE certificate to you within a few days of the webinar. To access your CE certificate, log on to the AASRP website then hover over your name in the upper right corner. Click on 'Manage My Account'. On your account page, you can scroll to the bottom of the page to see your CE certificates and view or print them.

## Webinar Schedule

### **AASRP Webinar Dr. Bob Van Saun: Interpretation and Application of Feed Analysis in Small Ruminant Diets**

Wed, Aug 12, 2020 12:00 PM - 1:00 PM (EDT)

Please join my meeting from your computer, tablet or smartphone.

<https://global.gotomeeting.com/join/234172429>

You can also dial in using your phone. United States: +1 (646) 749-3129 Access Code: 234-172-429

### **AASRP Webinar Dr. Richard Ehrhardt: Rotational Grazing and Forage Management**

Wed, Sep 9, 2020 12:00 PM - 1:00 PM (EDT)

Please join my meeting from your computer, tablet or smartphone.

<https://global.gotomeeting.com/join/234172429>

You can also dial in using your phone. United States: +1 (646) 749-3129 Access Code: 234-172-429

### **AASRP Webinar Dr. Tanya Applegate: Eyes and Feet**

Wed, Oct 7, 2020 12:00 PM - 1:00 PM (EDT)

Please join my meeting from your computer, tablet or smartphone.

<https://global.gotomeeting.com/join/179852213>

You can also dial in using your phone. United States: +1 (571) 317-3117 Access Code: 179-852-213



# Summary of AASRP Board Meetings April - June, 2020

President Ann Goplen called meeting to order at 9:00 pm EDT.

## MOTIONS

1. **Dr. Duemler moved to accept the consent agenda with management report and electronic motions; Dr. Johnson seconded the motion. The motion passed.**
2. **Dr. Johnson moved to accept the financial report; Dr. Myers seconded the motion. The motion passed.**
3. **Dr. Johnson moved to approve the externship funds of \$750 for Taylor Mittleider of LMU; Dr. Higgins seconded the motion. The motion passed.**
4. **Dr. Johnson moved to approve the externship funds of \$750 Christina Lamb of LMU; Dr. Mongini seconded the motion. The motion passed.**
5. **Dr. Kutzler moved to adjourn; Dr. Higgins seconded the motion. The motion passed.**

## Meeting Minutes Summary

- The management report was submitted electronically in the consent agenda.
- Region 1: Dr. Jon Higgins reported that it's getting to be parasite season. No activities with students until late next month.
- Region 2: Dr. Beth Johnson Johnson reported that parasites are taking hold but there are some good webinars, including AASRP's, that people can watch. Things like fairs are sad to watch as they are being cancelled each week. Ohio State Fair is canceled, Kentucky is undetermined at this time.
- Region 3: Dr. Chris Duemler reported much of the same. A few independent fairs claim they are going to continue. Lots of webinar and online education is going on. Still making a lot of farm calls.
- Region 4: No report.
- Budget and Finance Committee: Dr. Jones reported that AASRP is cash and investment-flush. The committee approved the current money for CE. Discussion about using this money for member benefits. Being more engaged in student chapters was discussed. Student Education Committee came up with several ideas for the committee to consider. Dr. Kutzler expressed concerns about how much we had in checking vs. money market accounts, etc. We currently have a lot of cash in checking at 0.05% interest. She would like to consider moving some of the money to a money market with a slightly higher interest – 0.165%. Discussions were held about that and staff time it takes for those transfers and staying within the financial policy of having operating funds at a certain amount. Board will receive emails about this. Discussion on moving more into the investment Vanguard fund. May want to revisit financial policy of what thresholds should be for how much money should be in different funds. Student Ed committee will propose ideas and budget and finance will look at funding them.
- Continuing Education Committee: Dr. Still-Brooks reported that the first webinar was very good and Dr. Gibbons will give the second webinar next week. Had about 50 people on the first webinar with Dr. Applegate. Had a few submissions for small ruminant abstracts to be reviewed. AVMA has cancelled and is shifting the CE portion to a virtual portion. Speakers we had lined up are automatically rolled over to next year. Drs. Myers, Munis, Goplen and Gibbons were in Chicago for the AVMA Veterinary Leadership Conference and House of Delegates meeting.

## April 29, 2020, Board of Directors Meeting

Attendees: Ann Goplen, Beth Johnson, Susan Myers, Kelly Still-Brooks, Meredyth Jones, Chris Duemler, Michelle Kutzler, Jon Higgins, Andrea Mongini, Fred Gingrich and Geni Wren

President Ann Goplen called meeting to order at 9:00 p.m. EDT.

## MOTIONS

1. **Dr. Johnson moved to accept the consent agenda with management report and electronic motions; Dr. Mongini seconded the motion. The motion passed.**
2. **Dr. Kutzler moved to accept corrected March minutes; Dr. Still-Brooks seconded the motion. The motion passed.**
3. **Dr. Kutzler moved to accept the financial report; Dr. Duemler seconded the motion. The motion passed.**
4. **Dr. Kutzler moved to approve externship funds of \$545 for Marina Sweet; Dr. Higgins seconded the motion. The motion passed.**
5. **Dr. Johnson moved to adjourn; Dr. Myers seconded the motion. The motion passed.**

## Meeting Minutes Summary

- The management report was submitted electronically in the consent agenda.
- Region 1 report: Dr. Jon Higgins reported lambing is still going on in his district. He has had three online small ruminant meetings with the University of Pennsylvania, Rutgers and another university.
- Region 2 report: Dr. Beth Johnson reported that she has been involved in several webinars for producers and will create some videos in the next month.
- Region 3 report: Dr. Chris Duemler reported it's been a busy time with kidding and lambing in Region 3.
- Region 4 report: Dr. Michelle Kutzler reported that she has sent emails to members in her region and has received a positive response from a member appreciating her reaching out. She reported how creameries are donating large amounts of cheese and products to food banks, but producers are facing euthanasia of bucks at birth. Small creameries may go out of business as they have no reserves. The American Sheep Industry Association has said lamb growers have lost their market from restaurants and wool prices are down. The PACVet conference has been cancelled. A video was shared on how to perform a small ruminant necropsy. There are still sheep club meetings occurring.
- Continuing Education Committee: Dr. Kelly Still-Brooks reported that webinars are confirmed for May 13, June, July, August and September.
- FDA Compounding Comments – AABP has convened experts and will submit poison antidote nominations for both cattle and small ruminants.
- OPP – Dr. Mongini will investigate if AASRP wants a webinar or a short course.
- The meeting was adjourned at 10:00 pm EST

## May 22, 2020 Board of Directors Meeting

Attendees: Ann Goplen, Beth Johnson, Susan Myers, Kelly Still-Brooks, Meredyth Jones, Chris Duemler, Jon Higgins, Andrea Mongini, Michelle Kutzler, Kelly Still-Brooks, Fred Gingrich and Geni Wren

- General Membership meeting – Plans to hold it ahead of the August 12 AASRP webinar, 20 minutes ahead of the webinar.
- Date for annual Board meeting will be at the regular July meeting, then schedule another hour discussion at another time if needed.
- Meeting adjourned at 10:00 pm EDT.

## June 24, 2020 Board of Directors Meeting

Attendees: Ann Goplen, Beth Johnson, Susan Myers, Michelle Kutzler, Kelly Still-Brooks, Meredyth Jones, Chris Duemler, Jon Higgins, Andrea Mongini, Fred Gingrich and Geni Wren

President Ann Goplen called meeting to order at 9:00 p.m. EDT.

### MOTIONS

1. **Dr. Duemler moved to accept the consent agenda with management report and electronic motions; Dr. Johnson seconded the motion. The motion passed.**
2. **Dr. Myers moved to accept the financial report; Dr. Higgins seconded the motion. The motion passed.**
3. **Dr. Still-Brooks moved to approve the externship funds of \$500 for Lindsay Brunet, St. Georges University; Dr. Johnson seconded the motion. The motion passed.**
4. **Dr. Goplen moved to approve adding Dr. Joe Smith and Ann Dipastina to the CE committee; Dr. Duemler seconded. The motion passed.**
5. **Dr. Duemler moved to nominate Dr. William Brockway for an honorary lifetime membership; Dr. Kutzler seconded. The motion passed.**
6. **Dr. Kutzler moved to adjourn; Dr. Higgins seconded the motion. The motion passed.**

### Meeting Minutes Summary

- The management report was submitted electronically in the consent agenda.
- Region 1: Dr. Jon Higgins reported that lambing is done and there are fewer shows.
- Region 2: Dr. Beth Johnson that they are starting state-sponsored livestock shows starting today and have them every day the month of July. Will have a state fair but just youth show. Saturday is first lamb show. First goat show is next Tuesday.
- Region 3: Dr. Chris Duemler reported that fairs are starting up but doing things in different ways like one species each day to get trailers in and out. A member asked about lifetime membership after reading the e-newsletter.
- Region 4: Dr. Michelle Kutzler reported that all state fairs were canceled early on, some county fairs are pushed to later. Some are doing a virtual fair and auction. Meeting with Oregon Sheep Commission. Alaskan refuge trying to ban pack llamas. AASRP policy statement was helpful.
- Continuing Education Committee: Dr. Still-Brooks reported that there have been two webinars which were well-attended. We have a webinar outline planned for 2021, but are still seeking suggestions for speakers or topics. Next webinar is July 15 on nutrition basics with Dr. Van Saun, then August 12th forage analysis with Dr. Van Saun, then Sept. 19th with Dr. Ehrhardt on rotational grazing and forage management. Two individuals interested in working with the CE Committee are Joe Smith and Ann DiPastina. Maybe AASRP can put together some interactive videos and best practices. NAVC has zero cuts to AASRP presentations. For this summer's AVMA they reduced large animal programs. They will be rolled over to next year. AABP will be a hybrid conference.
- Student Education Committee: Lindsay Brunet was asked that she resubmit her application to list the veterinarian she would be working under for the experience. Dr. Wolf recommended \$500 amount on resubmission.

- AVMA Delegate - Dr. Mongini reported on the comment period for the FDA compounding GFI #256. AABP has a working group to submit poison antidote nominations for cattle and small ruminants. AASRP can develop comments to the GFI itself separately. Dr. Kutzler and Dr. Higgins will develop the comments.
- AASRP signed on to the dog health import legislation letter of support.
- The Annual Membership Meeting will be held virtually prior to the August 12th webinar.
- The revised tail docking policy motion to approve was withdrawn by Dr. Kutzler. An additional revision was presented. Dr. Kutzler made a motion to approve the new revision. The document will be sent to the board for discussion and then voted upon after a second is received.
- AABP will have a hybrid conference. AASRP will have a booth in the trade show, offer a pre-conference seminar on laparoscopic AI in goats, and the Open Mic Story night event.

The meeting was adjourned at 10:00 pm EDT.

## AASRP Annual Membership Meeting August 12th

Historically the AASRP Annual Membership Meeting is held prior to the AASRP scientific CE sessions at the AVMA convention. Due to the cancellation of the in-person AVMA convention, the AASRP board will offer the Annual Membership Meeting virtually. On Wednesday August 12th, Dr. Bob Van Saun will present a webinar titled "Interpretation and Application of Feed Analysis for Small Ruminant Diets". Prior to the webinar, at 11:30 am Eastern, AASRP leadership will present the membership meeting. Please consider logging on to the webinar early to hear an update from your AASRP leaders about the organization. You do not need to pre-register for the membership meeting or webinar. Simply log on using the below information:

Wed, Aug 12, 2020 11:30 AM - 1:00 PM (EDT)

Please join my meeting from your computer, tablet or smartphone.

<https://global.gotomeeting.com/join/691313597>

You can also dial in using your phone.

United States: +1 (646) 749-3117 Access Code: 691-313-597

More phone numbers: Canada: +1 (647) 497-9373

## Regional Director Election Results

Dr. Jon Higgins was elected by acclamation to serve a second term as Region 1 Director.

Dr. Virginia Fajt was elected to serve a first term as Region 3 Director.

Thank you to Dr. Yalonda Burton for giving AASRP the honor of placing her name on the ballot for Region 3. We would also like to thank Dr. Chris Duemler for his service as the outgoing Region 3 director.

If you are interested in AASRP volunteer opportunities, please contact your region director!

## Congratulations to AASRP Honorary Life Members

According to the AASRP bylaws, Honorary Life Members shall be veterinarians who have reached the age of 70 or more years and have been a member of AASRP for a

minimum of 30 years. Honorary Life Members will receive this status by nomination and final approval by the Board of Directors.

Honorary Life Members are entitled to full dues paying privileges but may not hold office and will not be required to pay annual dues. If you qualify for Honorary Life Membership, please send a request for nomination to your regional director for approval by the board.

The following members have been approved by the board for Honorary Life membership:

**Dr. Marie Bulgin, Caldwell, ID**  
**Dr. William Brockway, Tracy, MN**

Congratulations to both AASRP members. Thank you for your long-term membership in our organization.

## AASRP ANNUAL CONVENTION

The AABP Board of Directors recently met to review our options for our 53rd Annual Conference. Many options were discussed by the Board, with thoughtful deliberation regarding member services, health and safety precautions, and financial impact to the organization. In addition, the AABP staff have worked diligently the past several months to review the logistics and implications of each option the Board considered for our annual conference.

Ultimately, we have decided to have a “hybrid” 2020 53rd AABP Annual Conference in Louisville, Ky., September 24-26. There will be two types of registration offered. An in-person registration will be available for those members who wish to attend the conference in-person. In addition, we will offer a virtual conference registration for those members who do not wish to attend in-person but want to participate in the conference from their home or office. The virtual conference will have a live stream of all the sessions that are offered at the conference (excludes pre-conference seminars). Virtual attendees will also be able to participate virtually using the Slido app to take part in polls or ask speaker questions. Just like previous years, the AASRP sessions from the conference will be recorded for all members to view at a later date on the AASRP CE portal or BCI Mobile Conference App.

The in-person conference will certainly look different than previous years. We will follow all recommended safety precautions from the city, state, hotel, and convention center. Social distancing measures will be implemented with theater seating of a minimum 6-foot of distance between chairs. Meals will either be served or pre-packaged and coffee breaks will be served as well. Masks are encouraged, but not required, for attendees. Sanitation and cleaning protocols will be implemented by the hotel and convention center staff. There will likely be schedule changes, speakers who cannot attend and longer lines for food service. We ask that you please use patience and understanding as we try to offer a conference and implement these safety measures. We also ask that in-person attendees implement health and safety measures on their own. Please remember to respect social distancing guidelines, discourage handshaking and hugs, do not attend if you are feeling ill or in a high-risk category for COVID-19 complications, and consider wearing a face mask.

The AABP leadership believes that having a hybrid conference offers the best member service. Those who want to attend an in-person conference will have the opportunity to do so and those who do not wish to attend can participate virtually. I would like to thank the leadership of our Board under AABP President Dr. Calvin Booker in making this decision, as well as the work of Dr. Carie Telgen and Dr. Pat Gorden and their program committee (Dr. Kelly Still-Brooks from AASRP) in planning this conference.

Registration for the conference is open from the link on the AASRP website on the Meeting menu: <http://aasrp.org/meeting/default.asp>. Members can also secure hotel reservations in the AABP housing block. Please use the AABP hotel block to help us offset the financial risk of the conference. Virtual conference registration is also available at the registration link. Pre-registration closes August 28th.

## STUDENT EXTERNSHIP REPORT - Twin Pines Animal Hospital in Bothwell, WA

My name is Laura Jackson and I am a fourth year student at North Carolina State University College of Veterinary Medicine. I am interested in food animal medicine and have a passion for small ruminants. My love for goats, sheep, and camelids started at a young age as a member of a local 4H livestock club. While a member, I showed goats and after finishing continued to raise and breed them for fifteen years. It was through 4H as well as some time spent in Africa that I realized the importance of food animal production in human health. This was the driving force for me to go to veterinary school and pursue a career in ruminant medicine.

For my small ruminant rotation, I visited Twin Pines Animal Hospital in Bothell, WA. Here, I spent time with Dr. Elizabeth Hardy and had an amazing time there. We saw a variety of cases ranging from chicken examinations to ewe dystocias. Bothell is a unique area of the country nestled right outside Seattle where people can have farm animals while still living in a somewhat residential area. This made for a wonderful educational opportunity where I learned a lot about both small ruminant medicine and husbandry. Within the first couple of days of the rotation, I was drawing blood and rechecking some healing abscesses on goats. We evaluated a doe for mastitis and assessed another for lameness. I improved my skills on castrations and learned about the Henderson tool for older bucks which is amazing!

I was able to ultrasound ewes and does to check for pregnancy and even assist with a ewe dystocia. I also learned how to perform a llama physical exam and improved my understanding of their behavior. Even in the downtime I was able to refresh my memory on many disease processes and have several topic discussions with Dr. Hardy. Dr. Hardy was a phenomenal mentor and taught me so much about being a good veterinarian through proper client communication. They have a wonderful practice and I would recommend them to anyone who has an interest in learning about small ruminant medicine. Thank you, Dr. Hardy!

Laura Jackson, North Carolina State University, College of Veterinary Medicine






## ANNOUNCEMENTS

The **2020 virtual Therio Conference** will be held July 22-25, 2020. The website is <https://www.therio.org/page/2020TherioConf> and students can register for free. The Production Animal Track on Saturday July 25th includes talks by Jason Coe on Physiology and reproductive techniques for the whitetail doe, and Advanced reproduction and semen collection in whitetail deer. Dr. Ahmed Tibary will address Urogenital surgery in camelids.

The **AASRP Annual Membership Meeting** will be held at 11:30 am on Wednesday August 12th, prior to **Dr. Van Saun's webinar** on Interpretation and Application of Feed Analysis for Small Ruminant Diets. For directions on signing in to the meeting and webinar, see details on page 6 of this newsletter.

**AVMA will host a virtual convention** August 20-22, 2020. The website is <https://www.avma.org/events/avma-convention> but  has little information. The previously scheduled speaker for the small ruminant track, Dr. Stacey Byers, is postponing her presentations until 2021.

Details for the combined **AABP/AASRP convention in Louisville, KY**, September 24-26, 2020 are provided on page 7 of this newsletter. The convention will be in a hybrid format, with virtual attendance possible for those who cannot attend in person.

Mark your calendars for the fantastic **AASRP webinars!** These free, RACE approved CE webinars on topics you requested will be on Wednesdays at 12pm EDT. Check the website, Facebook and Bugles and Orgles e-newsletter for links and additional information. You do not need to pre-register to attend the webinar. Simply logon from the website or link and sign-in using your first and last name to have a CE certificate assigned to you in the AASRP database! In addition to the webinars listed on page 4 of this newsletter, there are two more already planned:

Feeding the little ones: From colostrum to weaning Bob Van Saun 1/13/2021  
Spinal CSF Tanya Applegate 2/10/2021

The **10th International Sheep Veterinary Congress**, originally scheduled for September 2021 in Seville Spain, is now postponed until September 19 to 23, **2022** due to COVID reasons, including the need to reschedule the Buiatrics conference in Spain from 2020 to 2021. The website for the congress is <http://isvc2022.com/> The 8 day technical preconference tour, which will visit many farms between Barcelona and Seville, will be a highlight of the conference. The ISVC preconference tours are a marvelous way to see a country in the company of small ruminant veterinarians from around the world. You will arrive at the congress with many new friends and much shared knowledge.

## BOOKS, BULLETINS AND COMPUTER WEBSITES

**Goat Medicine and Surgery**, by David Harwood and Karin Mueller, ISBN 9780367893422, was published March 5, 2020 by CRC Press. It has 392 Pages and 350 color Illustrations. The book is available in Kindle, hardcover, and paperback versions from [amazon.com](https://www.amazon.com) and elsewhere.

**Capturing Sunlight, Book 1: Skills & Ideas for Intensive Grazing, Sustainable Pastures, Healthy Soils, & Grassfed Livestock** is a revised collection of 62 articles written by Wood Lane for The Shepherd magazine and also for the SID Sheep Production Handbook. The book is about forages, grazing, soil

health, pasture renovation, forage growth, and forage nutritional value. There's a section devoted to nuts-and-bolts lessons on intensive grazing and pasture management, and also one chapter on the nutrition of dinosaurs. It's available on Amazon and lots of other places, both as a trade paperback and on Kindle. Dr. Lane's website <https://www.woodylane.com/forages1-book/> has more information, as well as other books, including "From the Feed Trough".

**Spread of CWD, Chronic wasting disease.** The JAVMA news in the April 1, 2020 issue (v 256 no.7) provides a map of the current distribution of CWD in free-ranging populations across the United States and Canada as well as of infected captive facilities that have been depopulated. In some areas, 40% of wild cervids are infected with CWD and depopulation through hunting and government sharpshooters is being attempted. The risk of transfer to humans is unknown, but certainly the potential for human exposure is increasing.

## IN THE NEWS - RESEARCH ON CAMELID ANTIBODIES AGAINST THE VIRUS CAUSING COVID 19

Scientists say llama antibodies could  defeat COVID 19.

Recent news reports [<https://futurism.com/llama-antibodies-covid>] [<https://www.reuters.com/video/watch/idPiAh?now=true>] have described how antibodies from a llama or alpaca immunized against the highly conserved spike protein of the coronaviruses that cause SARS, MERS, and COVID 19 will neutralize the viruses. Binding of this antibody prevents viral attachment and entry into the cell, thus the antibodies could be used for immediate protection or to treat severely affected patients. The knowledge gained from studying these camelid antibodies may also be useful in vaccine development. The actual research has been reported by Wrapp et al. in Cell 181:1004-1015, 2020 "Structural basis for potent neutralization of betacoronaviruses by single-domain camelid antibodies"



## PRACTICE TIP - Clostridium perfringens Antitoxin Unavailable

In reference to the Clostratox Ultra C product, the manufacturer (Elanco) announced last year that they were discontinuing the product; anything still in the distribution process is all that will be available. This explains why none of the regular suppliers have any for sale.

Jess Powell, Mount Horeb, WI



## AASRP-L QUESTION AND ANSWER - Gynecomastia in a Buck

Question: I'm wondering if anyone has come across gynecomastia in male intact goats (bucks) that is not associated with a pituitary tumor? Does a hereditary male gynecomastia in goats exist, as it does in humans?

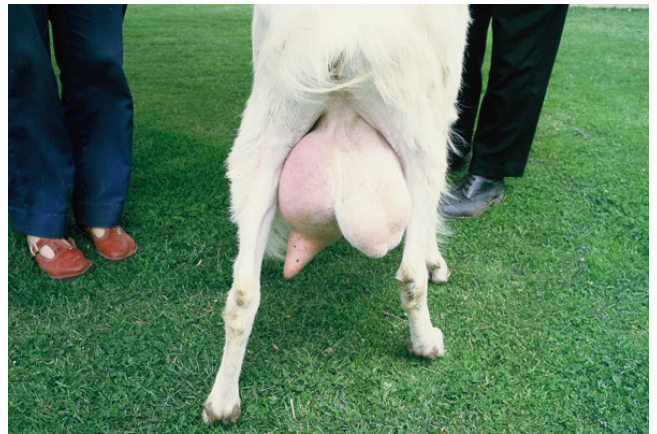
Answer 1: I personally have not seen it associated with a pituitary tumour but it isn't rare so perhaps some cases are. It is my understanding that there is a hormonal imbalance in sex steroid hormones (estrogens and androgens) (Gamboa et al, 2013: Cytogenetic, hormonal, milk and semen studies in a fertile male goat with gynecomastia. *Actas Iberoamericanas de Conservación Animal*). I know it has been suggested that offspring might be more likely to be precocious milkers but I'm not sure of the evidence other than anecdotal. There is also an increased chance of developing into mammary adenocarcinoma so I guess all this begs the question whether the buck should continue to be used for breeding or should be culled. Others with long-term experience with some of these bucks should weigh in but it doesn't look like a preferred trait to me.

Paula Menzies, retired from the University of Guelph

Answer 2: Gynecomastia does occur commonly in many breeds of dairy goats. Over the years I have seen this in my own Toggenburgs and have observed in Nubians, Saanens, Alpines, Oberhasli and LaMancha bucks. Anecdotally the condition is suggested to occur in higher producing lines of animals. Personally I have not observed an association with precocious lactation in juvenile (prepubertal) females. This condition is presumed to be associated with increased prolactin, but in contrast to the human I am not aware of any association with pituitary tumors. This is usually an incidental finding; they usually show seasonal changes with the condition, many times appearing reduced or inactive during the breeding season; and whether the gland is active may vary from year to year. This is often bilateral, but may be unilateral. Especially large glands would raise concern about potential impairment of thermoregulation of the testis, but affected bucks usually have normal fertility. One should be mindful that all bucks are at risk of mammary neoplasia, mastitis and injury, so they should be routinely monitored. I am not aware of discrimination against this during judging or in most breeding programs unless of such extreme size so as to result in significant risk of injury.

Joan Dean Rowe, University of California Davis

Answer 3: Greetings from lock-down Britain! Over the years we have had a number of males with gynecomastia in our own herd and I have seen others in clients' herds. So far as I remember all the goats I saw had unilateral development, although it can be bilateral. Our males were from high-yielding families, with the milkers giving around 2500 litres in a 365 day lactation. All were British Saanens, Saanens or white grade goats. The females in the families were often precocious milkers, coming into milk before being mated, and were capable of extended long lactations over several years without being remated, a trait which is now being selected for in our commercial herds. The condition is definitely heritable and so far as I am aware none had a pituitary tumour. Fertility is not affected unless the udder becomes large enough to raise the temperature of the testicles. Variable amounts of "milk" are produced - often a very watery secretion rather than anything recognizable as milk. In most males dietary management will control mammary development without milking which is not a pleasant task for the goat or the milker, especially as teat orifices are often very small. However, the animals need careful monitoring as acute or peracute mastitis is a possibility.



Mastectomy is an option, although usually only necessary in cases of ulcerating mastitis. A German Toggenburg goat, which was karyotyped, had no cytogenetic abnormalities and normal plasma concentrations of testosterone and oestradiol. I have attached a photograph of a male that presented at the University of Cambridge some years ago. The photo is courtesy of Dr. Peter Jackson.

## AASRP-L QUESTION AND ANSWER - Rectal Prolapse Repair

Question: I have a question as to how others are treating rectal prolapses. I have injected with lugol's iodine, and purse stringed with 2-0, 0, or 1/8 umbilical tape and they all seem to pull out. I've been closing the purse string down to 1 finger. Any suggestions? Should I not do both techniques at the same time? Is there something better?

Answer 1: In my hands, epidural and purse string suture usually works fine. I think I aim for more like 2 fingers than 1. I usually use 3/8" umbilical tape, although 1/8" would probably work fine. I don't like the idea of using suture material - sharper and more likely to tear tissue.

Rex Crawford, Orangeville, ON, Canada

Answer 2: Each case is different so there are multiple ways to fix them:

- Eat them
- Purse string
- Purse string with lidocaine
- Purse string with alcohol
- Lugols
- Complete resection

Prolapse ring (usually just thought about for hogs but works well in sheep). I personally use the ring technique most of the time anymore as it is quick and I can show the producer how to do it. A practice tip is to slip the rubber band over the rectum and put the ring in while holding it with a forceps (they are slippery). Use a ring block (at the juncture of prolapse and the skin/anus) or just infiltrate especially at dorsal area where dorsal rectal artery, vein and nerve are) or epidural block.

Find source of problem: respiratory disease and coughing? Diarrhea/straining from coccidiosis? Short tail dock? Crowding at feed bunk? Etc.

Success rate about the same for all, 50-75% except the first treatment. It works 100% of the time.

Pursestrings that rip out are usually from lots of straining and delicate rectums! Keep on pain meds and treat cause.

Cliff Shipley, emeritus University of Illinois

Answer 3: We had some at one of our dairies that were occurring due to barn design. The does had to stand with their feet up on a ledge to reach the feed bunk and we were seeing prolapses in the pens with less manure pack and the shorter doelings. Another cause could be crowding or shoving at the feeders.

Christine Moebus, Sturgeon Falls, ON, Canada

Answer 4: (from previous discussions and reported in detail in Wool & Wattles 33.2): I have used a method for rectal prolapses that I dreamed up about 10 years ago. I make a small prolapse paddle shape device out of a coat hanger, covered with plastic tubing. The tongue, I make about as long as my index finger and make little loops on the bare ends so I can tie umbilical tape to them and run a suture from the loop on each side to a spot into the wool lateral to the anus. It looks like a narrow U with phalanges at the top. I place it just like a prolapse paddle in a vaginal prolapse, only the little tongue goes in the anus (of course). They can still poop and the stitches aren't as likely to tear out when placed in the tougher skin past the perineal area. I find that area around the anus and vagina doesn't hold sutures worth a darn if they start straining. I don't think it is as painful either.

Marie Bulgin, emerita, Caldwell, ID

## **AASRP-L QUESTION AND ANSWER – Writing a VFD for a Minor Species**

Question: I have a client with a herd of meat goats. He is wanting me to write a VFD (Veterinary Feed Directive) for respiratory issues in weanling goats, for CTC (chlortetracycline). My understanding from lectures on it in the past is that it is illegal use but "of least concern". So, they will not worry about enforcing it. That's what I got from talking to a regional USDA veterinarian as well. The client has it in his mind it is just like normal minor species extra-label use. Any insight? I am surmising that people are writing them still. What concerns do you have or any extra paperwork you do to try to help cover yourself?

Answer 1: I have written a VFD for doelings previously, and felt confident doing so. My personal opinion is that as long as I can evidence the need for treatment, and justify it based on a lack of on-label alternatives I will do so. I wouldn't write one just because the client is requesting it. I have refused to write them previously for spurious use such as AS700 for preventing Q-fever abortions (and the client still calls me...)

I use globalvetlink and it certainly lets you write a script for minor species. That clearly isn't going to be a good argument legally, but I do have some confidence that if the FDA had outright banned such things it wouldn't be an option. I would add extensive residue times though.

Andrew Mason, Cashton WI

Answer 2: Do you believe he needs antimicrobials throughout the group/herd? It's an important first question in the VFD process. It is illegal to write the VFD, but there is a "look the other way" regarding minor species. The VFD softwares do have a place where you can select minor species. That said, there really is no decent evidence that CTC in feed does anything for respiratory or reproductive diseases in small ruminants. Clients just want to give antibiotics.

That's the beauty of the VFD - we decide, not them. At the end of the day, respiratory disease is about management, so I personally do not write VFDs. If you do, there is a mechanism for that in the various VFD softwares available and that is the best option for managing the paper trail.

Meredyth Jones, Oklahoma State

Answer 3: They are legal, it's how you use it and wording. Very complicated. I routinely write for deer with issues for herd but..

Water delivery is better and you don't need a VFD, just a script. I usually add electrolytes/vitamins and flavoring agent.

What bug(s) are you treating and why?

Can you run them all in and give an injectable antibiotic? Better.

It would really help if you gave us more signalment: how many, how much do they weigh or how old they are, nutrition, etc..

Do some diagnostic work if possible (only thing cheaper than a goat client is a sheep client).

If you do treat with CTC in water or feed, try to make sure you are getting 10 mg/lb of body weight a day into them. That's a therapeutic level and will actually still work on a few organisms in a few situations.

Cliff Shipley, Emeritus, University of Illinois

Answer 4: Just to provide additional guidance, the FDA has published how to write VFDs for extralabel uses in minor species in a way that will get you into the least trouble - to be clear, the use of VFDs in an extralabel manner is still illegal, but there are ways to make it of lower regulatory priority:

<https://www.fda.gov/regulatory-information/search-fda-guidance-documents/cpg-sec-615115-extralabel-use-medicated-feeds-minor-species> You can download the Compliance Policy Guide and its non-binding recommendations.

This is not to take away from the discussion about medical necessity!

Virginia R. Fajt, Texas A&M University

## **AASRP-L QUESTION AND ANSWER - Masses on Reindeer Antlers – Perruque Antlers**

Question: I had a colleague run this case last me - Hoping for some insight! Presumptive antler fibromas. Two castrated males in this herd up in Alaska are affected. The 9 year old male was debulked last year and there's been no regrowth. The same therapy was attempted in this 8 year old and the growth after 6-8 months is fairly considerable. A robust blood supply was noted at the time of the procedure. I was having trouble finding some good reference material for this type of case - are they similar to other species where they are typically self limiting? The signalment throws me a bit- I would have expected more issues in a young individual with an immature immune system. What should they be looking at for treatment? Continued debulking as needed? Autologous vaccine?



Answer: You might try treating with testosterone which will cause antlers to harden. When the testosterone level drops, the antlers will drop. Growth will start again but you can retreat as needed; once a year usually does it. Perruque antlers are common in castrated cervids. Someone is already thinking of a dose question but in reality, I use human source and pretend they are named Rudolf. If it works you'll know. Can always retreat with a higher dose. OR, just cut 'em off; they'll regrow but..

If tumors ignore this, but I'm betting on perruque antlers.

Cliff Shipley, Emeritus, University of Illinois

Editorial comment: There is an excellent article from In Practice, vol 38:513-519, 2016 on "Managing Antler Problems in Deer" that has excellent photos of the perruque antler problem and a description of the surgical removal of these antlers. It seems to be available on the web if you search the title. The article was reviewed in Wool & Wattles 45.1:14, 2017, available to members at the AASRP website.

## LAMA\_MED QUESTION AND ANSWER – Cria Vaccination Protocol

Question: I'm wondering if a "standard" protocol for vaccinating crias with CDT vaccine has been developed. A client recently showed me the discussion from an alpaca group and the answers were all over the place in terms of timing. I know from attending various camelid conferences over the years, that this has been a source of debate. Wondering if the debate has been settled. It seems like many camelid farms don't even do CDT in their adult animals any more.

Answer 1: You are right that recommendations vary on starting time. I start crias on the CDT vaccine at 3 months of age and booster one month later, then annually. This is assuming the dam was vaccinated. If dam was not vaccinated, I would consider starting earlier. As far as not vaccinating the older animals yearly -- when clients ask about the

need for yearly vaccines, I tell them about the presentation at the 2019 Camelid conference. Two Austrian veterinarians presented some case studies. They have videos of 2 camelids with tetanus. Camelids are getting more popular in Austria but their regulations prohibit use of vaccines off label, so they do not vaccinate there. First time I had seen tetanus in a camelid - but they do get it. I found it odd that they could use antibiotics to treat the disease in camelids, but not the vaccine.

Then I tell them about the boy in Oregon who developed tetanus. <https://www.livescience.com/64948-tetanus-unvaccinated-boy.html>. You can read the article, but the boy was injured on a farm, parents stitched up the wound and went on with life. Turns out they were anti-vaxxers and the child developed tetanus. First case in Oregon in 30 years in a human---and \$800,000.00 later, the child is back to normal.

Most clients make the connection and we vaccinate. I have never seen any work on duration of immunity with tetanus vaccine in camelids, so don't know that answer. Vaccine is cheap and I have yet to recognize adverse effects from the vaccine. (knock on wood) Not sure if it was on this discussion or in the AASRP discussion group but there was some question on duration of immunity on the C and D portion of the vaccine and some doubted that it gave one year duration of immunity. Yearly CDT is my recommendation.

Patrick Long, Corvallis, Oregon

Answer 2: Yes, the recommendations are all over the place. I do exactly what Patrick does - if the dam was covered, I give at one month old and booster one month later, then vaccinate yearly. If no maternal coverage and a reason to vaccinate a cria earlier, I will do so. I have seen tetanus in a cria who ripped open her leg on some loose cattle panel, broke a tibia and was not vaccinated. She recovered in the dark, in a Thomas Schroeder splint, and although it gave the owner many grey hairs, they are both healthy now.

I have been a member of some of those very active alpaca Facebook groups and was lambasted for reminding the group members that while coverage for tetanus is extremely important in these species, coverage for *Clostridium perfringens* shouldn't be overlooked as trivial. Apparently this was upsetting news, as many people use the "it's only useful for tetanus and we don't have rusty nails laying around" argument as a reason not to vaccinate for CD/T. I have had a case of sudden death (peracute with alpaca being normal to having a 107 fever and dying within the 30 minutes it took for me to arrive) in a very expensive show animal that was not vaccinated, and the postmortem lesions were very consistent with what I have seen in clostridial enteritis in beef cattle, so I submitted to the diagnostic lab and they confirmed *Clostridium perfringens*. The arguments were made that the cria had a "freak accident," and that the hembra was one loss on a farm of 50, however when CD/T is a couple bucks each, I can't justify those arguments.

Erin Masur, Ross University



Answer 3: I'm also with Pat on annual revaccination. The Austrian tetanus cases were extraordinary! We have 7, 8 and 10 way vaccines over here in the United Kingdom as well as a CDT equivalent so our options are endless!!! Lately I've been going for 10 way since it's the only one that covers the Type A *Clostridium perfringens* (this is probably the clostridial problem I've seen the most of) and I've started preferring pre-partum vaccines and then cria vaccines to start at 3 months. If dam is not vaccinated pre-partum, then I start at 1 month, then boost 4-6 weeks later.

Claire E Whitehead, University of Liverpool

## PRACTICE TIP – Alfaxalone vs Propofol

We have been notified that propofol will be extremely limited for Veterinary Medicine for the near term as a result of the high demand for human COVID cases (I think for ventilator patient management). Our pharmacist is getting alfaxalone as a substitute. Although you may not be familiar with this drug, it has been studied in horses, cattle, goats, pigs, and alpacas. If you have propofol, use it wisely. If you need an alternative, check out the literature. I have heard it may not be great in donkeys - rough recoveries. There is a paper on its use in alpacas (and reviewing its use in other species) in *Veterinary Anaesthesia and Analgesia*, 2015, 42, 72–82 doi:10.1111/vaa.12170

Excellent intubation could be achieved with a mean of 2.1 mg/kg IV in alpacas, but tremors, paddling, rolling, seizure-like activity and thrashing characterized recovery from alfaxalone. Oxygen supplementation and mechanical ventilation were required. It is not recommended to give this drug alone in an unpremedicated alpaca.

David Anderson, University of Kentucky

## ABSTRACTS

### PHARMACOKINETIC PARAMETERS AND ESTIMATED MILK WITHDRAWAL INTERVALS FOR DOMESTIC GOATS (*CAPRA AEGAGRUS HIRCUS*) AFTER ADMINISTRATION OF SINGLE AND MULTIPLE INTRAVENOUS AND SUBCUTANEOUS DOSES OF FLUNIXIN MEGLUMINE

The data suggest milk withdrawal intervals of 36, 48, and 60 hours after single dose IV, single dose SC, and multidose SC.

The purpose of this research from the University of California-Davis was to determine the pharmacokinetics of flunixin meglumine in dairy goats and milk depletions profiles after intravenous and subcutaneous administration. A dose of 1.1 mg/kg was used, given once IV or SC or 6 times at 12 hour intervals subcutaneously behind the elbow. Both flunixin and its metabolite 5-hydroxy flunixin were measured using both the standard ultra-performance liquid chromatography with mass spectrometric detection method and a commercial ELISA kit. The two testing methods gave statistically equivalent results. Testing was done in 8 nonlactating pregnant does, 20 nulliparous does, and 8 lactating does of various dairy breeds. IV and SC administration were compared in the same does after a 14 day washout period. The lactating does averaged 111 days in milk at the beginning of their study. Sub-cutaneous reactions were minor and did not persist beyond 3 days for a single injection and 14 days for multiple doses.



Absorption was rapid after SC administration as the average time to peak plasma concentration was 0.9 hours. Depending on the dosing protocol, an adequate milk withdrawal would be 36 to 60 hours, although the 36 hours for IV administration might need to be increased because of AMDUCA requirements for an extended withdrawal after extralabel drug use.

Smith JS et al.  
*Frontiers Vet v. 7, art 213, 2020*  
doi: 10.3389/fvets.2020.00213

## PATHOLOGY IN PRACTICE (MENINGOMYELITIS OF THE SPINAL CORD)

The lamb presumably had an ascending infection from an excessively short tail dock.

A 2-month-old Hampshire wether from a farm that produced club lambs for show purposes developed pelvic limb ataxia 30 days after birth that progressed to paraplegia. It was the second lamb on the farm that year to develop this problem. It was euthanized and necropsy revealed hydronephrosis and hydronephrosis. There was a subdural accumulation of thick yellow exudate from the L6 vertebra caudally to the cranial aspect of the sacrum and from the level of L5 to S1 vertebrae creamy granular material effaced the parenchyma of the spinal cord. Intralesional bacteria were seen on histology and *Actinomyces hyovaginalis* was cultured from the exudate. Although vertebral osteomyelitis was not found, the tail had been docked short, at the level of the fourth caudal vertebra, a common practice to make show lambs look blockier. In addition to predisposing to rectal prolapses, short tail docks may give bacteria direct access to the central nervous system. The AVMA recommended site for tail docking is at the distal end of the caudal tail fold.

Marinoff L et al.  
*JAVMA 256:63-65, 2020*

## CEREBROCORTICAL NECROSIS IN RUMINANTS

Cases peak in lambs at four months and at seven months of age, possibly associated with altered rumen flora at weaning.



This surveillance focus article from the United Kingdom reviews the neurologic disease known there as cerebrocortical necrosis and more commonly called polioencephalomalacia in the United States. It is most commonly ascribed to a thiamine deficiency, which might be the result of overgrowth of thiaminase-producing bacteria in the rumen, ingestion of feed rich in thiaminase, failure of thiamine absorption, or excess excretion of thiamine in the feces. Sulfur toxicosis (could be caused by consumption of cruciferous plants) is sometimes involved; sulfur cleaves thiamine but also may cause reduction of thiamine production in the rumen or reduce the availability of thiamine phosphate esters critical for cerebral metabolism. Typical clinical signs are hyperesthesia, central blindness, and a star-gazing posture. Facial twitching, cerebellar tremors, nystagmus and opisthotonos are also commonly seen. At necropsy there may be subtle cerebrocortical swelling and flattening of gyri, sometimes with cerebellar coning (as swelling of the brain pushes the cerebellum through the foramen magnum). The brain may appear yellowish, and autofluorescence under ultraviolet light helps to distinguish this form of cerebrocortical necrosis from that caused by lead poisoning or water deprivation/salt toxicosis. Prompt treatment with thiamine for three days often results in a rapid and complete recovery. In the UK, cases are most commonly seen in June through August, when lambs are around four to seven months old.

Martelli F et al.  
Vet Record 184:89-90, 2019



## LASER ABLATION AND MANAGEMENT OF A RETROPHARYNGEAL ABSCESS CAUSED BY *CORYNEBACTERIUM PSEUDOTUBERCULOSIS* IN A RAM

The abscess was drained into the pharynx under endoscopic guidance.

A yearling 125 kg crossbred ram was found in respiratory distress with a respiratory rate of 160 breaths per minute and severe stridor auscultated over the larynx. Lateral cervical radiographs revealed a 7.5 cm x 3.7 cm retropharyngeal mass severely compressing the pharynx and almost completely occluding the trachea. The ram was stabilized by means of a temporary tracheostomy tube inserted under local anesthesia through an incision in the annular ligament between the eighth and ninth tracheal rings in the ventral neck. Ultrasonography of the thorax revealed no abnormalities and a synergistic hemolysis inhibition test validated for *Corynebacterium pseudotuberculosis* infection in horses was negative at 1:8.

Cervical computed tomography for surgical planning demonstrated a large abscess of the left retropharyngeal lymph node with the left internal carotid artery coursing around the avascular mass. The ram was initially treated with flunixin meglumine IV every 12 hours (later changed to oral meloxicam at 1 mg/kg daily), topical diclofenac at the swollen tracheostomy site and subcutaneous florfenicol at 40 mg/kg every 4 days. On the 9th day a large blood clot obstructed the tracheostomy tube but its removal alleviated acute respiratory distress. After 13 days the animal was anesthetized and a 10 mm endotracheal tube was passed through the tracheostomy site. A one meter flexible endoscope was passed through the right nasal passage and used to introduce a 600-micron bare diode laser with an output of 12 W. Multiple punctate incisions were made in the rostral ventral aspect of the mass and these incisions were connected by blunt dissection using laparoscopic grasping forceps through the endoscope. This effectively opened the abscess which drained into the pharynx and copious amounts of pus were flushed out the nose with the head positioned lower than the neck. The pus yielded *C. pseudotuberculosis* on culture, susceptible to florfenicol, and this antibiotic was continued for a total of 7 injections over 28 days. Bone marrow depression from florfenicol toxicity was not noted. The tracheostomy tube was removed 6 days after surgery and the ram discharged. The owner reported that the ram remained healthy and bred successfully in the subsequent breeding season. [An alternative method of drainage of a retropharyngeal abscess that has been described is by marsupialization of the abscess to the skin adjacent to the larynx so that it can be safely lanced - editor]

Copeland A et al.  
Vet Record Case Report. <https://vetrecordcasereports.bmj.com/content/8/2/e001010>

## **MYCOPLASMA OVIS INFECTION IN DOMESTIC SHEEP (*OVIS ARIES*) IN THE UNITED STATES: PREVALENCE, DISTRIBUTION, ASSOCIATED RISK FACTORS, AND ASSOCIATED OUTCOMES**

Reuse of needles for vaccination might increase the within flock prevalence.

Sera banked from the 2001 and 2011 NAHMS sheep studies were analyzed retrospectively for the presence of *Mycoplasma ovis* by PCR testing. This hemotropic bacterium, previously called *Eperythrozoon ovis*, is believed to be spread by biting external parasites, including ticks, mosquitoes, lice and stable flies. Infection has been associated with anemia, jaundice, and illthrift, especially in lambs or stressed or pregnant sheep but the organism also can be found in chronically infected clinically normal sheep. Decreasing stress and providing good nutrition are believed to help animals recover from clinical infection; tetracycline treatment may help the individual animal but does not clear the infection. Samples were obtained from 21,369 ewes in 2001 and 13,128 ewes in 2011. These samples came

from 22 states and represented 84% (2001) and 72% (2011) of the US sheep inventory. There might have been some bias towards better managed farms as participation in the NAHMS study was voluntary. A total of 19,607 samples were tested for *M. ovis*, which yielded a 73% flock presence and a 23% within-flock presence. Flock presence was higher in operations that administered any vaccines. Operations that reused needles had a higher within-flock prevalence. Operations that cogenerated with other flocks and also reported any abortions had a significantly higher within-flock prevalence. It is possible that severe anemia caused by the infection lowered uterine blood flow and oxygen tension, predisposing to abortion. Because anemia, submandibular edema (bottlejaw) and weight loss can occur, all suggestive of gastrointestinal parasitism, *Mycoplasma ovis* infection is probably under-recognized by sheep farmers and veterinarians. Also, hemolytic anemia, hemoglobinemia and jaundice, even death can occur and could be mistaken for copper toxicosis.

Urie, NJ et al.

Prevent Vet Med <https://doi.org/10.1016/j.prevetmed.2019.104750>

## **THERIOGEOLOGY QUESTION OF THE MONTH - SERTOLI CELL TUMOR**

Neoplasia was suspected based on the ultrasound exam.

A 9-year-old sexually intact male alpaca was examined for enlargement of the right testis, discovered at shearing. The animal was systemically healthy (which helped to rule down orchitis) but the right testis was enlarged and turgid compared to the left. Ultrasound revealed diffuse multifocal hyperechoic foci and several anechoic pockets in the parenchyma of the abnormal testis. The differential list included seminoma (the most commonly reported testicular neoplasm in camelids), spermatocoele, Sertolic cell tumor, Leydig cell tumor and teratoma. As the animal was not being used for breeding, bilateral castration was elected. The alpaca was anesthetized with ketamine HCl (6.0 mg/kg), butorphanol tartrate (0.01 mg/kg), xylazine HCl (0.5 mg/kg) and midazolam HCl (0.2 mg/kg), all administered IM. Thirty minutes later the animal was placed in lateral recumbency and the testes removed through scrotal incisions. A tetanus-enterotoxemia vaccination was given along with flunixin meglumine IV and Ceftiofur crystalline free acid (Excede®) SC. The affected testis was 50 mm by 54 mm and bulged on cut section with a cream colored mass. Histology revealed neoplastic Sertoli cells. The other testis was 37 by 32 mm and histologically normal. There were no signs of feminization or myelotoxicosis from unregulated estrogen production, but such signs, typically seen in dogs with Sertoli cell tumors, might have developed had the tumor persisted longer.

Stewart JL et al.

JAVMA 257(1):45-47, 2020

## **CLINICAL EFFECTS OF EPIDURALLY ADMINISTERED DEXMETETOMIDINE WITH OR WITHOUT LIDOCAINE IN SHEEP**

The combination provided greater and more prolonged antinociceptive effects without an increase in cardiopulmonary side-effects.

Sheep have a high density of alpha2-receptors in the dorsal horn of the spinal cord, which promotes analgesic effects when alpha2-adrenoreceptor agonists are used for epidural anesthesia. Six Santa Ines sheep (average age 16 mon, average weight 42 kg) were used in a blinded study that compared lumbosacral injection of lidocaine at

1.2 mg/kg, dexmedetomidine at 2.5 ug/kg, or the two drugs together at these same doses through a preplaced 20 g epidural catheter. The catheter extended 5 cm cranial to the lumbosacral puncture site and its position was confirmed by radiography. For all treatments the volume of injection was made up to 0.2 ml/kg using a 0.9% NaCl solution. Antinociceptive effects were determined using a prick test with a 22 g one inch needle inserted through the skin to a depth of approximately 1 cm. Ataxia was graded from none to total paralysis of the hind limbs. The lidocaine alone limited analgesia to the perineal and sacral regions, and for 60 minutes or less. When the dexmedetomidine was added to the lidocaine, analgesia was more intense and extended forward to the lumbar and thoracic areas and lasted for up to 240 minutes. Total motor blockade persisted longer with the combination. Dexmedetomidine alone supplied analgesia of the perineal region only and only at 15 minutes. There was no clinical worsening of lidocaine-induced cardiovascular depression with the addition of dexmedetomidine.

Mattos-Junior E et al.

Vet Record 186(16), 2020 <http://dx.doi.org/10.1136/r.105609>

## **FOOTBATHING, FORMALIN AND FOOT TRIMMING: THE 3FS ASSOCIATED WITH GRANULOMAS AND SHELLY HOOF IN SHEEP**

Current recommendations in the United Kingdom are to **avoid** routine foot trimming and footbathing of sheep, to decrease flock lameness, and the data supported this recommendation for avoiding granulomas also.

Questionnaires administered by postal survey to English sheep farmers in 2003, 2013, 2014, and 2015 were analyzed looking for prevalence and risk factors for toe granulomas and shelly hoof. The granuloma is a very painful proliferation of vascularized connective tissue that protrudes through disrupted hoof horn and is difficult to cure, often leading to premature culling. It is believed to be due to trimming into sensitive tissues of the foot or to result from untreated severe footrot. Shelly hoof is a detachment of the hoof wall horn, typically on the abaxial wall, leaving a cavity that can become impacted with debris or allow penetration of a foreign body. The cause is poorly understood but might be physical damage, opportunistic bacterial or fungal infections or nutritional deficiencies. The authors cite published evidence that routine foot trimming and routine footbathing are associated with a higher prevalence of all lameness, including footrot. This held true in the surveys relative to granulomas. Granulomas were reported in 54 to 63% of flocks, and flock prevalence ranged from 0 to 8%. Shelly hoof was reported in 58 to 76% of flocks, with the prevalence of lesions (as remembered by farmers) mostly less than 5%. Shelly hoof was more common in flocks where footbaths were used, and was significantly associated with the use of formalin footbaths. An association of shelly hoof with foot trimming was inconsistent in the surveys. It was less common where trimming was done carefully such that no feet bled. Shelly hoof seemed to be more common in flocks on poor quality pasture.

Reeves MC et al.

Vet Journal 250:28-35, 2019

Wool & Wattles April - June 2020

## **INTRAMURAL VASCULAR EDEMA IN THE BRAIN OF GOATS WITH *CLOSTRIDIUM PERFRINGENS* TYPE D ENTEROTOXEMIA**

Although perivascular high-protein edema is considered to be the best neuropathic lesion of enterotoxemia in sheep, this change was infrequent in goats, where the main presentation is enteric.

Perivascular and intramural leakage of proteinaceous, eosinophilic fluid is seen in the brain of most cases of ovine enterotoxemia and is considered pathognomonic but has rarely been reported in goats. This study reviewed histology of the brain of 44 goats diagnosed with type D enterotoxemia at the San Bernadino and Davis labs in California. To be included the goats had to have 1) one or more historical signs of sudden death, colic, and/or diarrhea; 2) one or more suggestive pathological findings of colitis, hydropericardium, hydrothorax, ascites, and/or pulmonary edema; 3) detection of ETX (epsilon) toxin in the intestinal contents. *Clostridium perfringens* alpha toxin (CPA) was also present in all of the goats. The goats that met these criteria were 2 weeks to 6 years old and of various breeds. Ten adult goats with other diagnoses but negative tests for the epsilon toxin were used as controls. The most common gross lesion was hemorrhagic and/or necrotizing enteritis, colitis, or typhilitis (present in 55% of goats) while fluid was found in a body cavity of 46% and pulmonary congestion and edema in 39%. A careful examination of all areas of the brain where lesions have been reported in sheep was carried out, and 8 of the 44 goats showed lesions in the brain. Most frequently affected areas were cerebral cortex (n=6), basal ganglia of the corpus striatum (n=6), cerebellar peduncles (n=5) and thalamic nuclei (n=1). The vascular lesions were found in both arterioles and venules and the high protein edema fluid that distended the vascular walls was PAS positive. However, less than 5% of the total vessels in a section were affected, thereby requiring very careful scrutiny to detect these lesions that were present in none of the control goats. It has been postulated that goats experience a slower absorption of ETX produced in the intestine into the systemic circulation compared to sheep and this might explain why the brain lesions are less common in goats.

Ortega J  
Vet Pathology 56(3):452-459, 2019

## **EVALUATION OF INFRARED THERMOGRAPHY AS A NON-INVASIVE METHOD OF MEASURING THE AUTONOMIC NERVOUS RESPONSE IN SHEEP**

Infusion of epinephrine actually caused a slight increase in eye temperature at the lacrimal caruncle and was not a sensitive method for detecting an autonomic nervous system response.

Infrared thermography can be used to monitor the surface temperature of animals; changes in peripheral blood flow result in a cooling of the skin surface and an increase in the core body temperature when an animal experiences acute psychological stress. This increase in core temperature is referred to as stress-induced hyperthermia. Numerous studies in cattle, chickens, horses, and dogs have shown a variable change in eye temperature in response to a stressor. In cattle, the eye temperature has been shown to drop in response to epinephrine challenge, disbudding, startle, and electric prods while other studies have shown an increase in eye temperature with castration and catheterization of cattle, clipping and

noseband tightening of horses, restraint of chickens and sheep, and veterinary examination of dogs. This study challenged 10 sheep with a 6 minute infusion of epinephrine at 6 ug/kg per minute and 10 ewes with saline. The sheep were fitted with IV catheters and heart rate monitors. The maximum eye temperature (generally at the lacrimal caruncle, which has a rich capillary bed innervated by the sympathetic nervous system) was higher during the epinephrine infusion, contrary to what is reported in cattle. Heart rate was on average higher in sheep during the 5 minute post epinephrine infusion period and the heart rate variability was lower. Epinephrine concentration in the plasma was markedly increased. Plasma cortisol concentrations increased with the epinephrine infusion and packed cell volume increased by an average of 7%, presumably in response to splenic contraction. Because the eye temperature increase was small, further studies should evaluate biologically relevant acute stressors and the temperature of the sheep's ear, which has minimal wool to interfere with monitoring.

Sutherland MA et al.  
PLOS One: May 29, 2020 DOI: 10.1371/  
journal.pone.0233558

## **DISSEMINATED *MYCOBACTERIUM KANSASII* INFECTION IN A WHITE-TAILED DEER AND IMPLICATIONS FOR PUBLIC AND LIVESTOCK HEALTH**

The infection could not be distinguished grossly or histologically from a *Mycobacterium tuberculosis* complex infection.

A 2.5 year old white-tailed deer buck in poor to moderate body condition was found dead in Louisiana. Field necropsy revealed firm yellow-to-white gritty nodules throughout the lungs and many elevated white foci in the renal cortex. Histology revealed Langhans multinucleate giant cells in the pulmonary interstitium and the kidney cortex. These cells contained acid-fast bacteria (as demonstrated with a Ziehl-Neelsen stain) that were indistinguishable from *Mycobacterium bovis*, the cause of bovine tuberculosis. Molecular testing was crucial to identify the organism as *Mycobacterium kansasii*, which is a nontubercular mycobacterial species common in the environment. This organism is not documented to be transmitted from animal to animal, but it is a common infection in human immunodeficiency virus patients. The diagnosis of *M. bovis* in free-ranging wildlife in Louisiana would have had much more grave consequences, as deer can be a source of tuberculosis for cattle, as is currently the situation in Michigan. In the white-tailed deer naturally infected with *M. bovis*, the most common lesions are caseous granulomas in the retropharyngeal lymph node, easily escaping detecting by a hunter. Pulmonary and alimentary tract involvement is also possible in deer infected with tuberculosis.

Ford AK et al.  
J Vet Diagn Invest 32(1):147-151, 2020



# CLOSTRIDIAL DISEASES IN FARM ANIMALS: 1. ENTEROTOXAEMIAS AND OTHER ALIMENTARY TRACT INFECTIONS

Submit the distal small intestine for toxin testing. The article is well illustrated.

*Clostridium* species are ubiquitous environmental bacteria that are often found in the enteric flora of animals. Most are obligate anaerobes and are Gram positive. Their growth postmortem contributes to putrefaction of the body. Enterotoxemia occurs when soluble toxins are produced within the intestine and then reach the systemic circulation. *Clostridium perfringens* is now grouped into seven types, A to G, on the basis of lethal toxins produced. The diagnosis of enterotoxemia requires the identification of characteristic clinical signs and pathology AND demonstration of the specific toxins associated with the syndrome. The distal small intestine should be collected at necropsy, as this is considered to be the best site for detection of most toxins. As much air as possible should be excluded from samples taken for culture. The brain should be fixed whole. The necropsy needs to be done on a freshly dead body, to avoid autolytic changes and overgrowth of clostridia present within the gastrointestinal tract. *Clostridium perfringens* type A produces alpha toxin and causes "yellow lamb disease" in weaned lambs. The lambs are usually found dead with evidence of anemia, jaundice, and hemoglobinuria as well as centrilobular liver necrosis. *C. perfringens* type B produces alpha, beta, and epsilon toxins but the beta toxin is trypsin-sensitive and the epsilon toxin requires trypsin to be activated. This organism is responsible for lamb dysentery, which is a necrotizing enteritis. Lambs up to 3 weeks old are affected. The entire small and large intestine (or parts of it) may be dark red to purple and the intestinal content is typically dark red to purple and watery. Up to 20% of lambs may die in an outbreak in the UK but this disease is not reported in the US. *C. perfringens* type C causes hemorrhagic enteritis in lambs and many years ago was reported to cause sudden death ("struck") with hemorrhagic and necrotizing abomasitis and enteritis in adult sheep, though the latter condition is no longer seen. The most common enterotoxemia of sheep is due to *C. perfringens* type D and is known as "pulpy kidney disease". The organism produces epsilon toxin which is activated by trypsin in the intestine and causes increased capillary permeability. Proteinaceous fluid and edema accumulate in many organs, including the brain. Increased pericardial fluid with fibrin is usually present, and there may be cerebellar coning. If urine is present in the bladder, glucosuria may be detected, and the kidneys soften rapidly. Neurologic signs are suggestive of polioencephalomalacia, but diarrhea is rarely seen. Often there is a history of sudden introduction of highly fermentable carbohydrates in the diet, but some affected lambs receive only milk and some adults are on a stable diet. Goats also develop enterotoxemia due to the epsilon toxin, but the acute form with neurologic signs, pericardial effusion and pulmonary edema is seen only occasionally. The goats may exhibit abdominal pain and mucohemorrhagic diarrhea. A chronic form of the disease has also been identified in goats with adults developing pasty or watery diarrhea, abdominal discomfort, anorexia, and agalactia. This form can have a clinical course of several days to weeks. *Clostridium sordellii* (recently renamed *Paeniclostridium sordellii*) is associated with fatal necrohemorrhagic and emphysematous abomasitis in lambs four to 10 weeks olds, but may not be the primary cause. It also has caused malignant edema in adult sheep related to contaminated vaccination procedures or infection of the genital tract at parturition.

Otter A and Uzal FA  
In Practice 42(4):219-232, 2020



Goat with suspected dermatophilosis.

## DIAGNOSING AND TREATING SKIN DISEASES IN GOATS: AN UPDATE

This paper summarizes an earlier paper that has photographs of many of the conditions.

Many skin diseases of goats have a similar appearance, so it is important to take a thorough history and do a complete exam of the animal and its skin to arrive at a preliminary diagnosis. Once appropriate samples have been taken to confirm the diagnosis, treatment will probably require extralabel drug use and determination of appropriate meat and milk withdrawals. Acute skin lesion include erythema, edema, vesicles, pustules, papules or nodules and may be helpful in making a diagnosis. Chronic signs such as erosions, ulceration crusting, scaling, hyperkeratosis, and alopecia are less specific. This In Practice In Brief article provides tables that list many conditions, distribution of lesions, initial and chronic lesions, and if pruritus or alopecia occurs. Ectoparasitic causes described include lice, mange (chorioptic, sarcoptic, demodectic, psoroptic, *Cheyletiella*), mites from other sources (poultry, harvest and forage mites), ticks, ked, fly worry and fly strike - all with potential treatments. Most of these parasitic conditions except demodicosis are pruritic. Viral diseases causing skin disease are usually not pruritic and include reportable conditions (foot and mouth disease, peste des petits ruminants, bluetongue (in the UK), and capripox. Orf is the most common viral skin disease but papilloma, malignant catarrhal fever and caprine herpesvirus are also possible. The last table of other skin conditions to consider includes staphylococcal dermatitis, urine scalding in breeding male, zinc deficiency, pygmy goat seborrheic dermatitis, dermatophilosis (rain scald), photosensitization, ringworm, pemphigus foliaceus, benoitiosis, and scrapie.

Corke M and Matthews J:  
In Practice 40:129-130, 2018  
<http://dx.doi.org/10.1136/vr.k3277>

The original full article was published the same year and is available online with many photos:

In Practice 40(4):149-156, 2018  
<http://dx.doi.org/10.1136/inp.k1595>



## **BLASTOMYCES DERMATITIDIS PNEUMONIA IN A LLAMA**

Consider this possible cause of granulomatous pneumonia in endemic areas such as Tennessee.

A 20-year-old llama in Tennessee with a history of chronic dyspnea and osteoarthritis was submitted for necropsy in good body condition. Chronic obstructive pulmonary disease had been suspected prior to euthanasia. There was fibrin in the thoracic cavity and much of the lung was replaced with firm tan to white nodules 2 mm to 8 cm in diameter. Differentials based on gross exam included infections with *Mycobacterium tuberculosis*, *Rhodococcus*, *Coccidioides immitis*, *Cryptococcus* species, *Histoplasma*, *Aspergillus* and *Blastomyces*. Histology revealed many 10 to 10 µm diameter yeasts with clear 1 to 2 µm thick walls and broad-based budding, all typical of *Blastomyces dermatitidis*. This fungal infection was confirmed by DNA sequencing. It is usually acquired by inhalation of spores and is most common in humans and dogs in endemic areas. There was also mineralization of the intima of the aorta and carotid arteries, presumably driven by cytokines released by monocytes and macrophages. Paratuberculosis (Johne's disease) should also be considered when arteries are mineralized.

Jankovsky JM and Donnell RL  
J Vet Diagn Invest 30:576-579, 2018

## **PATHOLOGY IN PRACTICE (CAMPYLOBACTER ABORTION)**

Although often absent, the gross necrotic liver lesions seen were very suggestive of campylobacteriosis, a zoonotic infection.

Twin aborted lambs were submitted to a diagnostic lab without placenta; they were from the second of 7 ewes in the group to abort. One fetus had coalescing pale tan necrotic foci 5 mm to 6 cm in diameter visible on the surface of the liver and on cut section. The second lamb was grossly normal but had suppurative bronchopneumonia on histology. *Campylobacter jejuni* was isolated from pooled tissue samples, and no other tests for agents causing abortion in sheep were positive. Since the 1980s, a tetracycline-resistant strain of *C. jejuni* has replaced *C. fetus* subsp *fetus* as the most common cause of ovine abortion in the US. Abortion rates can reach as high as 50%, with abortion at any stage of pregnancy but most commonly in late gestation. Stillborn, unthrifty, or clinically normal lambs may also be delivered. Lesions include placentitis and fetal edema, bronchopneumonia, and multifocal hepatic necrosis. Differentials for the gross liver lesions in lambs include the uncommon *Fleixipira rappini* infection and necrobacillary hepatitis (*Fusobacterium*) from an umbilical infection. *Campylobacter jejuni* is a normal gastrointestinal and biliary commensal in sheep but is the cause of almost 10% of human cases of food poisoning. Between 2000 and 2008, 55,961 people in the US were hospitalized because of *C. jejuni* infection; this is often self-limiting, but Guillain-Barré syndrome (an autoimmune attack on the peripheral nervous system) is a well-recognized sequela. Undercooked poultry and raw milk consumption are common sources of human infection, but it can also be contracted by handling sheep or aborted lambs.

Sola MF et al.  
JAVMA 257:157-160, 2020

## **BACTRIAN CAMELS SHED LARGE QUANTITIES OF MIDDLE EAST RESPIRATORY SYNDROME CORONAVIRUS (MERS-CoV) AFTER EXPERIMENTAL INFECTION**

Bactrians appear to be as susceptible as Dromedaries and could become a source for human infections where the ranges of the two camel species overlap.

In the midst of the Covid-19 epidemic we should not forget that other coronaviruses are also infectious for humans. The Middle East respiratory syndrome coronavirus (MERS CoV) emerged in 2012 and was shown to circulate in Dromedary camels, which are the source of infection for people. There have been more than 2300 human cases reported, with a 35% fatality rate. Clinical signs in Drome-daries are limited to nasal discharge (which contains a very large amount of virus) and a mild elevation in body temperature. Infectious virus has been detected for the first week after experimental inoculation and viral RNA for 35 days. Llamas and alpacas are also susceptible but shed much less virus (2 logs lower). To date, MERS CoV has not been demonstrated in Bactrian camels and sero-surveys in Mongolia and Kazakhstan have detected no seropositive camels. The current study was undertaken to determine if Bactrians are susceptible to infection, and 2 adult intact males were inoculated intranasally with 10<sup>7</sup> plaque forming units of a MERS CoV human isolate. Both camels showed nasal discharge but their body temperature remained in the normal range. Infectious virus was detected in nasal swabs for the first 5 days, at which time one of the camels was euthanized and necropsied. Virus in this animal was detected primarily in the upper respiratory tract, and not in lungs, spleen, kidney, lymph nodes, or intestinal tract. Neutralizing antibodies were first detected in the remaining camel on day 14. The clinical signs and pattern of shedding were almost identical to what is seen in Dromedary camels.

Adney DR et al.  
Emerg Microbes Infect 8:717-723, 2019.  
<<https://www.tandfonline.com/doi/full/10.1080/http://promedmail.org/post/22221751.2019.1618687>>



---

## 2019-2020 AASRP Board of Directors

### President

Dr. Ann Goplen USDA/  
APHIS/AC 66 S. 200  
East Smithfield, Utah  
84335 Phone:  
385-244-8721  
Gople003@umn.edu  
Term: July 2019-2021

### President Elect

Dr. Kelly Still Brooks  
300 W Drake,  
Fort Collins CO 80524  
Phone: 607-280-8563  
Kmstill@colostate.edu  
Term: July 2019-2021

### Immediate Past President

Dr. Susana Myers  
100 N. 68th Ave.  
Coopersville, MI 49404  
Phone: 616-873-8151  
(clinic) Cell: 616-437-1629  
susanmyers78@hotmail.com  
Term: July 2019-2021

### Director, Region 1

Dr. Jon Higgins  
P.O. Box 719  
Belle Mead, NJ 08502  
Phone: 908-625-6300  
acornembryo@gmail.com  
Term: July 2018-2020

### Director, Region 2

Dr. Beth Johnson  
50 Tar Lick Rd.  
Parksville, KY 40464  
Phone: 859-583-5655 (cell)  
Bethc.johnson@ky.gov  
Term: July 2019-2021

### Director, Region 3

Dr. Chris J. Duemler  
Brodhead Vet. Med. Cntr.  
16724 Gempler Rd.  
Brodhead, WI 53530  
Phone: 608-558-1134 (cell)  
cduemler@brodheadvets.com  
Term: July 2018-2020

### Director, Region 4

Dr. Michelle Kutzler  
112 Withycombe Hall  
Oregon State University  
Corvallis, OR 97370  
Phone: 541-737-1401  
Michelle.Kutzler@oregonstate.edu  
Term: July 2019-2021

### Secretary

Position vacant

### Treasurer

Dr. Meredyth Jones  
740194 S Highway 177  
Perkins, OK 74059  
meredythddvm@gmail.com

### AVMA Delegate

Dr. Andrea Mongini  
5213 S. Graton Rd.  
Denair, CA CA 95316  
monginidvm@yahoo.com  
Term: July 2019-2023

### AVMA Alternate Delegate

Dr. Philippa (Pippa) Gibbons  
207 Thomas Road  
Speedwell, TN 37870  
Phone: 979-450-6393  
philippamgibbons@gmail.com  
Term: October 2019-2023

### Management Headquarters American Association of Small Ruminant Practitioners

1130 East Main St., Suite 302  
Ashland, OH 44805  
Phone: 419-496-0696  
aasrp@aasrp.org  
Service began in January 2017

### Executive Director

Dr. Fred Gingrich  
Cell: 419-606-3558  
fred@aasrp.org  
Service began in January 2017

---

## 2019-2020 AASRP Committees

### Continuing Education

Dr. Kelly Still-Brooks  
Phone: 607-280-8563

### Committee Members:

Jessica Bain  
Ann DiPastina  
Megan Munis  
David Pugh  
Joe Smith  
Trevor Walling

### Budget/Finance

Dr. Meredyth Jones  
**Committee Members:**  
Chris Camann  
Michelle Kutzler  
Patty Scharko

### Membership

Dr. Pam Walker  
**Committee Members:**  
Danielle Adney  
Eliana Greissworth  
Joan Dean Rowe  
Signe Balch

### Governance

Dr. Ann Goplen  
Phone: 385-244-8721  
Gople003@umn.edu  
**Committee Members:**  
Susan Myers  
Kelly Still Brooks

### Student Education

Dr. Cindy Wolf  
Phone: 507-450-5453  
wolfX006@umn.edu  
**Committee Members:**  
Meredyth Jones  
Meggan Freeland  
Pippa Gibbons

### College Liaison

Dr. Sarah Lowry  
9080 Chestnut Ridge Rd.  
Middleport, NY 14105  
Phone: 716-735-3204  
slowry95@gmail.com  
**Committee Members:**  
Signe Balch  
Tessa Marshall

---

## AASRP Representation for AVMA Offices and Committees

### Executive Board Liaison

Dr. Melanie Mardsen  
4531 Ridgeglen Rd  
Colorado Spring, CO 80918  
719-475-1747

### AVMA Delegate (HOD)

Dr. Andrea Mongini  
(2019-2023 renewable)

### Alternate

Dr. Pippa Gibbons  
(2019-2023 renewable)

### Legislative Advisory Committee

Dr. Kelly Still Brooks  
(2017- 2020 renewable)  
**Alternate**  
Dr. Margaret Masterson  
(2017- 2020 renewable)

### Clinical Practitioners Advisory Committee

Dr. Kimberly Brinton  
(2019-2022)  
**Alternate**  
Dr. Eric Gorden  
(2019-2022 renewable)

### Committee on Environmental Issues (COEI)

Dr. Judy Marteniuk  
(2018-2021)

### Committee on Antimicrobials

Dr. Virginia Fajt (2017-2020)  
**Alternate**  
Dr. Paul Plummer  
(2017-2020 renewable)

### Animal Agriculture Liaison Committee

Dr. Amy Robinson  
(2017 - 2020)  
**Alternate**  
Dr. Paul Hunter  
(2017-2020 renewable)

### Animal Welfare Committee

Dr. Larry Goelz  
(2019-2022)  
**Alternate**  
Dr. Michelle Kutzler  
(2019-2022 renewable)

### Food Safety Advisory Committee

Dr. Signe Balch  
(2018-2021) renewable  
**Alternate**  
Dr. Joannie Dean Rowe  
(2018-2021 renewable)

# AASRP Veterinary College Liaisons

## Auburn University

Benjamin Newcomer, DVM  
bwn0001@auburn.edu

## Colorado State University

Kelly Still-Brooks, DVM  
Dept of Clinical Sciences  
CSU CVM&BS 300 West Drake  
Ft. Collins, CO 80524  
Ph: 607-280-8563  
kmstill@colostate.edu

## Cornell University

Mary C. Smith, DVM  
Ambulatory/Prod. Med.  
Box 29 NYS College of Vet Med  
Ithaca, NY 14853  
Ph: 607-253-3140  
mcs8@cornell.edu

## Iowa State University

Paul J. Plummer, DVM PhD  
DACVIM  
College of Veterinary Medicine  
2426 Lloyd Veterinary Med. Cntr.  
Ames, IA 50011  
Ph: 515-294-8522  
Pplummer@iastate.edu

## Kansas State University

Emily Reppert, DVM  
1800 Denison Ave  
Manhattan, KS 66506  
Ph: 515-450-3310  
erepper@vet.k-state.edu

## Lincoln Memorial

Philippa Gibbons, DVM  
Ph: 979-450-6393  
philippamgibbons@gmail.com

## Louisiana State University

Clare Scully, DVM  
Baton Rouge, LA 70803  
Ph: 225-578-9613  
cscully@lsu.edu

## Michigan State University

Judy Marteniuk-Refsal, DVM  
736 Wilson Rd.  
East Lansing, MI 48824-1314  
Ph: 517-353-9710  
Cell: 517-712-0506  
marteniu@cvm.msu.edu

## Mississippi State University

Gretchen Grissett, DVM  
Mississippi State, MS 39762  
Ph: 662-617-0717  
turtle@thevoices.net

## North Carolina State University

Kevin L. Anderson, DVM, PhD  
4700 Hillsborough St. Raleigh,  
NC 27606  
Ph 919-513-6245  
klander4@ncsu.edu

## Ohio State University

Margaret Masterson, DVM  
16410 County Home Rd.  
Marysville, OH 43040 Ph  
937-642-2936  
masterson.2@osu.edu

## Oklahoma State University

Melanie Boileau, DVM  
Lionel Dawson, DVM  
Oklahoma State University  
Boren Vet Med Teaching  
Hosp. Farm Road  
Stillwater, OK 74078  
Ph: 405-744-6656  
melanie.boileau@okstate.edu  
Lionel.dawson@okstate.edu

## Oregon State University

Joe Klopfenstein, DVM  
158 Magruder Hall  
Corvallis, OR 97331  
514-737-5853  
joe.klopfenstein@oregonstate.edu

Michelle Kutzler, DVM  
michelle.kutzler@oregonstate.edu

## Purdue University

A.N. (Nickie) Baird, DVM, MS  
Diplomate ACVS  
Dept. of Vet. Clinical Science  
625 Harrison St.  
West Lafayette, IN  
47907-2026  
Ph: 765-494-8548  
abaird@purdue.edu

## Texas A & M University

Kevin Washburn, DVM  
Department of Large Animal  
Clinical Sciences  
MS 4475  
Texas A&M University  
College Station TX 77843  
979-845-3541  
kwashburn@cvm.tamu.edu

## Tufts University

Sandra L. Ayres, DVM  
200 West Borough Rd.  
North Grafton, MA 01536  
Ph: 508-887-4605 x 84605  
sandra.ayres@tufts.edu

## Tuskegee University

Karen Copedge, DVM  
1200 Old Montgomery Road  
Tuskegee, AL 36088  
kcopedge@tuskegee.edu  
Ph:334-724-4124

## University of California Davis

Joan Dean Rowe, DVM  
Vet Medical Teaching Hospital  
24580 Cache St.  
Capay, CA 95607  
Ph 530-796-2249  
Jdrowe@ucdavis.edu

## University of Florida

Fiona Maunsell, PhD, MS, BVSc,  
DACVIM Large Animal Clinical  
Sciences-FARMS  
University of Florida-CVM  
2015 SW 16th Ave.  
Gainesville, FL 32610  
Ph 352-294-4077  
maunsellf@ufl.edu

## University of Georgia

Lisa Williamson, DVM  
UGA College of Vet  
Medicine Large Animal  
Department 1810 Clotfelter  
Rd. Athens, GA 30622  
Ph 706-542-3223  
lisa1@uga.edu

## University of Illinois

Tessa Marshall, DVM  
Ph 615-630-1722  
kiwivet@yahoo.com

## University of Minnesota

Whitney Knauer VMD PhD  
Asst. Professor of Dairy  
Production Medicine  
225 VMC, 1365 Gortner Ave  
Saint Paul, MN 55108  
Ph: 612-624-3428  
knaue020@umn.edu

## University of Missouri

Dusty W. Nagy, DVM  
Food Animal Medicine & Surgery  
900 E. Campus Dr.  
Columbia, MO 65211  
Ph: 573-882-6857  
nagyd@missouri.edu

## University of Pennsylvania

Michael Pesato  
pesatom@gmail.com

## University of Tennessee

Ricardo Videla DVM  
2407 River Dr.  
Knoxville, TN 37996  
Ph: 865-974-5701  
rvidela@utk.edu

## University of Wisconsin-Madison

Gary Oetzel, DVM  
608-265-5476  
gary.oetzel@wisc.edu

## Virginia/Maryland Regional CVM

D. Phillip Sponenberg, DVM, PhD  
Dept. of Biomedical Sciences 100  
Duckpond Dr. Virginia Tech  
Blacksburg, VA 24061  
Ph 540-231-4805  
dpsponen@vt.edu

## Washington State University

George Barrington  
Washington State University  
Veterinary Clinical Services  
gbarrington@wsu.edu  
Ph: 509-335-0703

## Western University of Health Sciences

Spring K. Halland, DVM, CVA, DACVIM  
Western Univ. of Health Sciences  
College of Vet Medicine 309 E. 2nd St.,  
Room 248 BVCC  
Pomona, CA 91766-1854 Ph:  
Ph: 909-469-5626  
shalland@westernu.edu

## FOREIGN COLLEGE LIAISONS

### Ross University

Dr. Ninian Cameron-Blake  
Ross University School of  
Veterinary Medicine  
P.O. Box 334  
Basseterre, St. Kitts  
Ph: 869-464&-4161 X 1182  
NCameronBlake@rossvet.edu.kn

### University of Guelph

Dr. Jeff Rau  
Ruminant Health Management  
Group, Ontario Veterinary College  
Guelph, Ontario Canada N1G2W1  
Ph. 519-830-7887  
jarau@uoguelph.ca

### University of Montreal

Pascal Dubreuil  
Faculté de Médecine  
Vétérinaire 3200 Sicotte  
St-Hyacinthe PQ J2S 7C6 Ph:  
450-773-8521 x8266  
pascal.dubreuil@umontreal.ca

### University of Prince Edward Island

Shawn McKenna DVM PhD DABVP  
Dept of Health Management  
Atlantic Veterinary College  
Charlottetown PEI  
902-566-0993 (Farm Service)  
902-566-6004 (Office)  
slmckenna@upeu.ca

### University of Saskatchewan

Fritz Schumann  
52 Campus Drive  
LACS, WCVM  
Saskatoon, Saskatchewan  
S7N 5B4  
Ph 306-966-7178  
fritz.schumann@usask.ca

*NOTE TO STUDENTS: If you cannot reach your liaison contact please contact aasrp@aasrp.org. Your grant application must be signed by your advisor.*



## American Association of Small Ruminant Practitioners

The AASRP Newsletter  
1130 East Main Street, Suite  
302 Ashland, OH 44805



# AASRP MEMBER BENEFITS

The American Association of Small Ruminant Practitioners takes pride in our organization and the benefits we are able to offer to members. Just a few of these are listed below:

**Wool & Wattles:** Wool & Wattles is our quarterly newsletter that highlights pertinent information from books and journals in a digest format, upcoming events, and the best of information shared on the listserve.

**Website:** The AASRP website ([www.aasrp.org](http://www.aasrp.org)) provides a wealth of information for members including: membership directory, continuing education opportunities, career center, listserv and much more!

**Listserve:** The AASRP listserve is a discussion group directed through email that offers members the opportunity to share ideas and discuss problem cases with colleagues who share an interest in small ruminant medicine.

**Bugles and Orgles eNews:** Current news and information is sent out to members via email to keep our members up to date.

**Find a Vet and Membership Directory:** Through the AASRP website, the public has access to contact information for any member practice.

**Education:** Continuing education programs are offered across the country, and student education is promoted at veterinary college through externships and grants.

**Free online continuing education.** Listen and view sessions from the AABP-AASRP conferences either on your computer or mobile device. Download the BCI Mobile Conference app to listen on your mobile device.

**Race approved webinars** are being developed. The webinars and CE certificates will be a free benefit to members.

**Your voice:** By being involved in our organization you are able to make your opinion on important topics heard.

Through AASRP, you are part of a combined strength in small ruminant medicine that focuses on relationships, education, growth, and success. For a complete list of member benefits visit [www.aasrp.org](http://www.aasrp.org).