

WVDL Quarterly Newsletter - Spring, 2021



**Wisconsin Veterinary  
Diagnostic Laboratory**  
UNIVERSITY OF WISCONSIN-MADISON

## 2021 Spring Newsletter

### Message from the Director

Happy Spring from the WVDL! We hope that you and your family and friends are safe and well. All signs point to a light at the end of the tunnel of the COVID-19 pandemic, here is to hoping we continue on a positive trend. I have good news and sad news from WVDL.

Sadly, we have been grieving the unexpected death of Todd McCoy, supervisor at the Barron Laboratory, from natural causes this past month. Todd was a great team member and friend to many and we miss him greatly. Todd's legacy will live on at WVDL and with his family and friends. When he died he was working on major renovations to the Barron Laboratory, which are continuing and we're excited to see how his ideas will shape our service for decades to come.



Some good news from WVDL is that COVID-19 pandemic seems to be coming to an end. We have been busy with COVID-19 diagnostics in humans, in collaboration with the Wisconsin State Laboratory of Hygiene, and in animals, mostly working with the Centers for Disease and Prevention and National Animal Health Laboratory Network. We have learned a lot with both positive and negative experiences. I would like to specifically call out Dr. Ailam Lim, Kristin Zuzek, Dr. Nicole Aulik, and Dan Christensen, who have all put a huge amount of effort into COVID-19 work on a daily basis for over a year now. They cannot do this without the support of the rest of our team of people including microbiologists, client services, HR, and IT. Thanks to everyone and we are all looking forward to getting back to "normal."

Lastly, we are working on planning for our annual Bovine Genetics meeting for 2021. This is a free meeting and we draw a diverse crowd of veterinarians, regulatory officials, microbiologists, and laboratory diagnosticians with a global reach. We would very much like to have this meeting in-person, but it is unlikely that we will be able to do this in July or August. Fall tends to be very busy as well with semi-annual testing and World Dairy Expo, so we are looking for feedback on when would be a good time to have this meeting.

Keith Poulsen  
Director

## Sodium Intoxication in Pre-weaned Calves

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- D.C. Sockett DVM,MS, PhD, Diplomate ACVIM-Large Animal

The majority of confirmed sodium intoxication cases diagnosed by the WVDL are from young, dairy calves that are being fed a liquid diet. Usually, the calves have access to free choice water and there is no history of water deprivation. Neurological signs are only observed in a minority of calves. If baby calves have died and sodium toxicity is a distinct possibility, WVDL pathologists submit a brain sample for testing by inductively coupled plasma-mass spectrometry (ICP-MS).

A recent publication examined sodium distribution in the brains of eight animals (> 1 y old) that died of non-neurological disease and had no gross CNS abnormalities. Six different areas of the brain were tested by ICP-MS. Samples were collected from the rostral, caudal and dorsal cerebral cortex plus from the brainstem, thalamus and cerebellum. Results for individual samples were compared to a homogenate created by processing an entire hemisphere of each animal's brain.

Surprisingly, brain sodium values were not uniformly distributed and individual sodium results (ppm on a wet-weight basis) had no discernible pattern. No region of the brain was consistently found where a single sample agreed with the brain homogenate results. Many of the individual samples had a sodium concentration which varied by as much as 500 ppm when different regions of the brain were tested on the same animal. The study concluded that one homogenized hemisphere of brain (sagittal cut) should be used for sodium testing.

Practitioners that suspect sodium toxicity should submit the brain or head to the WVDL. WVDL staff can remove the brain from the head. Veterinarians that remove the brain should send it whole, or bisected (sagittal cut) with at least one hemisphere chilled or frozen. The fresh and frozen brain should be sent overnight to the WVDL with a sufficient number of ice-packs to keep the samples cold during transit to the laboratory.

Source: Romano MC, GE Higgs, MN Helm, D Stefanovski and CL Gaskill. Sodium distribution in the bovine brain. J Vet Diagn Invest 2021; 7(2): 384-387.

## Microbiology

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### Delay in Johne's Liquid Culture Results Due to Manufacturer Issue

The WVDL was recently informed that the manufacturer of the Johne's liquid culture medium has a raw material shortage for a component needed to culture *Mycobacterium avium* subspecies *paratuberculosis*. They are attempting to obtain the raw ingredient, but they have indicated we will not receive the product until May 14th. This is a proprietary formulation, so WVDL is unable to produce it in-house. Samples currently at the lab are able to be cultured, but all subsequent samples will not. You may continue to send Johne's liquid culture fecal samples and we will freeze them at ultra-low temperatures with no ill effect on testing or hold on collection of these samples till after May 14.

Whenever possible please use the Johne's PCR, which has been demonstrated to be as sensitive as liquid culture. This test will continue to be offered and is useful for non-international regulatory testing and in particular diagnostic testing. If there are any further questions, please see our website, email or call.

## Virology & Molecular Diagnostics

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### Diagnostic / Surveillance /Export testing

On March 1, 2021, WVDL launched the NVSL Epizootic Hemorrhagic Disease (EHD) AGID assay. WVDL worked with NVSL to validate the USDA approved assay. NVSL is producing enough reagents for ~ 25,000 tests a year. The assay has 98% sensitivity and 100% specificity. The NVSL assay will be used for export testing and we will still utilize the Australian assay for screen testing / pre-purchase testing.

#### Moving forward:

Test Code	Description	Appropriate use	Price (in state)
EHDAGIDNV	EHD AGID – NVSL assay	Export testing for EHD	\$ 11.00
EHDAUSAGID	EHD AGID – Australian assay	Screening testing for EHD	\$ 7.73

- EHD ELISA: WVDL and NVSL are working on side by side EHD ELISA assay comparison. Additional validation work is in progress. We are seeking NVSL support to obtain USDA approval for our EHD ELISA test for export testing. WVDL recently sent NVSL additional samples to test.

### Help us help you with diagnostic testing!

- **Please notify the lab on any large submissions.** This helps lab staff prepare and ensure that sufficient reagents and cells (virus isolation or serum neutralization) are available.
- **Fecal samples:** We would appreciate your assistance to use an appropriate specimen container for diagnostic samples. Use of obstetric sleeves or exam gloves are very difficult for laboratory handling. Samples submitted in this fashion can cause significant decreases in the quality of the specimen and results due to contamination. We are more than happy to send fecal specimen containers free of charge for future submissions.
- **Serum samples:**
  - WVDL recommends serum separator tubes over the non-additive red top blood tubes. Serum separator tubes help reduce hemolysis of samples and provide cleaner serum for testing.
  - Please send full tubes of serum. Partially filled/low volume tubes (pictured) make it difficult to ensure all requested tests have required testing volumes.
  - Currently we supply serum separator tubes at a very low cost. They can be ordered here: <https://www.wvdl.wisc.edu/index.php/forms/>



on the skin, and the last tube is very greenish/milky.

**BVDV testing:** WVDL receives thousands of ear notch samples each year. When sampling ear notches, please make sure to have collected tissue. Store collected ear notches for a maximum of 72 hours at refrigerator temperatures and ship over night to the WVDL on cold packs. This allows for a Friday collection and Monday shipping. Collection and storage of ear notches in clinics or on farms over the course of weeks or months causes sample degradation, making our testing invalid. Poor quality samples will be rejected. We will reject ear notch samples with tattoo ink because this can cause inhibition in the PCR reaction. Sometimes it's not visible when we receive the ear notches, but when they are soaked, the green dye is eluted. In the picture at left, the red-top tube is a clean, ideal sample. The 3 tubes on the right have green

### Nasal swab samples for BVDV PCR

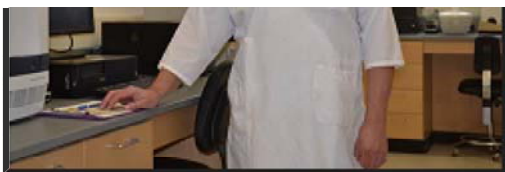
- WVDL recommends using BVD Nasal Swab Kit for large submissions of BVDV PCR testing.
- Currently we will supply the first kit free of charge for you to try out, please contact us to request the kit. They can also be ordered here: <https://www.wvdl.wisc.edu/index.php/forms/>
- Please see our website for complete details as well as guidelines for nasal swab collection for BVD PCR testing: <https://www.wvdl.wisc.edu/index.php/submission-guidelines/>

### NAHLN

- WVDL received a Level 1 laboratory designation for FY21. WVDL will continue with emergency preparedness, surveillance testing for 12 targets, participating with a variety of NAHLN working groups and committee chairs, validation studies, scenario testing, Quality & FAD training, FAD investigation as well as providing testing assistance if need be to other NAHLN laboratories.
- SARS-CoV-2 in animals: WVDL has been in collaboration with CDC and NAHLN to provide diagnostic testing for sample collection (oral, nasal, rectal, fur swabs, fecal or tissue samples) from companion animals in COVID-19 positive households and animal shelters, which have close interactions with owners or caretakers. As of 2/28/21, WVDL has performed 2,353 PCR tests under this collaborative framework, SARS-CoV-2 RNA has been detected in a total of 101 specimens, from 32 dogs, 26 cats and confirmed of 12 minks from 2 infected farms.



**Staffing:** Craig Radi retired on December 30, 2020 after 32 years of service. Craig has been an integral part of the team at the Wisconsin Veterinary Diagnostic Laboratory (WVDL) since 1986. Craig spearheaded the Electron Microscopy program at WVDL and is considered an expert in his field by many local and national colleagues, advancing veterinary diagnostics using



specialized electron microscopy techniques. Craig's work at WVDL has countless times benefited veterinarians, genetic industry leaders, businesses and farmers of Wisconsin. We wish Craig well in retirement!

## Client Services

### New Bovine Regulatory and Serology Submission Forms

- ***New Look, Improved Performance!***

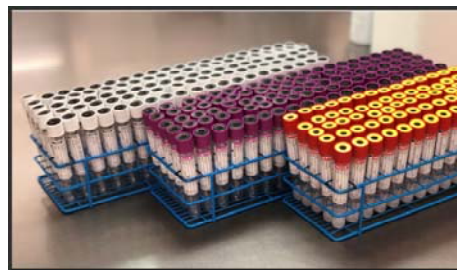
We are excited to announce a fresh look for both our Bovine Regulatory Submission and Serology and Diagnostics Submission forms! The redesign of these forms makes them easier to use while continuing to capture all required information. Please see additional details below.

- [Bovine Regulatory Submission Form](#) - For use with domestic and international movement, pre-purchase, and bovine export testing. Redesigned with new formatting and testing updates which make it easier to use with more space for required fields. Click the link above to download from the WVDL website. We hope that you will help us make this transition to our new and improved Bovine Regulatory Submission Form!
- [Serology and Diagnostics Submission Form](#) - For use for with testing for diagnostics, abortions, sales, and screening. Redesigned with new formatting and layout which makes it easier to use with more space for required fields. We have also added some tests that were previously not on our Serology Submission form such as CAE ELISA. Click the link above to download from the WVDL website. We hope that you will help us make this transition to our new and improved Serology and Diagnostics Submission Form!

### A Reminder About Our Blood Collection Tube Program...

We are continuing to offer Vacuette Blood Collection Tubes and have increased our inventories to keep up with the growth in demand for large orders! The tubes are all unbreakable PET plastic (Polyethylene terephthalate). This will eliminate samples broken during shipment. This also helps the lab by getting consistent high-quality samples in tubes that work well with automation and robotics for high throughput testing.

Tubes can be ordered in packs of 50 or a case of 1200. Find pricing and order some today with our fillable order form using this link: . [Blood Collection Tube Order Form](#)



### WVDL Shipping Program

We are continuing to provide low shipping costs thanks to an ongoing partnership with UPS. As always, our self-service, web-based shipping program interface is quick and convenient for all your shipping needs. Find more information regarding the WVDL UPS Shipping Program using the link below.

It is important to note that the shipping with the U.S. Postal Service (USPS) could possibly lead to a delay in results as both the Madison and Barron location receive UPS earlier in the day than USPS. UPS will pick up at your location at no charge to you. This is a part of the agreement the WVDL has with UPS. You can use the 'pick-up' link in the email that contains your shipping label or schedule online at [https://wwwapps.ups.com/pickup/schedule?loc=en\\_US](https://wwwapps.ups.com/pickup/schedule?loc=en_US). Same-day pick up time is dependent on the location so it is best to plan ahead. Otherwise, shipments can be given to any UPS driver either during an already scheduled pick up or during a delivery. As well, there are many convenient UPS locations or drop boxes which can be found at <https://www.ups.com/dropoff>.

A reminder that the Madison location does accept UPS Saturday Delivery, but a special \$30.00 flat rate shipping label must be purchased online and emailed to you. Remember to mark the 'Saturday Deliver' option box. For more information, please see our website: <https://www.wvdl.wisc.edu/index.php/shipping-information/> or call the WVDL.

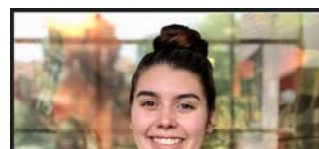
### Welcome New Staff

We welcome two new staff members to the Sample Receiving team-Madison Buss and Kathy Ryan!



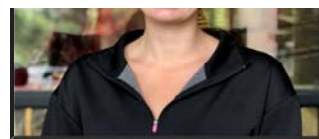
Madison Buss (right)- Madison has an Associates of Science degree in Biology from Highland Community College which she achieved as part of a dual credit program while completing her high school course work.

Kathy Ryan (left)- Kathy has a Bachelor's





degree in Liberal Arts and Science double majoring in molecular & cellular biology and psychology at the University of Illinois – Urbana Champaign. Kathy also has an Associate of Science degree with a concentration in chemistry from Highland Community College.



## Barron

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### Change to USPS-delivered packages to the WVDL-Barron Location

The Wisconsin Veterinary Diagnostic Laboratory (WVDL) in Barron, Wis., will be transitioning away from using a P.O. Box for receiving packages shipped via the United States Postal Service (USPS) and utilizing UPS. Starting May 15, 2021, packages shipped using USPS will arrive at the WVDL- Barron laboratory in the afternoon and will be processed as normal, but most testing will not be completed on the day of arrival. For clients using USPS for shipping and would like to utilize the WVDL-UPS program, please see the information below. For clients who would like to continue using USPS, please expect next day testing versus same day testing.

### Coggins/Equine Infectious Anemia (EIA) Testing Available at WVDL-Barron

EIA Testing is in full swing at the Barron Laboratory and the cost is only \$8/sample for EIA ELISA tests for both in-state and out-of-state clients. We do not charge an accession fee for EIA testing.

EIA submissions are tested daily at the WVDL-Barron Laboratory. Samples received by noon have same day testing. Samples should consist of 1ml serum, refrigerated and shipped with cold pack(s). WVDL accepts three submission types for EIA testing: including the Official Federal VS 10-11 Form (carbon paper), Global Vet Link (electronic), and the APHIS Veterinary Services Process Streaming (VSPPS) (electronic). Note: We do not require any WVDL submission form be submitted with EIA samples.

We would like to bring your attention to the release of new regulations by the USDA in October 2019 (VSG-15201.1). This is a great document to reference when submitting samples. This document contains both the regulations the submitter must follow and those that the WVDL must adhere to. If at any time you have questions or concerns, feel free to contact the Barron Laboratory at 715-637-3151. We would be happy and willing to assist you. We believe our exceptional service and dedication presents us an opportunity to be your EIA testing provider for years to come.

### Helpful Hints for EIA submissions using VS10-11

Below is a list of items that need to be completed for an Equine Infectious Anemia (EIA) submission. This will help ensure the VS10-11 paperwork is completed prior to submission to the WVDL.

In order to avoid delays in testing, please review that the following USDA regulations have been addressed before submitting future EIA test requests.

- Newest VS 10-11 form completed - Located Bottom Left corner (FEB 2018) or newer.
  - Date of Blood Draw entered
  - Test Requested marked
    - The WVDL only tests ELISA. If AGID is needed, it will be a referral to NVSL
  - Reason for testing marked
  - County of Equine at time of Blood Draw entered
  - Valid NAN (National Accreditation Number)
    - [https://www.aphis.usda.gov/aphis/ourfocus/animalhealth/nvap/ct\\_areavet](https://www.aphis.usda.gov/aphis/ourfocus/animalhealth/nvap/ct_areavet)
  - Veterinarian Signature and/or date entered
  - Name of Animal and/or Tube number on submission form must match the tube
  - Horse Description Diagram clearly marked
  - Horse Description Fields #17 - #22 entered

Please remember to write legibly on form. Also, every box on form must be entered. If there is no information or does not pertain, please enter an (NA) or a dash (-) in the box. If you have questions or concerns regarding this matter, please contact the WVDL- Barron Location at 715-637-3151 or consult our website.

### Changes to Serological Tests at the WVDL-Barron Location

Starting May 15, samples shipped using the United States Postal Service (USPS) will not

arrive to the lab until afternoon. Subsequently, tests that often report results the same day as the sample arrives, will no longer be tested on the same day. An example, is the Equine Infectious Anemia Antibody ELISA (Coggins) test, in which results are available same day in most cases. To accommodate samples arriving via USPS, the EIA Antibody ELISA turnaround time has been modified to 24-48 hours. Most samples will be reported the same day and paperwork completed within 24 hours as is currently standard. However, samples arriving via USPS in the late afternoon may take 48 hours for results.

To increase efficiency and accommodate new tests and new client submissions, the WVDL-Barron Serology Section will be moving the Caseous Lymphadenitis (CL) Antibody ELISA and Caprine Arthritis and Encephalitis (CAE) Antibody ELISA to weekly as needed. In particular these two ELISA tests are planning to be run on Wednesdays starting April 14.

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**[www.wvdl.wisc.edu](http://www.wvdl.wisc.edu)**

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