

Utah Veterinary Diagnostic Laboratory

# NEWSLETTER

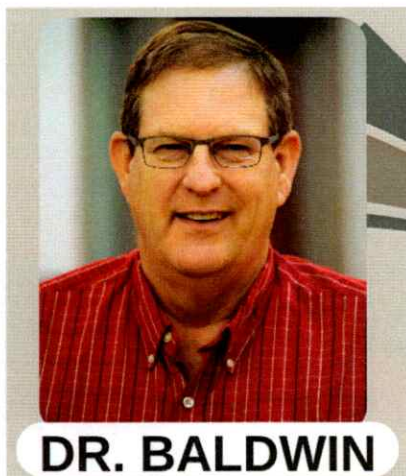
FALL 2026

UVDL@USU.EDU

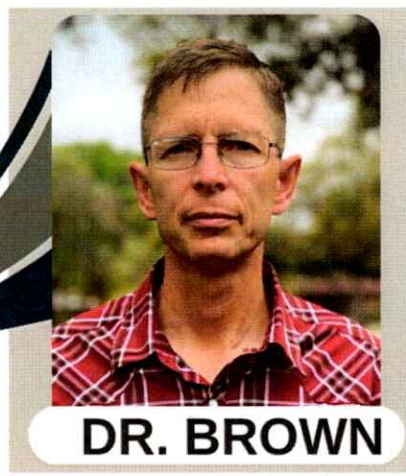
## UVDL UPDATES

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**DR. BALDWIN**



**DR. BROWN**

## PASSING THE TORCH

Honoring Dr. Tom Baldwin's legacy and welcoming Dr. Ammon Brown

SEPTEMBER 1 2026 DR. TOM BALDWIN HAS STEPPED DOWN AS UVDL DIRECTOR AFTER 25 YEARS. DR. AMMON BROWN WILL BE TAKING HIS PLACE.

College of Veterinary Medicine  
UtahStateUniversity.

# STUDENT ROTATIONS AT THE UVDL

—CECILIA DEGIOVANNI, DVM, MPH



With the opening of Utah State University's new Thomas and Patricia Willis Veterinary Medical Education Building and the launch of its veterinary medicine program, fourth year students will complete clinical rotations at veterinary practices throughout Utah and across the country. Students will complete their pathology rotations at the Utah Veterinary Diagnostic Laboratory (UVDL) in Logan, Utah.

To help prepare for future fourth-year rotations, the Office of Clinical Programs had a Summer Clinical Development Project that ran May – July 2026. Through this pilot project, first-year veterinary students gained early clinical experience by rotating through veterinary practices between Northern Utah and the Wasatch Front, with pathology rotations happening at the UVDL. Each UVDL rotation lasted two weeks and included one or two students. During the rotations, students participated in daily pathology activities, including performing necropsies, trimming biopsy specimens, and examining microscopic slides. Each student also selected an interesting case to study and present at the end of the rotation. Featured cases included nutritional myopathy in a sheep, a migrating grass awn with secondary pyothorax in a foal, and non-epitheliotropic lymphoma in a cat. Hosting the students was a wonderful experience for everyone involved at the UVDL. The students were enthusiastic, helpful, eager to learn, and a pleasure to work with. The success of this summer experience, and the fourth-year rotations that will follow in May of 2028, highlights the important role the UVDL will play in educating and preparing the next generation of veterinarians.

## Experiences from two of the veterinary students that rotated through the UVDL:



"My rotation at the UVDL happened to coincide with construction, which resulted in limited necropsy availability. However, this allowed me more time to reflect and review after each case. I was able to become comfortable with performing, sampling, and documenting necropsies, as well as trimming tissues for histopathology. My favorite part of the rotation was trimming the tissues and then viewing the slides afterward to see the disease processes firsthand. I found the UVDL to be a welcoming environment that constantly challenged my clinical thinking, especially since the pathologists are also our professors and frequently quizzed us throughout the rotation. I was also able to form connections with several staff members and get to know them beyond their professional roles, which was particularly valuable to me." —Jaide Poulsen



"I had a lot of fun while I was at the UVDL. All the necropsies were fascinating, and I enjoyed being part of the diagnostic process from start to finish on most of our necropsy cases. It's no secret that I enjoyed participating in the bacteriology lab, where I got to learn about how samples are plated and see some cool colonies grow. I'll never forget about the case I got to present to some of the staff and grad students. It was such an interesting exercise for me to apply what I learned in our Anatomy, Histology, and General Pathology courses. I think if every veterinary student got at least two weeks worth of experience in the UVDL then we would all have a little more confidence moving forward in our careers." —Alexiana Larson

# CASES IN FOCUS

## West Nile: An Overview - Tiffany Tolbert, DVM, MPH

### What is it?

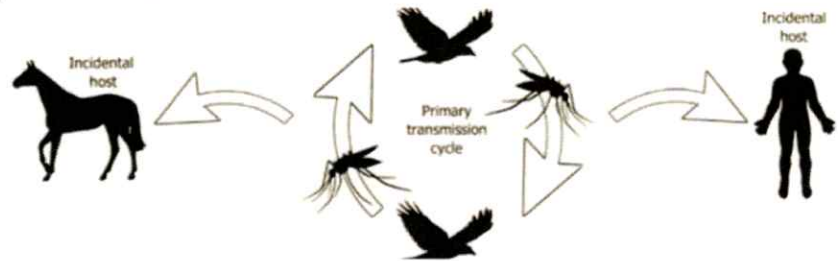
West Nile virus (WNV) is a mosquito-borne viral disease that circulates in wild bird populations, but can affect animals and humans. WNV is part of the Flaviviridae family, of the Orthoflavivirus genus, and belongs to the serogroup of viruses that cause Japanese encephalitis. The virus can further be classified into 8 or 9 genetic lineages, but clinical cases most commonly come from lineages 1 and 2. West Nile virus was only found in the Eastern hemisphere, until it was reported in North America in 1999 at the Bronx Zoo in New York. Since then, the virus has spread across the continent and was first reported in Utah in 2003. Although the virus can cause disease in a multitude of animals, it can cause significant clinical disease in horses and humans.

### Clinical Signs

Depending on the species and level of infection, clinical signs range from asymptomatic to sudden death. In birds, clinical signs can be nonspecific, such as anorexia, weight loss, lethargy, or neurologic signs that include, but not limited to, incoordination, paresis, paralysis, tremors, nystagmus, circling, and seizures. Sudden death may also be the only symptom. The severity of clinical signs in birds can be influenced by several different factors, including species. For example, corvids usually become critically ill with neurologic signs due to an elevated viral load, whereas chickens are routinely asymptomatic. This unique characteristic of chickens allows them to serve as sentinel animal due to the antibodies present in their blood.

Outside of birds, WNV most often affects horses and humans, and even then, it is in a limited capacity. Most horses infected with WNV are asymptomatic. When clinical signs appear, they typically present with weakness, hyporexia, depression, fever, ataxia, tremors, behavioral changes, paralysis of one or more limbs, and cranial nerve deficits. Within the population of infected horses, approximately 10-43% develop neurologic symptoms. When sporadic cases occur in other animals, in addition to neurologic signs, vomiting, diarrhea, oculonasal discharge, and labored breathing can be seen. In dogs it can appear as conjunctivitis, polydipsia, and polyarthritis with neurologic signs.

### Life Cycle



Although humans can become infected, 70-80% of people who are infected do not develop symptoms. Those that do typically have nonspecific signs such as body aches, joint pain, vomiting, diarrhea, and rashes. Out of the individuals affected, less than 1% will develop neurologic signs. WNV is primarily transmitted by the *Culex* genus of mosquitoes. Virus transmission mainly occurs when a mosquito feeds off an infected bird followed by taking a blood meal from another uninfected bird. The virus propagates inside the newly infected bird, and the cycle continues. Since birds are the only reservoir host, this is the main way the virus stays in circulation. When a mosquito feeds on another animal, such as a horse or human, after feeding on an infected bird, they become dead-end, or incidental, hosts. In dead-end hosts, the virus cannot be transmitted to other individuals.

### Diagnosis

Testing can be done on the virus, nucleic acids and antigens found in the brain and spinal cord of animals with neurologic signs, as well as other affected tissues and blood. The sample and testing method recommended is based on species, clinical presentation, and necropsy findings. Testing options include virus isolation, immunofluorescence, immunohistochemistry, serology, PCR, and ELISA. The Utah Veterinary Diagnostic Laboratory offers qPCR on select tissue samples or IgM ELISA on equine serum. For additional information on testing and sample submission, please contact the lab. If an animal is diagnosed with WNV, it is a reportable disease in Utah and must be reported to the office of the state veterinarian.

### Treatment and Prevention

Treatment for WNV is limited to supportive care to help reduce inflammation into the central nervous system. Outside of supportive care, if clinical signs are too severe and no improvement is observed, euthanasia may be recommended.

Prevention is best achieved through a multipronged approach. During mosquito season, preventative measures should include the use of topical repellents, housing susceptible species indoors, using screens on barns, and utilizing fans, since mosquitoes are weak fliers. Additionally, the Utah Department of Health and Human Services operates mosquito abatement programs to control and monitor mosquito populations. Since the only USDA approved vaccines for WNV in the United States are for horses, it is recommended to keep all horses on the property up to date with their vaccinations. The WNV vaccine is considered a core vaccine by the American Association of Equine Practitioners (AAEP), which provides recommended vaccination schedules on its website. Through the implementation of vaccines [EK2], preventative measures, and state programs the risk of WNV can be mitigated for animals and humans.

#### Resources:

1. Utah Arboviral Surveillance weekly report: MMWR Week 33, August 16- August 22, 2026.
2. West Nile Virus Vaccination guidelines . American Association of Equine Practitioners. 2023.
3. West Nile Virus Infection. The Center for Food Security and Public Health. May 2023. [https://www.cfsph.iastate.edu/Factsheets/pdfs/west\\_nile\\_fever.pdf](https://www.cfsph.iastate.edu/Factsheets/pdfs/west_nile_fever.pdf).
4. Whitlock F, Newton R, King S, Ionescu A, Higgins S. West Nile virus in horses: Surveillance, diagnosis and prevention in the UK. Veterinary Record. 2025;197(5). doi:10.1002/vetr.5926

**College of Veterinary Medicine**  
**Utah State University.**

## CASES IN FOCUS

# Highly Pathogenic Avian Influenza H5N1 Poses Challenges for Utah Producers

-Chloe Stenkamp-Strahm, DVM, MS, PhD

While H5N1 remains best known as a virus affecting poultry and wild birds, researchers first recognized in March of 2024 that the virus could spread efficiently among dairy cattle. Since that time, viral infections have created significant challenges for dairy producers in 19 states, including Utah. Herds within the state of Utah were first affected in Fall 2024, and after a significant period without detections, returned in June 2026. After H5N1 was first detected in Cache County this year, Utah dairy producers, veterinarians, and animal health officials worked together to implement surveillance programs to identify infected herds. These efforts included weekly PCR testing of bulk tank milk, as the virus can be shed in the milk from affected cows.



Quarantine measures were established for affected farms, to help limit ongoing spread of the virus. During the outbreak that spanned June to September, a total of 25 dairies were affected: 15 in Cache County, 6 in Box Elder County, and 4 in Weber County. According to an update in early September from the Utah State Veterinarian's Office, all affected Utah dairies had sufficient negative testing to be released from quarantine. At that time, surveillance was still being conducted in areas with recently quarantined farms, and dairies exhibiting cattle at the Utah State Fair were undergoing bulk tank milk testing prior to the show. Although the outbreak has subsided in Utah, our state will continue to perform monthly milk testing under the National Milk Testing Strategy, a federally mandated surveillance program being implemented across the United States.

This recent outbreak highlights the importance of H5N1 disease recognition, communication among producers, veterinarians, and animal health officials. It also highlights what we still don't understand about this virus, and how it behaves in cattle and dairy production systems.

## What Does HPAI Look Like in Dairy Cattle?



Unlike poultry, most dairy cattle infected with H5N1 recover from disease. Clinical signs of H5N1 seem to primarily affect lactating dairy cows, often being first noticed as a sudden drop in milk production. Milk from affected cows may become thickened, discolored, or colostrum-like in appearance. Additional signs include fever, reduced feed intake and decreased rumination, dehydration, and lethargy. The best treatments to give cattle during H5N1 infection have yet to be studied, but the administration of supportive treatments like fever reducing medications and fluids may be beneficial. Most animals recover within two to three weeks with and without supportive therapy, depending on the severity of disease.

While many cattle recover, some Utah producers during the recent outbreak reported H5N1 impacts extending beyond milk loss. Some farms experienced substantial disease spread within their herds, reproductive losses, additional labor demands with greatly increased veterinary expenses, and long reductions in productivity in certain cows. In some cases, severely affected cows died or required culling. Unfortunately, the research community still does not understand why individuals on some farms become severely affected by H5N1, while others experience relatively mild disease.

# CASES IN FOCUS

## Highly Pathogenic Avian Influenza H5N1 Poses Challenges for Utah Producers

### How does the virus spread?



Researchers are continuing to learn how H5N1 is transmitted in dairy systems. Evidence supports cow-to-cow spread, potentially during milking and likely through other normal farm activities. Animal movement, shared equipment, vehicles, visitors, and personnel may contribute to disease spread between farms. Because contaminated raw milk contains large amounts of virus, it is believed to play an important role in transmission among farms and between cattle. Although this may be true, the exact doses and routes of viral exposure sufficient to cause disease in a natural farm setting are still not understood.

Wild birds appear to be the original source of the H5N1 virus currently circulating among cattle. However, sequencing of viral strains collected from farms experiencing infection suggest that in most cases, the virus is not repeatedly introduced by wild birds. The virus is more often spreading between individual cows on a farm, and between individual herds in a geographic area. Although it appears rare, exposure to bird-contaminated feed, water, or environments may still contribute to new H5N1 introductions on dairy operations.

### Human and Other Animal Health Considerations



Livestock owners should be aware that H5N1 can infect mammalian species other than cattle and poultry, including humans. Cats appear particularly susceptible to H5N1 infection and may develop severe disease, including neurologic signs, following exposure to infected birds or consumption of contaminated food or raw milk from infected cattle. For information on H5N1 disease in other animals, individuals may refer to the following website: <https://ag.utah.gov/animal-industry/animal-health-program/pets/hpai-in-pets/>.

Luckily, the public health risk for H5N1 has remained low. Documented human infections associated with cattle, although they have occurred, are uncommon and have primarily been seen in people that have direct exposure to infected animals. Individuals working closely with dairy cattle should use the personal protective equipment (PPE) recommended by the CDC (<https://www.cdc.gov/bird-flu/worker-safety/farm-workers.html>) and report any illness to their healthcare provider.

Studies conducted by federal agencies have shown that the pasteurization process effectively inactivates H5N1, so pasteurized milk is safe to consume. Raw milk may contain infectious virus and should not be consumed.

### Protecting the Herd



A significant knowledge gap remains regarding why some farms become infected with H5N1 despite being closed herds and/or implementing stringent biosecurity measures. Nonetheless, biosecurity is thought to be the best control tool currently available to reduce the risk of acquiring H5N1.

General biosecurity measures\* to reduce herd H5N1 include:

- Limit unnecessary farm visitors and animal movements.
- Clean and disinfect equipment shared between facilities.
- Maintain strong employee biosecurity practices, including regularly changing and disinfecting boots and clothing.
- Monitor cows closely for sudden milk production losses or abnormal milk and report these changes to your veterinarian and the Utah State Vet's office
- Reduce opportunities for wild bird contact with feed, water, and livestock facilities.
- Work with your veterinarian to develop a herd-specific biosecurity plan.

\* This is not an exhaustive list

### Stay Informed



The H5N1 situation continues to evolve as researchers, including those at USU, attempt to learn more about transmission, immunity, and the long-term health impacts this virus has on dairy herds. For the latest information, livestock owners are encouraged to contact Chloe Stenkamp-Strahm at Utah State University ([chloe.stenkamp-strahm@usu.edu](mailto:chloe.stenkamp-strahm@usu.edu)) or refer to the following websites:

<https://ag.utah.gov/animal-industry/animal-health-program/cattle-and-bison/dairy-cattle-and-hpai/>  
<https://www.aphis.usda.gov/livestock-poultry-disease/avian/avian-influenza/hpai-livestock>

#### Resources:

1. USDA APHIS. 2024. Highly Pathogenic Avian Influenza H5N1 Genotype B3.13 in Dairy Cattle: National Epidemiologic Brief. [www.aphis.usda.gov/sites/default/files/highly-pathogenic-avian-influenza-national-epidemiologic-brief-09-24-2024.pdf](https://www.aphis.usda.gov/sites/default/files/highly-pathogenic-avian-influenza-national-epidemiologic-brief-09-24-2024.pdf)
2. Extension Collaborative on Immunization Teaching & Engagement (EXCITE). 2025. Keeping our farms safe: Protecting against H5N1. H5N1 Extension. <https://h5n1.extension.org/wp-content/uploads/2025/01/EXCITE-H5N1-FactSheet-january-2025.pdf>
3. Mellis AM, et al. 2024. Serologic Evidence of Recent Infection with Highly Pathogenic Avian Influenza A(H5) Virus Among Dairy Workers, Michigan and Colorado, June-August 2024. MMWR.
4. Centers for Disease Control and Prevention. 2025. Current situation: Bird flu in dairy cows. U.S. Department of Health and Human Services. <https://www.cdc.gov/bird-flu/situation-summary/mammals.html>
5. Michigan Department of Agriculture and Rural Development, US Department of Agriculture Animal and Plant Health Inspection Service. 2024 Highly Pathogenic Avian Influenza (H5N1): Michigan Dairy Herd and Poultry Flock Summary. Epidemiological Investigations of HPAI H5N1 Genotype B3.13 in Michigan Dairy Herds and Poultry Flocks: Observations on Viral Spread Between Premises and Mitigation Recommendations. Published June 9, 2024. [www.aphis.usda.gov/sites/default/files/hpai-h5n1-dairy-cattle-ris-epi-invest.pdf](https://www.aphis.usda.gov/sites/default/files/hpai-h5n1-dairy-cattle-ris-epi-invest.pdf)
6. Lombard J, et al. 2025. Invited review: The One Health challenges and opportunities of the H5N1 outbreak in dairy cattle in the United States. Journal of Dairy Science, 108(7). 6513-6537. <https://doi.org/10.3168/jds.2024-26222>

# EMPLOYEE SPOTLIGHT



**GRACE DYMOCK**  
(LOGAN LABORATORY)

I'm from a small town called Magna, Utah and I came to Logan to pursue higher education. I'm currently working towards completing my bachelor's degree in veterinary science, with hopes of continuing my education to become a veterinarian. I've lived my whole life wanting to give back to my community, either previously through working as a lifeguard for 5 years or doing volunteer work through the school, and I hope I can continue to do so by helping animals. My goal is to apply to Veterinarians Without Borders where I can experience new places and cultures throughout the world, while doing what I love. I am excited to begin my position at the UVDL to meet new people and learn more exciting things to use in my future goals and pursuits. In my spare time, I love watching movies, reading books, and listening to all kinds of music.



**INIOSKA ROJAS**  
(LOGAN LABORATORY)

I joined the Utah Veterinary Diagnostic Laboratory as a Laboratory Technician, where I work in histology and molecular diagnostics. I am an Agricultural Engineer by training and hold a Master of Science in Animal Production with an emphasis in genetics, both earned in Venezuela. I have lived in Smithfield since 2022 with my husband and family. Outside of work, I enjoy spending time with my family, cooking, and reading. I also share my home with Candy, a Jack Russell terrier who is very much part of the family.



**RACHEL BEHUNIN**  
(SPANISH FORK LABORATORY)

My name is Rachel Behunin. I was born and raised in West Bountiful, UT. I'm recently hired as a laboratory technician at UVDL. I spent a few years working as a certified veterinary technician, and am recently graduated from Weber State University with a Bachelor's in Microbiology. Hobbies include drawing, bird watching, gardening, cooking, and hiking.



**JAY BRYNER**  
(LOGAN LABORATORY)

I'm Jay! I love all animals but marine mammals are my favorite. Outside of work, I spend a lot of time with my pets (I have 2 dogs and a horse) and I enjoy video games, movies, and making spreadsheets for fun. I paint killer whales every once in a while. I love learning new things and always have a fun fact on deck for any given situation.