



**IOWA STATE UNIVERSITY**  
Veterinary Diagnostic Laboratory  
1850 Christensen Drive  
Ames, IA 50011-1134

Recipient Name  
Recipient Address  
Apartment, Unit #  
City, State, Zip Code



## AVIAN INFLUENZA (AIV): Laboratory Submissions 101



**Serological analysis**  
*Blood test for antibodies (exposure) to virus*



**Molecular diagnostics**  
*Swab test for genetic material of virus (sick birds)*

**ELISA:** Fast results (same day as tested)  
Screening test

**AGID:** Overnight test (24-hour incubation period)  
Serology confirmatory test

**HI:** Only at NVSL (National Vet Service Lab) for  
subtyping AI (H and N type)  
3 day turn-around  
Confirm the **REASON** for positive AGID

**PCR matrix:** Fast results (same day as tested)  
Screens for all influenza A virus

**PCR H5/H7:** Specifically tests for H5/H7 AI virus types  
Only performed by a state approved  
laboratory

**Sequencing:** Only at NVSL (National Vet Service Lab)  
Identifies the virus (LPAI/HPAI)

### What to do with a positive result?

- ELISA positive ..... Retest with AGID (confirmatory test)\*
- AGID positive\* ..... Forward to NVSL, confirm with HI
- PCR negative, AGID positive ..... Wait for HI test, retest at later date
- PCR positive at ISU (matrix) ..... Retest by H5/H7 and forward to NVSL
- PCR positive at ISU (H5/H7) ..... Presumptive positive, forward to NVSL

**\*If commercial, collect swab samples ASAP to determine virus status of flock**



## Dr. Drew Magstadt Diagnostic Pathology

Drew grew up on a cattle ranch in central North Dakota. He attended North Dakota State University for his undergraduate degree before continuing on to graduate from Iowa State University College of Veterinary Medicine in 2011.

Upon completing his degree, he worked in a 50/50 mixed animal practice in southeast Iowa for two years. In 2013, he came to the ISU VDL where he completed a Master's in Veterinary Microbiology in 2015 and an anatomic pathology residency in 2017. He is currently a Diagnostic Pathologist (Clinical Assistant Professor) at the VDL and a co-instructor in charge of the diagnostic lab VM4 rotation.

Drew enjoys client interaction, discussion of cases, full-body necropsies, and site visits for disease investigations. Additionally, his specific research interests include: antimicrobial resistance in bovine respiratory disease, PRRSV vaccine efficacy, investigation into congenital tremors in pigs/atypical porcine pestivirus, and porcine epidemic diarrhea virus (PEDV).

Drew met his wife Tiffany while he was attending ISU CVM. His hobbies include: golfing, following college football, and preparing smoked ribs and brisket.

## STAFF HIGHLIGHT

# A new member of the PCVAD complex? PORCINE CIRCOVIRUS 3

Article authors: Pablo E. Piñeyro, Bailey L. Arruda, Eric R. Burrough, Rodger G. Main

Circoviruses are small viruses with a circular, single-stranded DNA genome of approximately 2,000 bases, belonging to the family Circoviridae, genus Circovirus. Working in conjunction with Kansas State University, researchers at ISU VDL recently reported the detection of a new species of circovirus. Three types of porcine circovirus, PCV1, PCV2, and PCV3 have been described thus far.

**PCV1** - cell culture derived virus considered nonpathogenic for pigs.

**PCV2** - primary etiological agent of porcine circovirus-associated disease (PCVAD) which causes severe economic loss worldwide.

**PCV3** - found in porcine dermatitis and nephropathy syndrome (PDNS), porcine circovirus associated disease (PCVAD) and cases of reproductive failure.  
**CLINICAL IMPORTANCE UNKNOWN**

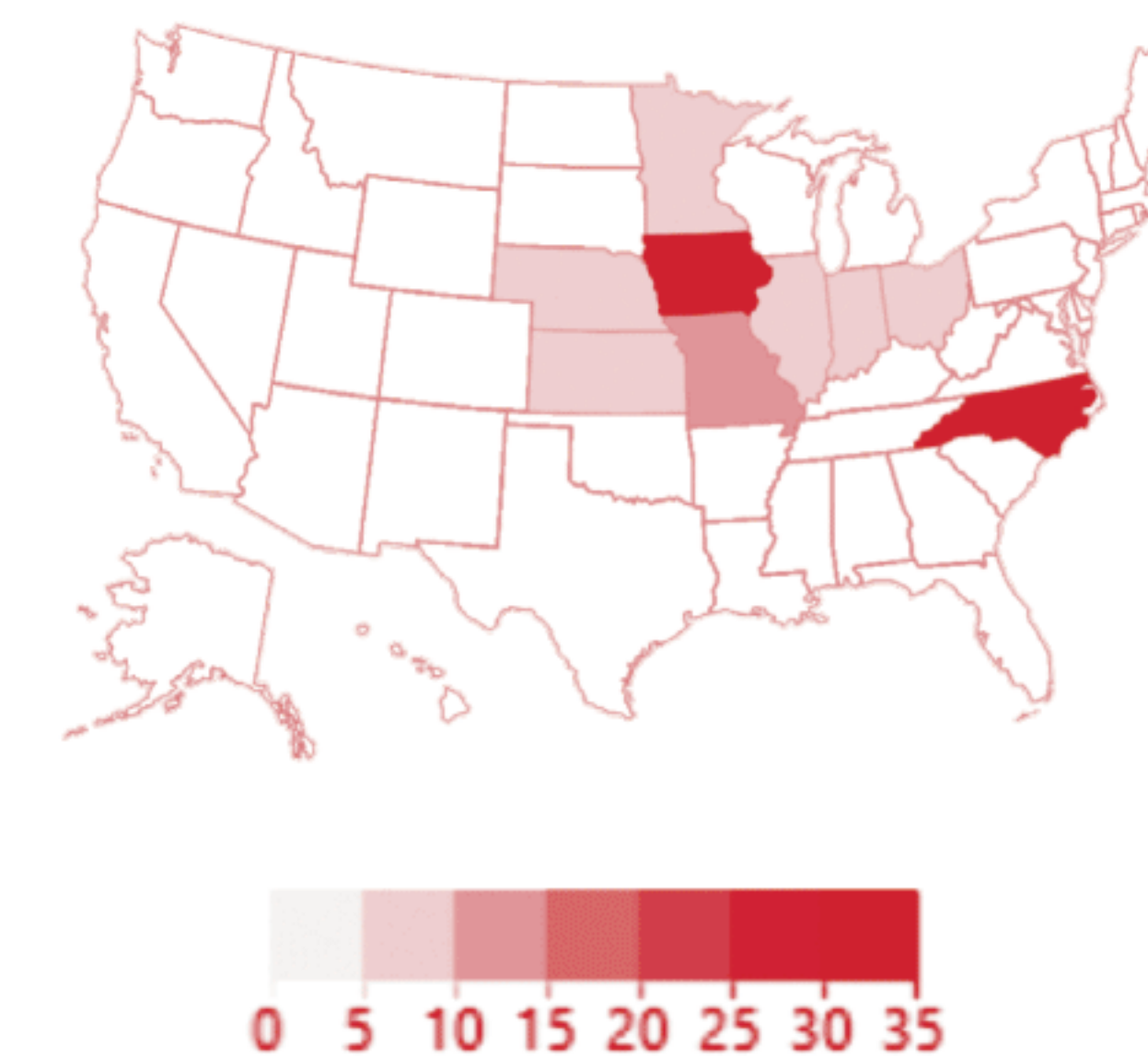
A retrospective study that included 74 cases spanning samples from 2010 to 2016 with lesions representative of PDNS and PMWS without immunohistochemical detection of PCV2. All samples were PCV3 positive by PCR and large subset were confirmed by immunofluorescence. The fact that most of the lesions observed overlapped with different PCV2 clinical presentations make the real clinical interpretation of PCV3 challenging. Subsequently, PCV3 is being detected in most of the swine producing countries worldwide.

**At ISU, we offer a duplex PCV2/PCV3 PCR that allows our clients to detect both viruses in the same samples. The current diagnostic tests are capable of detecting the virus in tissues. The clinical implications of the PCR findings in these samples remains unclear.**

State	Negative	Positive	Total	% Positive
NC	75	35	110	32%
IA	68	33	101	33%
MO	18	6	24	25%
MN	18	4	22	18%
IN	12	3	15	20%
NE	7	4	11	36%
IL	5	4	9	44%
OH	8	1	9	11%
KS	3	4	7	57%
Other	18	5	23	22%
<b>Total</b>	<b>232</b>	<b>99</b>	<b>331</b>	<b>30%</b>

<sup>1</sup> A total of 963 samples from 331 diagnostic case accessions in 2017 - 2018 from more than 20 states were tested by PCV3 PCR.

Number of PCV3 positive cases by state of origin



## ANNOUNCEMENTS:

### Upcoming University Holidays:

Independence Day – Wednesday, July 4th  
Labor Day – Monday, September 3rd

**HATS** will be receiving drop-offs as normal on Wednesday, July 4th.

## Mobile Client Portal

We are pleased to announce the roll-out of a mobile friendly version of ISU VDL's Client Web Portal.

The mobile friendly version of VDL's Client Portal became accessible through your default browser effective Monday, March 12, 2018.

This new mobile-friendly website provides users an improved application for viewing case results and completing web-based submissions on your personal mobile device. **Connectivity to the internet is required for functionality.**

You can access by clicking on the "Mobile Version" on the Login page or adjacent to Help on the desktop version of VDL Client Portal.

While the mobile-friendly version of the VDL Client Portal is not as fully capable or expected to replace utility of desktop version, we trust this new development will improve your experience when accessing the VDL Client Portal on your personal mobile device.

When submitting using the web portal it is important to note that you CANNOT use the browser navigation on your phone (back, refresh, etc.) or the information will not be saved.

Please contact ISU VDL (Dr. Katie Woodard, [kwoodard@iastate.edu](mailto:kwoodard@iastate.edu) or Jordan Kraft, [jnb@iastate.edu](mailto:jnb@iastate.edu); 515-294-1950) for any questions and/or assistance.