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ANNUAL REPORT



OADDL

College of Veterinary Medicine

Diagnostic *Excellence* SINCE 1975

TABLE OF CONTENTS

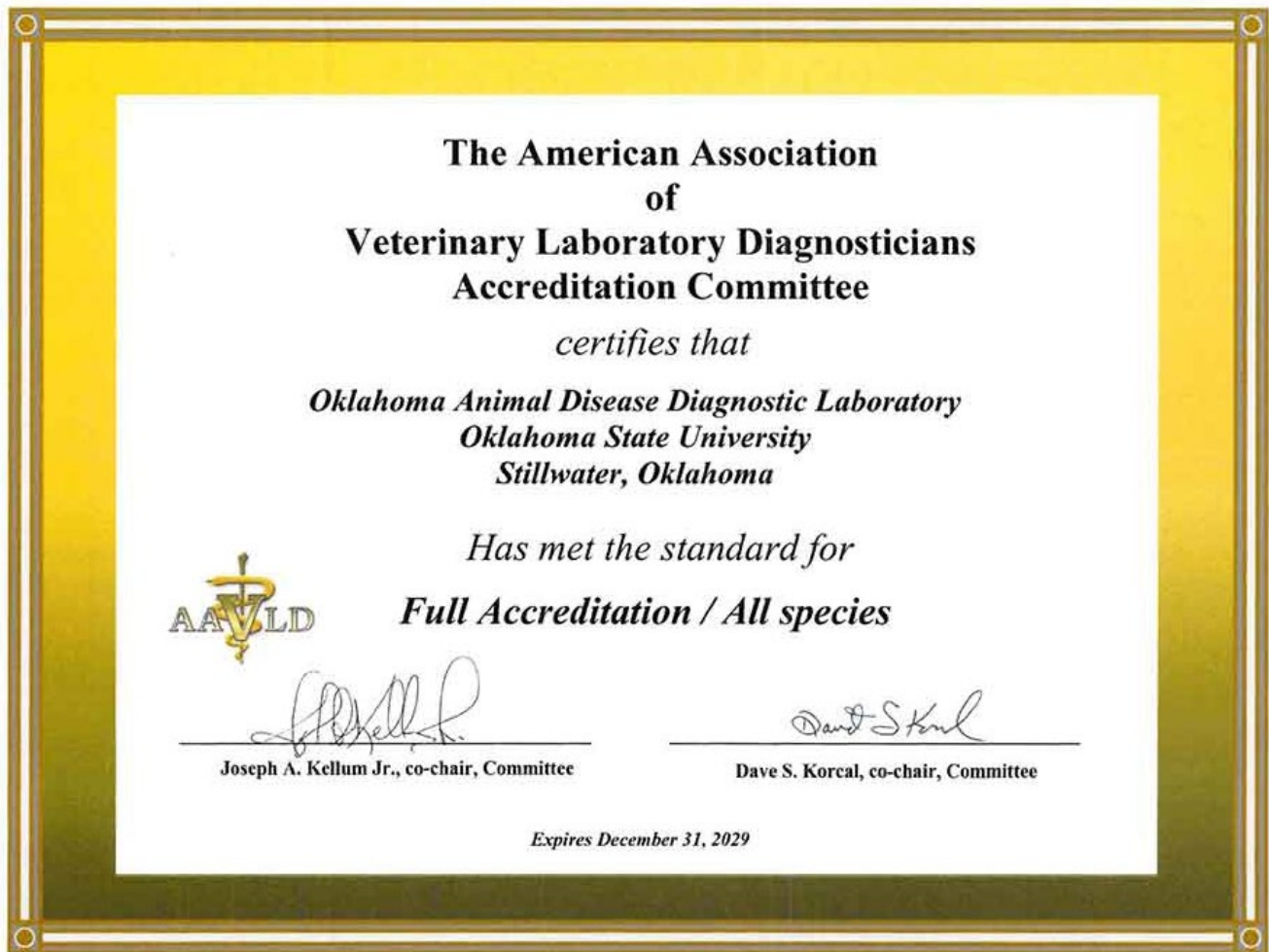
Accreditation; Mission Statement; Vision Statement	1
Message from the Director	2
What Our Stakeholders Say About Us	3
Services, Involvement and Resources	4
Client Service Beyond Business Hours: CY 2024	4
Counties of Oklahoma Served	5
States Served	6
Neighboring States of Oklahoma: 5-Year Trend	7
NAHLN Membership and Vet-LIRN Participation	8
New Tests Introduced	9
Service to the Oklahoma Horse Racing Commission	10
Funded Contracts and Grants	11
Quality System: Proficiency Testing	12
2024 Statistical Data	13
Surveillance and Reportable Disease Testing: 5-Year Trend	13
Prevalence of Major Disease Agents in Diagnostic Samples	18
Antimicrobial Susceptibility Profiles: Bovines and Canines	20
Accessions and General Testing: 5-Year Trend	22
Accessions by Species: 5-Year Trend	23
Accessions by Laboratory Unit: 5-Year Trend	24
Test Numbers by Laboratory Unit	25
Microbiology:	26
Bacteriology: 5-Year Test Trend	26
Bacteriology Test Packages: 5-Year Test Trend	27
Mycology: 5-Year Test Trend	28
Mycoplasmology: 5-Year Test Trend	28
Molecular Diagnostics:	29
Panels: 5-Year Test Trend	29
Molecular Diagnostics: 5-Year Test Trend	29
Parasitology: 4-Year Test Trend	31
Pathology	32
Necropsy: 5-Year Test Trend	32
Necropsy Accessions by Species: 5-Year Test Trend	32
Necropsy Accessions by Test Type: 5-Year Test Trend	33
Necropsy Accessions by Client: 5-Year Test Trend	33
Histology: 5-Year Test Trend	34
Miscellaneous Biopsy-Related Data	35
Serology:	38
Panels and Profiles: 5-Year Test Trend	38
Serology: 5-Year Test Trend	39
Rabies Testing: 5-Year Test Trend	41
Rabies Testing by Species: CY 2024	42
Outsourced Testing: 5-Year Test Trend	43
Toxicology: 5-Year Test Trend	44
Test-Related Supplies Sent to Clients: 5-Year Trend	45
OADDL Board of Advisors	46
Personnel: OADDL Administration, Faculty, Pathology Residents and Staff	47
Instruction of Vet Med and OSU Students	49
Awards, Honors, Certifications	49
Outreach and Presentations to the Public and Clients	50
Attendance at Meetings	50
Posters, Scientific Presentations, Scientific Publications	51
Glossary	54

Cover photos courtesy of Rachel Autry and Emily Cooper.

ACCREDITATION

The Oklahoma Animal Disease Diagnostic Laboratory is accredited as a full service laboratory for all species by the American Association of Veterinary Laboratory Diagnosticians (AAVLD).

Current certification expires December 31, 2029.



MISSION STATEMENT

The Oklahoma Animal Disease Diagnostic Laboratory promotes the overall well-being of animal health through diagnostic testing, instruction of professional veterinary students, and research in diseases of economic importance to Oklahoma and beyond.

VISION STATEMENT

The Oklahoma Animal Disease Diagnostic Laboratory will be recognized as a leader in veterinary diagnostics through excellence in diagnostic service, research efforts leading to improved animal disease testing and surveillance, and sustained accreditation by the American Association of Veterinary Laboratory Diagnosticians.

MESSAGE FROM THE DIRECTOR

This report presents a summary of OADDL's achievements in multiple aspects during calendar year 2024. We remained steadfast on our journey of continuous improvement to maintain, expand, and enhance the quality of our services to various stakeholders. We made great strides, thanks to the strong partnerships and support from our stakeholders, as well as the hard work and dedication of our staff and faculty. Overall, 2024 was very successful, as you will see in the data presented in this report. I wish to highlight some of our major accomplishments here:

- Successfully filling one of our two open anatomic pathologist positions with Dr. Clare Brown, a board-certified pathologist.
- Increased the number of permanent staff positions by 2 FTEs to better handle increased workload.
- Created the position of Associate Director of Operational Enhancements and appointed Dr. Ramachandran to that position.
- Increased the number of faculty positions: the Administration of the College of Veterinary Medicine provided funding for a new clinical assistant professor position to lead our research and development efforts.
- Expanded our infrastructure and capabilities by adding 1,062 sq ft of renovated laboratory space. The new space will be used for our research and development efforts to assure continuous improvement and expansion of our molecular testing capacity.

- The OADDL accreditation site visit occurred in August, resulting in full accreditation being granted by the AAVLD through December 2029.
- The Oklahoma Legislature approved a \$20M allocation for OADDL to be used for equipment purchases and facilities renovation. We intend to use these funds to completely renovate the 1975 wing of the building, replace outdated equipment, and perform deferred maintenance to some of our mechanical systems.

As in the past, this report contains both lab-wide and section-specific productivity data. The report is arranged in such a way that data most useful to practitioners is presented in the first part. Such information includes anti-microbial susceptibility and disease prevalence data. The second part of the report is numbers-heavy and contains several productivity metrics. Overall, the metrics indicate continuous strong growth of OADDL in 2024. We look forward to 2025 and beyond with excitement, as we continue to provide our clients, sponsors, and stakeholders with timely and accurate diagnostic and surveillance services. Happy reading of our 2024 report!



**Jerry T. Saliki, DVM,
PhD, DACVM**

Professor and Director

WHAT OUR STAKEHOLDERS SAY ABOUT US

Client needed STAT brucellosis testing for animals going to a sale. You all rocked and got her results same day. Thank you for the amazing service. They are showing today and greatly appreciate everything you did to get them taken care of.

— ANONYMOUS

1/9/2024

Ryan was incredibly helpful on the phone and really put her at ease. She wanted to give him "kudos."

— MS. SIMON

6/20/2024

Your [Histology Laboratory] staff is remarkable. Very happy with their grossing, their diagrams and most specifically with Brianna's [Laboratory Manager] responsiveness and problem resolution. It is an obvious sign of great leadership.

— DR. JEFF EDWARDS

08/01/2024

OADDL is truly set up for success if faced with an outbreak! Realizing I've used an abundance of explanation points, sorry, but I really do get excited when plans work well.

— DR. JILL DUEL,
USDA-APHIS

8/23/2024

I am so excited for all of you who work at the OADDL. You people are the best. I am looking forward to the changes that are coming.

— BARRY WHITWORTH

05/24/24

... super impressed with the turnaround time of a blue/green algae sample he dropped off ... allowed to work quickly to put up fence to keep animals out of pond.

— DR. YOST

7/10/2024

Ditto to all Jeff said. Great service and we love Brianna [Histology Laboratory Manager], so responsive and sharp.

— DR. BARB POWERS

08/01/24

Regarding an urgent EIA:
Thank you very much! I appreciate you all at the lab.

— BURLINGTON
VETERINARY CENTER

11/22/2024

You are far too kind! There is zero chance I can be good at what I do without great people like you correcting my errors! You are always wonderful, understanding and helpful! It does not go unnoticed!

— BRISTOW VETERINARY
CARE CENTER

MAY 2024

... thank OADDL for taking care of [us] and we appreciate you and your [Molecular Diagnostics Laboratory] team, otherwise our load would have been delayed. I know everyone tries to make the customer happy but I do think you go above and beyond.

— MS. CHAR CHOATE

7/30/24

Client was overwhelmingly appreciative that rabies testing performed after hours on a Friday!

— ANONYMOUS

8/9/24

I'm so excited that OADDL is able and willing to process these incident samples! I've worked with several labs across the country and have the highest regard of OADDL.

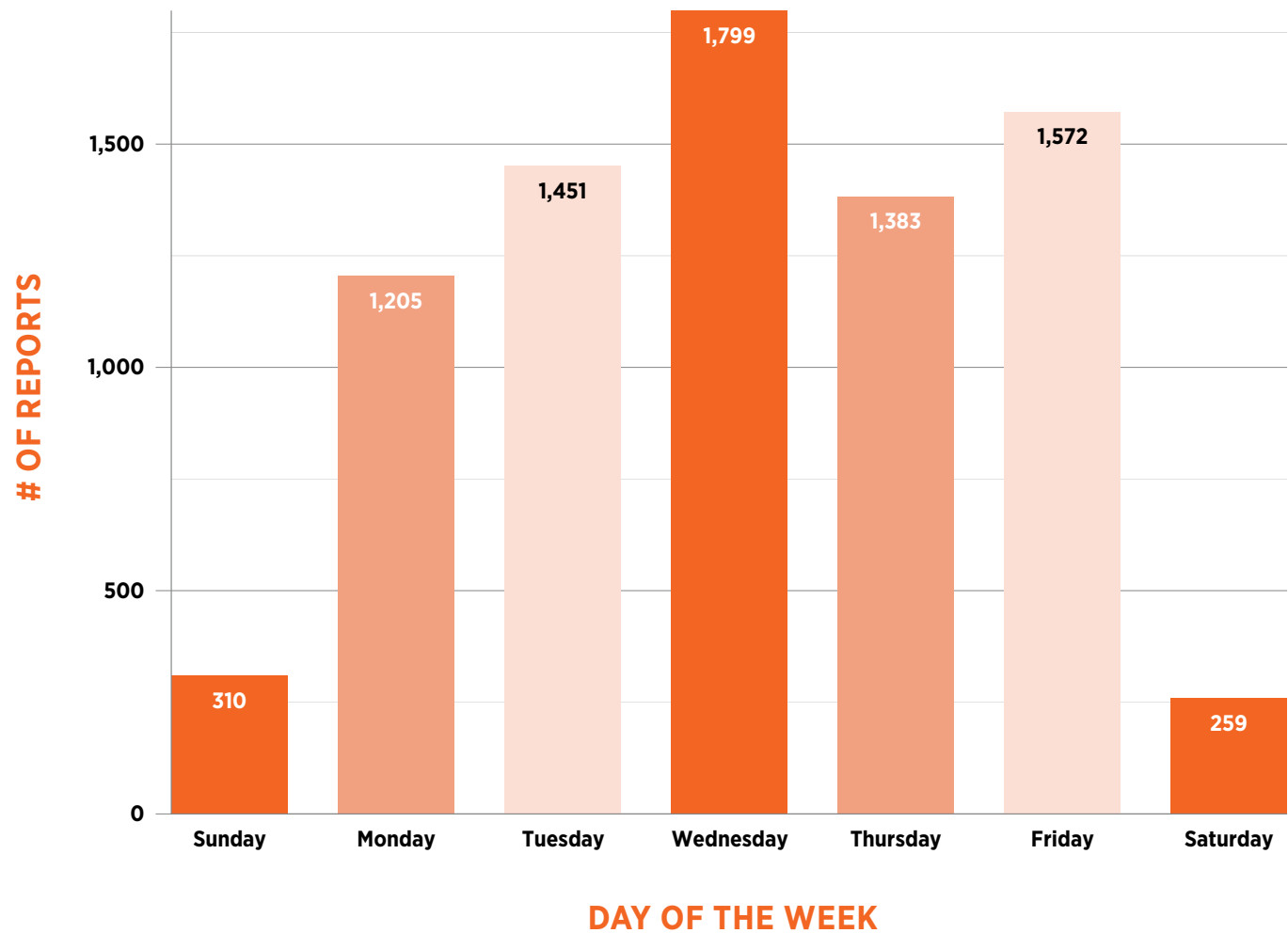
— DR. JILL DUEL,
USDA-APHIS

12/4/2024

CLIENT SERVICE BEYOND BUSINESS HOURS

CY 2024

NUMBER OF AFTER-HOUR REPORTS



TOTAL NUMBER OF AFTER-HOUR REPORTS IN 2024: **7,979**

COUNTIES OF OKLAHOMA SERVED (77)

CY 2024

COUNTY	# OF ACCESSIONS
Adair	296
Alfalfa	98
Atoka	298
Beaver	90
Beckham	301
Blaine	132
Bryan	292
Caddo	295
Canadian	430
Carter	371
Cherokee	197
Choctaw	181
Cimarron	8
Cleveland	774
Coal	139
Comanche	441
Cotton	145
Craig	89
Creek	389
Custer	136
Delaware	92
Dewey	185
Ellis	156
Garfield	636
Garvin	421
Grady	343
Grant	155
Greer	50
Harmon	204
Harper	117

COUNTY	# OF ACCESSIONS
Haskell	170
Hughes	599
Jackson	173
Jefferson	301
Johnston	97
Kay	364
Kingfisher	201
Kiowa	232
Latimer	241
Le Flore	254
Lincoln	653
Logan	692
Love	102
Major	141
Marshall	146
Mayes	331
McClain	729
McCurtain	479
McIntosh	174
Murray	151
Muskogee	443
Noble	395
Nowata	77
Okfuskee	112
Oklahoma	3,460
Okmulgee	308
Osage	190
Ottawa	203
Pawnee	280
Payne	6,538

COUNTY	# OF ACCESSIONS
Pittsburg	256
Pontotoc	212
Pottawatomie	352
Pushmataha	94
Roger Mills	99
Rogers	405
Seminole	79
Sequoyah	484
Stephens	501
Texas	553
Tillman	19
Tulsa	1,088
Wagoner	409
Washington	238
Washita	73
Woods	62
Woodward	72

0-150

151-300

301-500

501-1,000

1,001+

STATES SERVED (47)

CY 2024

STATE	# OF ACCESSIONS
AL	9
AR	1,338
AZ	35
CA	47
CO	92
CT	4
DE	1
FL	262
GA	12
HI	2
IA	377
ID	1
IL	34
IN	6
KS	328
KY	13
LA	8
MA	5
MD	3
MI	5
MN	80
MO	199
MS	3

STATE	# OF ACCESSIONS
MT	3
NC	9
ND	5
NE	7
NH	2
NJ	1
NM	12
NV	3
NY	20
OH	52
OK	23,281
OR	5
PA	68
SC	2
SD	30
TN	12
TX	1,977
UT	2
VA	13
WA	9
WI	7
WY	2



NEIGHBORING STATES OF OKLAHOMA

ACCESSIONS 5-YEAR TREND

STATE	CALENDAR YEAR				
	2020	2021	2022	2023	2024
Arkansas	1,127	1,288	1,263	1,224	1,338
Kansas	303	398	275	292	328
Missouri	97	135	195	163	199
Texas	1,036	1,243	1,351	1,639	1,977
Total Submissions	2,563	3,064	3,084	3,318	3,842



Photo By: Meagan Garris

NAHLN MEMBERSHIP AND VET-LIRN PARTICIPATION



NAHLN MEMBERSHIP

In 2024, OADDL participated in the following activities in support of the NAHLN's missions:

- AMR surveillance – MIC testing and whole genome sequencing of selected clinical bacterial isolates

VET-LIRN MEMBERSHIP

In 2024, OADDL participated in the following activities in support of FDA Vet-LIRN's missions:

- AMR testing of selected clinical bacterial isolates
- Bacterial isolate collection for whole genome sequencing
- Case investigations

NEW TESTS INTRODUCED

CY 2024

MOLECULAR DIAGNOSTICS

Avian Metapneumovirus (AMPV) Real-time PCR Panel (Type A, Type B, Type C)

Sample(s): tracheal swab

Test Fee: \$80.00

TAT: 3 business days

PARASITOLOGY

Asian Longhorned Tick Identification

Sample(s): parasite

Test Fee: \$0.00 for CY 2025

TAT: 1 business day



Photo By: Emily Cooper

SERVICE TO THE OKLAHOMA HORSE RACING COMMISSION



OADDL maintains an annually renewable service contract with the Oklahoma Horse Racing Commission (OHRC). The service provided is to conduct complete necropsies of all horses that die or are euthanized at OHRC-licensed racetracks: Remington Park, Will Rogers Downs, and Fair Meadows. Additionally, drug screens are pursued when indicated. This service falls under the recommendation of the American Association of Equine Practitioners (AAEP) to not only detail the pathologic findings in each case but provide a database for epidemiological studies. The data is used in part to identify the catastrophic musculoskeletal injury (CMI) index, a number representing the rate of fatal musculoskeletal injuries to the number of horses that race. This Oklahoma-specific CMI can then be compared to the national rate of fatal injuries. Thoroughbred racing in the state also falls under the supervision of the Horseracing Integrity and Safety Authority (HISA), a bill passed by Congress that took effect in 2022.

Twenty-seven horses were submitted to OADDL for necropsy during calendar year 2024. This is a 50% decrease in the number of submitted horses in the previous year



Photos By: Dustin Orona Photography

(fifty-three horses in 2023) and well below the submission numbers in prior years. The specifics for each case are compiled to describe the injuries, both musculoskeletal and non-musculoskeletal. From this data, attempts can be made to determine the cause of the injuries and possibly develop prevention strategies. Additionally, injury and fatality patterns may be detected that could prompt more thorough investigation by the OHRC. This collaboration between OADDL and OHRC helps enhance Oklahoma's equine racing industry, while assuring continual improvement in equine welfare.

OADDL FUNDED CONTRACTS AND GRANTS

- OADDL Testing Support for CVM-Vet-LIRN, FDA Vet-LIRN (1U18FD006671); 07/01/2024 – 06/30/2029. PI-**Ramachandran A** \$224,400.
- OSU One Health Collaborative Seed Grant Program funded project: Development of alternative antimicrobials against multidrug-resistant bacteria; 01/15/2024 - 01/15/2025. PI-**Ramachandran A** \$75,000.
- OSU One Health Collaborative Seed Grant Program funded project: Antimicrobial resistance in the ecology of extensive cattle production; 01/15/2024 - 01/15/2025. Co-PI-**Ramachandran A** PI – Dr. Jared Taylor, \$70,000.
- Development and evaluation of pen-side diagnostic assays for Porcine Epidemic Diarrhea. Oklahoma Pork Council; 11/15/2023 – 11/15/2024. PI-**Ramachandran A** \$15,000.
- Development of a molecular point-of-care diagnostic test and a mapping platform for Foot and Mouth disease (FMD) detection and tracking, Joint NAHLN/NADPRP – 2021 Farm Bill; 02/11/2022-02/11/2025. PI-**Ramachandran A** \$473,289.
- Innovative approaches to control bovine mastitis and associated AMR in Nepal, University Grant Commission, Nepal (CRIG-80/81-Ag&F-02), 07/16/2024 – 12/31/2026. **Ramachandran A**; Coinvestigator, PI – Dr. Pushkar Pal.
- Improved Diagnostic Assays for Measles, Mumps, Rubella, and Varicella. Contract#: 75D30124P20096, Centers for Disease Control and Prevention, SBIR 036 Phase 1, 09/30/2024 – 03/30/2025. **Ramachandran A** - Consultant/OSU PI, Collaborative project with MiFi LLC, PI – Dr. Kitty Cardwell.
- NAHLN Level 1 Laboratory funding, OADDL: \$356,300
- Oklahoma Horse Racing Commission-renewed annual contract; fee-for-service.
- Oklahoma State Department of Health: West Nile virus surveillance testing in mosquitoes; \$60,000 for CY 2024.
- Oklahoma State Department of Health: animal rabies testing for the state of Oklahoma FY24 - \$142,891.
- Anivive Lifesciences Inc: specialized histology fee-for-service contract



Photo By: Amy Hoyt

QUALITY SYSTEM: PROFICIENCY TESTING

CY 2024 PROFICIENCY TEST	AGENCY	LAB SECTION*
IBQAS **	AAVLD	Bacteriology (Lab-wide)
African Swine Fever (ASF) Real-Time PCR	NAHLN	Molecular Diagnostics (5)
Anaplasmosis ELISA	USDA	Serology (Lab-wide)
Avian Influenza AGID	USDA	Serology (Lab-wide)
Avian Influenza ELISA	USDA	Serology (Lab-wide)
Avian Influenza (AIV) Real-Time PCR	NAHLN	Molecular Diagnostics (5)
<i>Brucella abortus</i> BAPA	USDA	Serology (5)
<i>Brucella abortus</i> Card	USDA	Serology (5)
<i>Brucella abortus</i> FPA	USDA	Serology (5)
<i>Brucella abortus</i> SPT	USDA	Serology (4)
Classic Swine Fever (CSF) Real-Time PCR	NAHLN	Molecular Diagnostics (5)
Equine Infectious Anemia (EIA) ELISA	USDA	Serology (Lab-wide)
Equine Infectious Anemia (EIA) AGID	USDA	Serology (Lab-wide)
Johne's ELISA	USDA	Serology (Lab-wide)
Johne's Real-Time Direct PCR	USDA	Molecular Diagnostics (Lab-wide)
Johne's Real-Time Pooled Direct PCR	USDA	Molecular Diagnostics (Lab-wide)
MS/MG ELISA ***	PDRC ****	Serology (Lab-wide)
Pseudorabies gB ELISA	USDA	Serology (5)
Rabies Direct Fluorescent Antibody (DFA)	WSLH ‡	Serology (4)
Swine Influenza Virus (SIV) Real-Time PCR	NAHLN	Molecular Diagnostics (5)
VetLIRN Salmonella in Raw Dog Food	VetLIRN	Bacteriology

* (Lab-wide) indicates the laboratory is certified. (#) indicates the number of individuals authorized.

** Internal Bacteriology Quality Assurance Survey

*** *Mycoplasma synoviae* and *Mycoplasma gallisepticum*

**** Poultry Diagnostic and Research Center

‡ Wisconsin State Laboratory of Hygiene

SURVEILLANCE AND REPORTABLE DISEASE TESTING

5-YEAR TREND

SURVEILLANCE AND REPORTABLE DISEASE TESTING	CALENDAR YEAR					% CHANGE
	2020	2021	2022	2023	2024	
African Swine Fever (ASF) PCR ‡	7	-	-	-	1	N/A
Avian Influenza						
Avian Influenza ELISA	2,610	2,734	2,731	4,202	4,192	0%
Avian Influenza PCR ‡	196	243	763	429	2,167	405%
Avian Influenza serum Agar Gel Immunodiffusion (AGID)	6	2	2	18	26	44%
Avian Paramyxovirus-1 (END) PCR ‡	119	62	80	48	5	-90%
<i>Bacillus anthracis</i> Culture	4	29	2	8	4	-50%
Bluetongue Disease						
Bluetongue c-ELISA	38	140	138	100	80	-20%
Bluetongue AGID	45	1	-	6	1	-83%
Bluetongue Virus PCR	48	33	59	45	73	62%
<i>Brucella</i> spp.						
<i>Brucella abortus</i> (BAPA, Card Agglutination, FPA)	6,050	8,892	8,703	21,143	24,207	14%
<i>Brucella abortus</i> Complement Fixation (CF)	12	-	-	1	1	0%
<i>Brucella abortus</i> Standard Plate	9	4	2	-	2	N/A
<i>Brucella canis</i> AGID	2	-	25	17	-	-100%
<i>Brucella canis</i> Card Test	234	261	24	43	-	-100%
<i>Brucella canis</i> IFA	37	36	395	341	224	-34%
<i>Brucella canis</i> 2-Mercaptoethanol Tube Agglutination	2	-	11	17	-	-100%
<i>Brucella melitensis</i> Card Test	20	5	34	8	6	-25%
<i>Brucella ovis</i> ELISA	17	11	31	57	61	7%
<i>Brucella</i> spp. Culture	59	57	66	66	65	-2%
<i>Brucella</i> spp. PCR	2	1	-	-	-	N/A
Chronic Wasting Disease (CWD) IHC PrP	3	-	-	5	-	-100%
Classical Swine Fever (CSF) PCR ‡	7	-	-	-	1	N/A

* Includes In-house and Referral Laboratory testing

‡ NAHLN Messaging Testing

SURVEILLANCE AND REPORTABLE DISEASE TESTING (CONTINUED)

5-YEAR TREND

SURVEILLANCE AND REPORTABLE DISEASE TESTING	CALENDAR YEAR					% CHANGE
	2020	2021	2022	2023	2024	
Coxiella burnetii (Q-Fever)						
Coxiella burnetii (Q-Fever) Complement Fixation (CF)	1	-	15	-	-	N/A
Coxiella burnetii (Q-Fever) c-ELISA	2	4	6	11	10	-9%
Coxiella burnetii (Q-Fever) IFA	1	-	-	-	-	N/A
Coxiella burnetii (Q-Fever) PCR *	7	2	24	28	23	-18%
Eastern Equine Encephalomyelitis (EEE) IgM Capture ELISA	16	24	33	29	4	-86%
Equine Infectious Anemia (EIA)						
Equine Infectious Anemia c-ELISA	1,994	2,436	2,787	3,613	4,258	18%
Equine Infectious Anemia AGID		1	-	7	33	371%
Epizootic Hemorrhagic Disease (EHD) PCR	1	-	7	10	3	-70%
Equine Herpesvirus						
Equine Herpesvirus 1 (EHV-1) Real-Time PCR	211	84	100	134	86	-36%
Equine Herpesvirus 4 (EHV-4) PCR	4	8	15	19	16	-16%
Equine Herpesvirus SN	5	4	7	5	8	60%
Equine Piroplasmosis						
Babesia caballi c-ELISA	259	289	516	549	883	61%
Theileria (Babesia) equi c-ELISA	400	505	1,365	1,133	1,284	13%
Equine Viral Arteritis (EVA) Virus						
Equine Viral Arteritis (EVA) PCR	19	16	16	17	19	12%
Equine Viral Arteritis (EVA) Virus Isolation	2	-	-	-	-	N/A
Equine Viral Arteritis (EVA) SN and VN	64	41	39	45	34	-24%
Francisella tularensis (Tularemia)						
Tularemia PCR	3	21	9	5	3	-40%
Tularemia Plate Agglutination Test		4	48	191	1	-99%
Foot & Mouth Disease Virus Real-Time PCR 🦠	6	2	-	-	1	N/A

* Includes In-house and Referral Laboratory testing

‡ NAHLN Messaging Testing

SURVEILLANCE AND REPORTABLE DISEASE TESTING (CONTINUED)

5-YEAR TREND

SURVEILLANCE AND REPORTABLE DISEASE TESTING	CALENDAR YEAR					% CHANGE
	2020	2021	2022	2023	2024	
Infectious Laryngotracheitis (ILT)						
Infectious Laryngotracheitis Real-Time PCR	3	1	2	4	3	-25%
Johne's Disease						
Johne's Disease Complement Fixation (CF)	3	-	-	-	-	N/A
Johne's Direct Fecal Real-Time PCR (single and pooled)	328	172	106	101	199	97%
Johne's Disease ELISA	2,704	2,673	1,935	3,430	4,561	33%
Leptospirosis-canine						
<i>Leptospira</i> Microscopic Agglutination Test (canine)	25	32	19	21	20	-5%
<i>Leptospira</i> sp. Real-Time PCR (canine)	9	10	4	16	19	19%
<i>Mycoplasma</i> spp. (avian)						
<i>Mycoplasma gallisepticum</i> / <i>Mycoplasma synoviae</i> ELISA	21,599	23,705	24,712	34,800	39,071	12%
<i>Mycoplasma gallisepticum</i> / <i>Mycoplasma synoviae</i> PCR (single)	8	8	11	27	50	85%
<i>Mycoplasma gallisepticum</i> / <i>Mycoplasma synoviae</i> PCR (pooled)	43	1	-	-	-	N/A
<i>Mycoplasma gallisepticum</i> Hemagglutination Inhibition	216	161	161	-	7	N/A
<i>Mycoplasma synoviae</i> Hemagglutination Inhibition	216	161	161	-	7	N/A
Porcine Reproductive and Respiratory Syndrome Virus (PRRSV)						
PRRSV ELISA	1,676	3,637	3,441	3,198	2,786	-13%
PRRSV Real-Time PCR (single and pooled samples)	10,016	7,009	7,886	6,689	9,305	39%

* Includes In-house and Referral Laboratory testing

‡ NAHLN Messaging Testing

SURVEILLANCE AND REPORTABLE DISEASE TESTING (CONTINUED)

5-YEAR TREND

SURVEILLANCE AND REPORTABLE DISEASE TESTING	CALENDAR YEAR					% CHANGE
	2020	2021	2022	2023	2024	
Pseudorabies Virus						
Pseudorabies gB and g1 ELISA	5,462	7,958	8,313	17,605	18,476	5%
Pseudorabies g1 ELISA				26	20	-23%
Pseudorabies PCR	7	4	2	3	-	-100%
Rabies						
Rabies Direct Fluorescent Antibody Test (dFA)	53	250	717	795	782	-2%
Rabies Rapid Fluorescent Focus Inhibition Test (RFFIT) *					2	N/A
Salmonella spp.						
Salmonella spp. Culture	222	198	296	377	186	-51%
Salmonella pullorum Microagglutination Titer	-	6	8	2	3	50%
Salmonella pullorum/typhoid Microagglutination Screen	21,957	23,700	25,200	34,801	39,000	12%
Salmonella pullorum Screening (NPIP culture)	6	5	33	18	13	-28%
SARS-CoV-2 N1 and N2 Gene Real Time PCR ‡	22	44	12	-	-	N/A
Streptococcus equi PCR	20	42	45	54	40	-26%
Swine Influenza Virus (SIV)						
Swine Influenza Virus (SIV) PCR-Domestic Swine ‡	4	-	1	-	-	N/A
Swine Influenza Virus (SIV) PCR (single and pooled samples)	3,093	1,589	753	465	314	-32%
Tritrichomonas foetus						
T. foetus Real-Time PCR (single and pooled samples)	6,597	6,525	6,344	6,867	6,516	-5%
Tritrichomonas foetus Culture	46	2	-	-	-	N/A

* Includes In-house and Referral Laboratory testing

‡ NAHLN Messaging Testing

SURVEILLANCE AND REPORTABLE DISEASE TESTING (CONTINUED)

5-YEAR TREND

SURVEILLANCE AND REPORTABLE DISEASE TESTING	CALENDAR YEAR					% CHANGE
	2020	2021	2022	2023	2024	
Vesicular Stomatitis Virus						
Vesicular Stomatitis Virus Neutralization-Indiana	37	14	28	30	25	-17%
Vesicular Stomatitis Virus Neutralization-New Jersey	37	14	28	30	25	-17%
West Nile Virus						
West Nile Virus IgM Capture ELISA	23	43	41	43	22	-49%
West Nile Virus PCR	1	-	4	5	3	-40%
Total Number of Tests	86,955	93,916	98,316	143,780	159,237	11%



Photo By: Emily Cooper

PREVALENCE OF MAJOR DISEASE AGENTS IN DIAGNOSTIC SAMPLES

CY 2024

DISEASE PREVALENCE BY SPECIES

INTERPRETIVE NOTES:

1. This data includes only agent detection or antibody test results that indicate current infection with the disease agent as opposed to any antibody tests, which simply indicate exposure to the disease agent or vaccination.
2. The prevalence numbers shown here indicate only the prevalence in the diagnostic samples tested and not prevalence of the diseases in the general animal population.

EQUINE DISEASES

DISEASE	# OF TESTS	% POSITIVE
Equine Herpesvirus Type-1 PCR	84	5%
Leptospirosis MAT	7	71%
Leptospirosis PCR	3	0%
Rabies Direct FA	21	10%
<i>Salmonella</i> spp. Culture	34	24%

CAPRINE DISEASES

DISEASE	# OF TESTS	% POSITIVE
BRSV PCR	0	0%
BVDV ELISA	0	0%
BVDV PCR	18	0%
CAE cELISA	817	3%
Johne's Disease ELISA	812	2%
Johne's Disease PCR	14	50%
Leptospirosis MAT	0	0%
Leptospirosis PCR	1	0%
Rabies Direct FA	5	40%

OVINE DISEASES

DISEASE	# OF TESTS	% POSITIVE
BVDV ELISA	0	0%
BVDV PCR	4	0%
CAE cELISA	350	1%
Johne's Disease ELISA	307	3%
Johne's Disease PCR	67	46%
Rabies Direct FA	1	0%

CANINE DISEASES

DISEASE	# OF TESTS	% POSITIVE
Canine Distemper Virus PCR	23	22%
Leptospirosis MAT	22	72%
Leptospirosis PCR	19	5%
Parvovirus PCR	13	54%
Rabies Direct FA	300	1%

FELINE DISEASES

DISEASE	# OF TESTS	% POSITIVE
Cytauxzoonosis	74	7%
Rabies Direct FA	230	1%
Tritrichomoniasis	1	0%

PREVALENCE OF MAJOR DISEASE AGENTS IN DIAGNOSTIC SAMPLES (CONTINUED)

CY 2024

BOVINE DISEASES

DISEASE	# OF TESTS	% POSITIVE
Anaplasmosis cELISA	829	30%
Anaplasmosis PCR	164	36%
<i>Bibersteinia trehalosi</i> Culture	118	2%
BLV ELISA	2,039	48%
BLV PCR	59	32%
BRSV PCR	57	25%
BVDV ELISA	2,786	1%
BVDV PCR	139	6%
Coronavirus PCR	98	23%
<i>Histophilus somni</i> Culture	118	14%
IBR PCR	57	4%
Johne's Disease ELISA	1,801	7%
Johne's Disease PCR	131	28%
Leptospirosis MAT	227	60%
Leptospirosis PCR	10	0%
<i>Mannheimia haemolytica</i> Culture	118	22%
<i>Mycoplasma bovis</i> PCR	60	28%
<i>Pasteurella multocida</i> Culture	118	13%
Rabies Direct FA	42	14%
<i>Salmonella</i> spp. Culture	39	13%
Trichostrongylidosis PCR	13,266	0.1%
<i>Trueperella pyogenes</i> Culture	118	9%

AVIAN DISEASES

DISEASE	# OF TESTS	% POSITIVE
Avian Influenza ELISA	4,192	0.6%
Avian Influenza PCR	1,793	0.7%
<i>Mycoplasma gallisepticum</i> / <i>Mycoplasma synoviae</i> ELISA	39,072	0%
<i>Mycoplasma gallisepticum</i> Hemagglutination Inhibition Test	12	0%
<i>Mycoplasma gallisepticum</i> PCR	58	47%
<i>Mycoplasma synoviae</i> Hemagglutination Inhibition Test	12	0%
<i>Mycoplasma synoviae</i> PCR	58	47%
<i>Salmonella</i> spp. Culture	42	0%
<i>Salmonella pullorum</i> Microagglutination Titer	3	0%
<i>Salmonella pullorum/typhoid</i> Microagglutination Screen	39,000	0%

PORCINE DISEASES

DISEASE	# OF TESTS	% POSITIVE
<i>Brucella abortus</i> BAPA	464	0%
<i>Brucella abortus</i> CARD	15,142	0%
<i>Brucella abortus</i> FPA	3,576	14%
<i>Brucella abortus</i> STP	1	0%
<i>Brucella</i> spp. Culture	65	0%
PEDV PCR	4,683	1%
PRRSV ELISA	2,676	43%
PRRSV PCR (Industry Clients)	9,305	6%
PRRSV PCR (Non-Industry Clients)	8	0%
PRV gB ELISA	18,756	< 1%
Rabies Direct FA	1	0%

ANTIMICROBIAL SUSCEPTIBILITY PROFILES: BOVINES AND CANINES

CY 2024

NOTE: Data reported as: % susceptible (# isolates tested)

BOVINES

ANTIBIOTIC	<i>Mannheimia haemolytica</i>	<i>Histophilus somni</i>	<i>Pasteurella multocida</i>
Ceftiofur	100% (25)	100% (14)	100% (13)
Danofloxacin	46% (24)	79% (14)	77% (13)
Enrofloxacin	46% (24)	79% (14)	92% (13)
Florfenicol	84% (25)	79% (14)	77% (13)
Gamithromycin	40% (25)	50% (14)	62% (13)
Gentamicin	48% (25)		
Penicillin	58% (24)	64% (14)	92% (13)
Spectinomycin	46% (24)	36% (14)	62% (13)
Tetracycline	33% (24)		
Tildipirosin	80% (25)	93% (14)	62% (13)
Tilmicosin	33% (24)	50% (14)	62% (13)
Trimethoprim/ Sulfamethoxazole	100% (25)		
Tulathromycin	40% (25)	50% (14)	62% (13)
Tylosin (Tartrate/ Base)	0% (25)		

CANINES

ANTIBIOTIC	URINE		EARS		SKIN & WOUNDS
	<i>Escherichia coli</i>	<i>Staph. pseudintermedius</i>	<i>Pseudomonas aeruginosa</i>	<i>Staph. pseudintermedius</i>	<i>Staph. pseudintermedius</i>
Amikacin		100% (60)			81% (16)
Amoxicillin/ Clavulanic Acid	67% (36)	100% (52)	67% (33)	91% (23)	0% (16)
Ampicillin	0% (32)	100% (41)	0% (27)	0% (14)	0% (16)
Cefalexin		78% (60)			
Cefazolin	67% (36)	79% (62)	67% (33)	91% (23)	0% (16)
Cefovecin	61% (31)	79% (62)	67% (33)	91% (23)	
Cefpodoxime	52% (25)	79% (62)	67% (33)	91% (23)	
Ceftazidime		88% (60)			100% (16)

ANTIMICROBIAL SUSCEPTIBILITY PROFILES: BOVINES AND CANINES *(CONTINUED)*

CY 2024

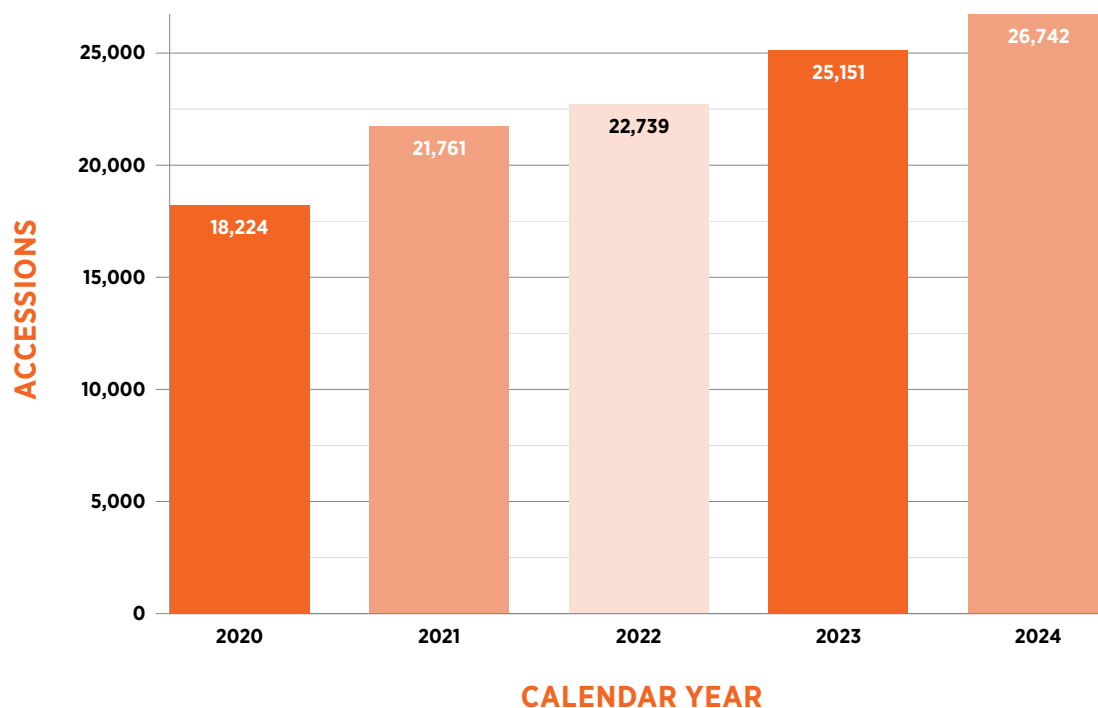
CANINES *(CONTINUED)*

ANTIBIOTIC	URINE		EARS		SKIN & WOUNDS
	<i>Escherichia coli</i>	<i>Staph. pseudintermedius</i>	<i>Pseudomonas aeruginosa</i>	<i>Staph. pseudintermedius</i>	<i>Staph. pseudintermedius</i>
Cephalothin	61% (31)		67% (33)	91% (23)	
Chloramphenicol	78% (36)	37% (60)	85% (33)	83% (23)	0% (16)
Clindamycin	61% (36)		82% (33)	78% (23)	
Doxycycline	53% (30)	24% (62)		65% (0)	0% (16)
Enrofloxacin	57% (30)	85% (62)	61% (33)	78% (23)	
Erythromycin	58% (36)		79% (33)	78% (23)	
Gentamicin	72% (36)	97% (62)	70% (33)	83% (23)	88% (16)
Imipenem	67% (36)	100% (62)	67% (33)	91% (23)	75% (16)
Marbofloxacin	60% (30)	89% (62)	67% (33)	78% (23)	
Minocycline	62% (34)		67% (33)	74% (23)	
Nitrofurantoin			100% (33)		
Orbifloxacin		85% (60)			
Oxacillin + 2% NaCl	67% (36)		67% (33)	91% (23)	
Penicillin	0% (32)		0% (27)	0% (14)	
Piperacillin/ Tazobactam		98% (60)			63% (16)
Pradofloxacin	41% (22)	85% (62)	58% (33)	78% (23)	
Rifampin	100% (36)		100% (33)	100% (23)	
Tetracycline	44% (34)	92% (61)	100% (22)	52% (23)	0% (16)
Trimethoprim/ Sulfamethoxazole	47% (36)	89% (62)	73% (33)	91% (23)	0% (16)
Vancomycin	100% (36)		100% (33)	100% (23)	

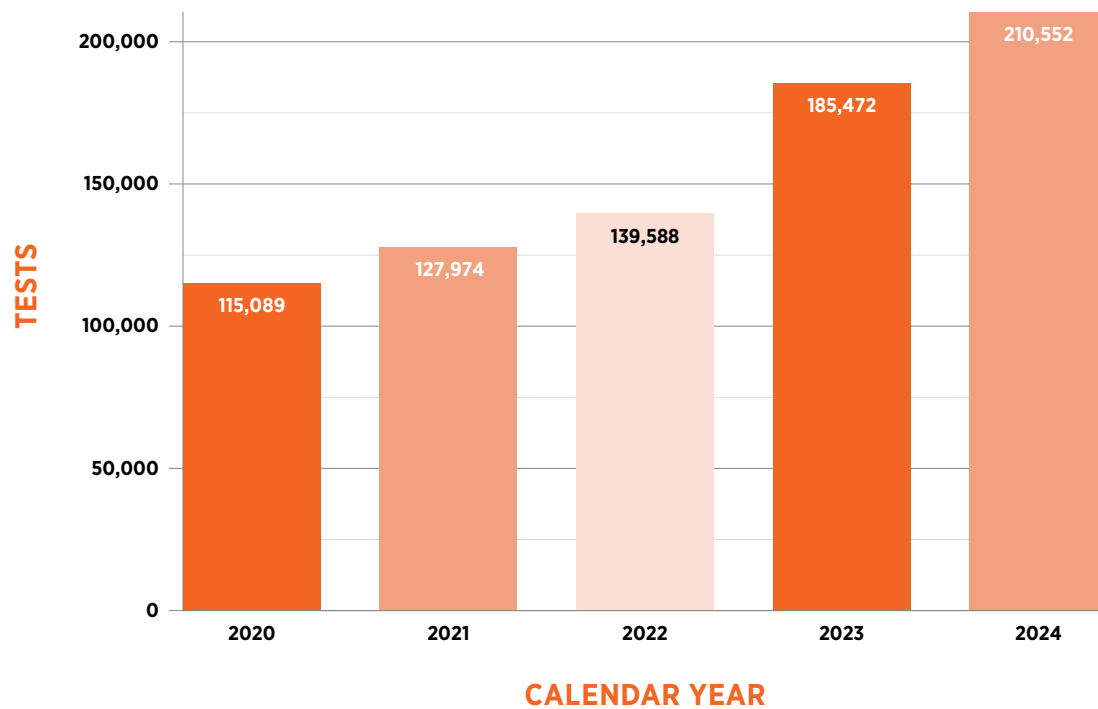
ACCESSIONS AND GENERAL TESTING

5-YEAR TREND

5-YEAR ACCESSION TREND



5-YEAR TEST TREND

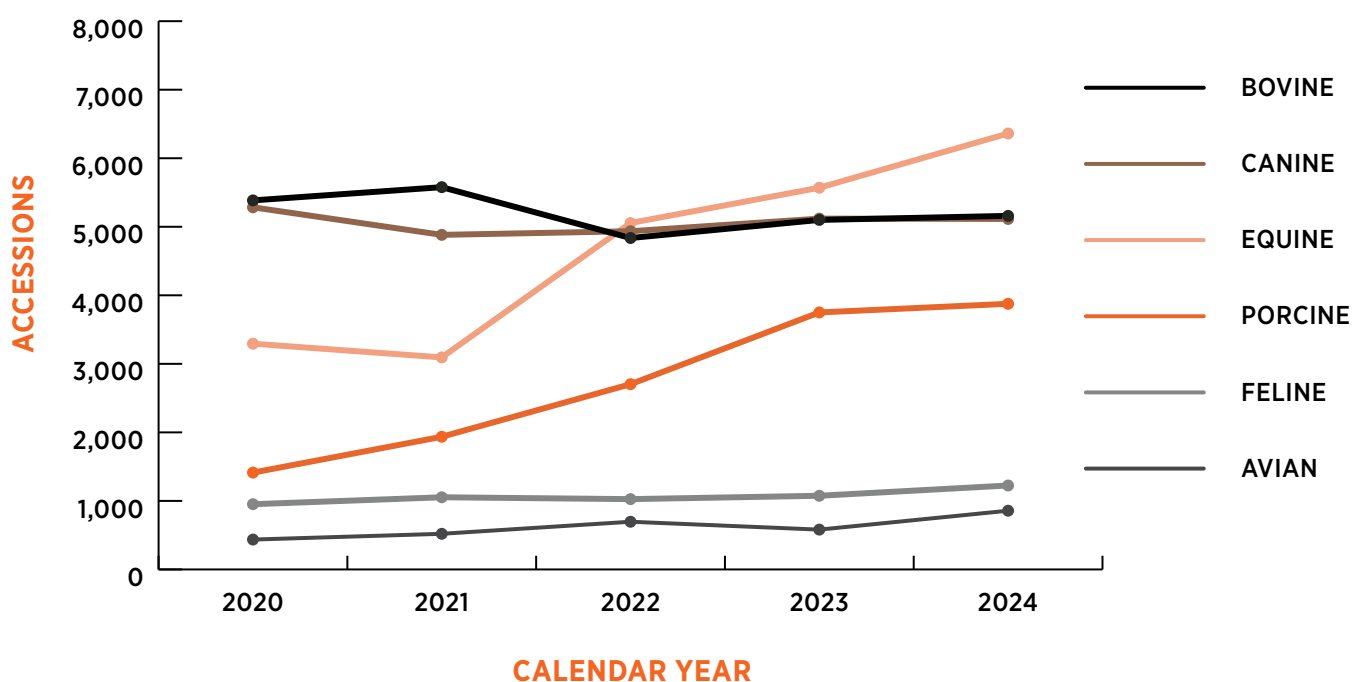


ACCESSIONS BY SPECIES

5-YEAR TREND

SPECIES	CALENDAR YEAR					% CHANGE
	2020	2021	2022	2023	2024	
Equine	3,094	3,837	5,055	5,570	6,361	14%
Bovine	5,578	5,251	4,836	5,100	5,159	1%
Canine	4,882	5,127	4,935	5,119	5,114	0%
Porcine	1,936	2,718	2,703	3,750	3,876	3%
Feline	1,053	1,069	1,026	1,075	1,225	14%
Avian	436	520	696	581	857	48%
Sm An Other	280	344	499	514	483	-6%
Caprine	322	435	469	488	415	-15%
Ovine	81	115	138	158	172	9%
Lg An Other	49	53	35	53	79	49%
Alpaca/Llama	50	54	46	70	69	-1%
Multiple Species	27	38	35	52	38	-27%
Camelid	11	16	12	9	22	144%
Caged Pet Mammal	13	7	4	2	11	450%

5-YEAR ACCESSION TREND: TOP 6 SPECIES



ACCESSIONS BY LABORATORY UNIT

5-YEAR TREND

YEAR	MICROBIOLOGY*	MOLECULAR DIAGNOSTICS	PARASITOLOGY	PATHOLOGY**	SEROLOGY***	TOXICOLOGY	TOTAL # OF ACCESSIONS
2024	1,631	6,327	1,756	5,604	11,145	279	26,742
2023	1,706	5,550	1,875	5,420	10,288	312	25,151
2022	1,906	5,763	1,570	5,286	7,916	298	22,739
2021	2,260	5,885	1,809	5,329	6,234	244	21,761
2020	2,200	5,317		5,093	5,353	261	18,224

* Includes Bacteriology, Mycology and Mycoplasmaology

** Includes Histology and Pathology (Necropsy)

*** Includes Serology and Rabies



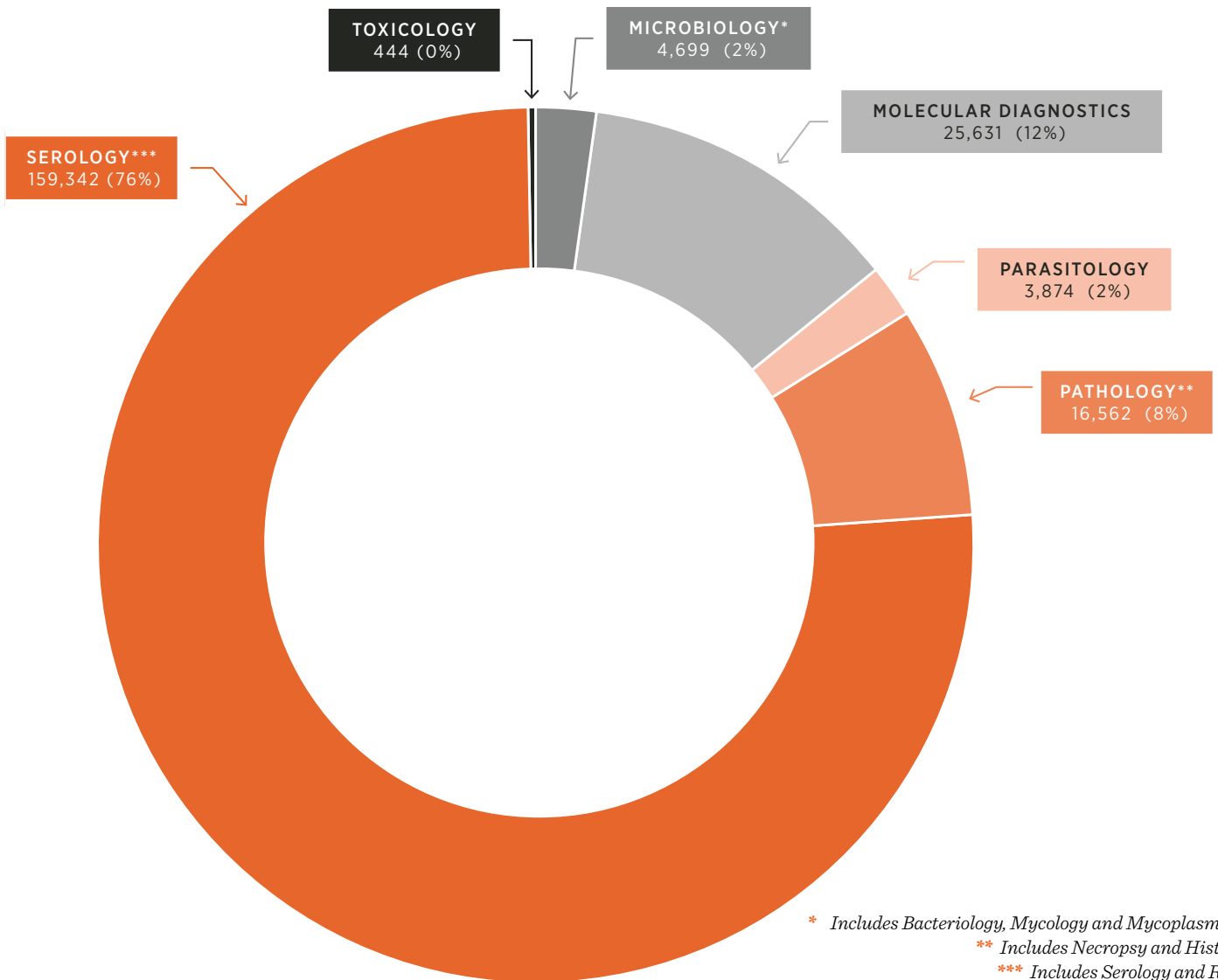
Photo By: Shannon Caseltine

TEST NUMBERS BY LABORATORY UNIT

5-YEAR TREND

YEAR	MICROBIOLOGY*	MOLECULAR DIAGNOSTICS	PARASITOLOGY	PATHOLOGY**	SEROLOGY***	TOXICOLOGY
2024	4,699	25,631	3,874	16,562	159,342	444
2023	4,514	20,618	4,857	12,101	142,782	600
2022	4,966	30,988	2,881	6,976	93,312	465
2021	5,537	22,573	2,484	7,476	89,485	419
2020	5,010	26,719		6,691	76,170	499

NUMBER OF TESTS PER LAB UNIT: CY 2024



BACTERIOLOGY

5-YEAR TEST TREND

TEST	CALENDAR YEAR					% CHANGE
	2020	2021	2022	2023	2024	
Aerobic Culture ‡	1,733	1,957	1,727	1,223	1,417	16%
Antibiotic Susceptibility Test ‡	1,050	1,196	1,097	1,210	1,128	-7%
Research Testing	636	597	437	413	1,027	149%
Anaerobic Culture ‡	545	554	508	388	351	-10%
<i>Salmonella</i> spp. Culture ‡	168	149	246	277	126	-55%
Milk Culture	107	94	87	112	104	-7%
<i>Clostridium perfringens</i> Culture	119	213	204	213	88	-59%
<i>Brucella</i> spp. Culture	59	57	66	66	65	-2%
Salmonella Culture (Environmental Sample)	54	49	50	100	60	-40%
Bacteria Whole-Gene Sequencing	0	0	0	30	57	90%
<i>Campylobacter fetus</i> Culture	228	162	87	61	54	-11%
Blue Green Algae-Microscopic Screening	25	50	58	65	46	-29%
<i>Campylobacter jejuni</i> Culture	39	48	152	169	41	-76%
<i>Clostridium</i> sp. Culture	26	35	31	45	41	-9%
<i>Salmonella pullorum</i> Screening	6	5	33	18	13	-28%
<i>Bacillus anthracis</i> Culture	4	29	2	8	4	-50%
All Other Tests	67	196	14	9	2	-78%
Total Tests Per Year	4,866	5,391	4,799	4,407	4,624	5%

‡ Includes individual tests from Test Packages

BACTERIOLOGY TEST PACKAGES

5-YEAR TEST TREND

TEST PACKAGE	CALENDAR YEAR					% CHANGE
	2020	2021	2022	2023	2024	
Aerobic Culture and up to 2 Antibiotic Susceptibilities	374	409	389	432	371	-14%
Anaerobic Culture, Aerobic Culture and up to 2 Antibiotic Susceptibilities	385	480	445	369	336	-9%
Urine Culture and up to 2 Antibiotic Susceptibilities	329	334	221	213	306	44%
Fungal Culture, Aerobic Culture and up to 2 Antibiotic Susceptibilities	58	62	48	50	40	-20%
Salmonella Culture with Antibiotic Susceptibility	29	34	36	44	31	-30%
Total Test Packages Per Year	1,175	1,319	1,139	1,108	1,084	-2%



Photo By: Sara Smith

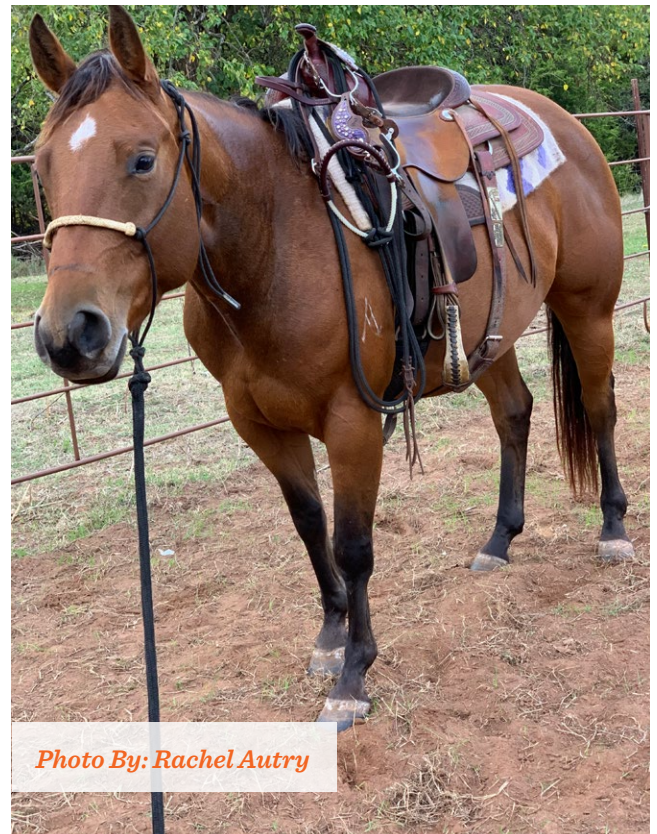


Photo By: Rachel Autry

MICROBIOLOGY (CONTINUED)

MYCOLOGY

5-YEAR TEST TREND

TEST	CALENDAR YEAR					% CHANGE
	2020	2021	2022	2023	2024	
Fungal Culture *	124	117	106	92	66	-28%
Fungal Identification	0	0	0	0	1	N/A
Histoplasma Enzyme Immunoassay **	0	6	53	0	1	N/A
Referral Lab Testing	0	0	1	1	0	-100%
Research Testing	12	8	0	0	0	N/A
Total Tests Per Year	136	131	160	93	68	-27%

* Includes individual testing from Test Package

** In-house and Referral Laboratory Testing

MYCOPLASMOLOGY

5-YEAR TEST TREND

TEST	CALENDAR YEAR					% CHANGE
	2020	2021	2022	2023	2024	
<i>Mycoplasma spp.</i> Culture	8	15	7	14	7	-50%
Total Tests Per Year	8	15	7	14	7	-50%



Photo By: Emily Cooper

MOLECULAR DIAGNOSTICS

PANELS

5-YEAR TEST TREND

TEST	CALENDAR YEAR					% CHANGE
	2020	2021	2022	2023	2024	
Bovine Respiratory Disease PCR Panel-Comprehensive *	49	71	71	60	57	-5%
Bovine Viral Respiratory PCR Panel-Basic **	0	3	0	2	1	-50%
Total Panels Per Year	49	74	71	62	58	-6%

* Includes Bovine Viral Diarrhea Virus (BVDV), Bovine Respiratory Syncytial Virus (BRSV), Infectious Bovine Rhinotracheitis Virus (IBR), Bovine Coronavirus (BCV), and *Mycoplasma bovis*

** Includes BVDV, BRSV, and IBR

MOLECULAR DIAGNOSTICS

5-YEAR TEST TREND

TEST	CALENDAR YEAR					% CHANGE
	2020	2021	2022	2023	2024	
PRRS Virus Real-Time PCR (single and pooled) †	10,094	7,009	7,886	6,689	9,305	39%
Porcine Coronavirus Multiplex PCR (single and pooled)	4,627	4,784	11,744	3,578	4,688	31%
<i>Tritrichomonas foetus</i> Real-Time PCR	5,107	5,009	4,586	4,830	4,564	-6%
Avian Influenza PCR	196	243	763	429	2,167	405%
<i>Tritrichomonas foetus</i> Real-Time PCR (pooled)	1,490	1,516	1,758	2,037	1,952	-4%
Mosquito Identification and WNV PCR	0	0	370	494	842	70%
Swine Influenza Virus PCR (single and pooled) †	3,110	1,589	753	465	314	-32%
Johne's Direct Fecal Real-Time PCR (single and pooled)	328	172	106	101	199	97%
<i>Anaplasma marginale</i> PCR	95	122	78	127	178	40%
Bovine Viral Diarrhea Virus PCR *	146	166	165	156	173	11%
Infectious Bovine Rhinotracheitis (IBR) Virus PCR *	91	110	111	109	105	-4%
Bovine Coronavirus PCR *	93	90	101	90	99	10%
Porcine <i>Mycoplasma hyopneumoniae</i> Real-Time PCR (single and pooled)	5	412	677	132	88	-33%

† In-house and/or Referral Laboratory Testing

* Includes individual testing from Molecular Diagnostics Panels

MOLECULAR DIAGNOSTICS (CONTINUED)

MOLECULAR DIAGNOSTICS (CONTINUED)

5-YEAR TEST TREND

TEST	CALENDAR YEAR					% CHANGE
	2020	2021	2022	2023	2024	
Equine Herpesvirus 1 (EHV-1) Real-Time PCR	211	84	100	134	86	-36%
<i>Cytauxzoon felis</i> PCR	8	16	17	65	74	14%
Bluetongue Virus PCR	48	33	59	45	73	62%
<i>Mycoplasma bovis</i> PCR *	55	83	72	67	61	-9%
BRSV PCR *	57	205	71	62	58	-6%
<i>Mycoplasma gallisepticum</i> / <i>M. synoviae</i> PCR (single and pooled)	51	9	11	27	50	85%
<i>Clostridium perfringens</i> Multiplex PCR	56	44	65	144	49	-66%
Bovine Leukemia Virus PCR †	7	0	1	11	40	264%
<i>Leptospira</i> sp. Real-Time PCR	38	32	30	33	40	21%
<i>Streptococcus equi</i> PCR	20	42	45	54	40	-26%
Canine Distemper Virus PCR	31	46	50	30	32	7%
Rotavirus Antigen ELISA	42	30	21	34	25	-26%
<i>Coxiella burnetii</i> (Q-Fever) PCR	7	2	24	28	23	-18%
Canine Respiratory Panel (qPCR) †	56	78	42	70	22	-69%
<i>Chlamydophila</i> spp. PCR †	7	7	18	17	21	24%
Metagenomics PCR †	3	0	0	0	21	N/A
<i>Rickettsia</i> spp.	0	3	27	22	20	-9%
Equine Viral Arteritis PCR †	19	16	16	17	19	12%
Equine Herpesvirus 4 (EHV-4) PCR	4	8	15	19	16	-16%
Marek's Disease PCR †	0	4	5	4	16	300%
Equine Influenza PCR	3	1	9	6	14	133%
Canine Parvovirus PCR	53	50	139	144	13	-91%
Feline Respiratory Panel (qPCR) †	24	8	25	48	12	-75%
<i>Lawsonia intracellularis</i> PCR †	2	4	1	9	11	22%
Canine Herpesvirus PCR	15	29	27	21	10	-52%
All Other Tests	520	517	1,000	270	111	-59%
Total Tests Per Year	26,719	22,573	30,988	20,618	25,631	24%

† In-house and/or Referral Laboratory Testing

* Includes individual testing from Molecular Diagnostics Panels

PARASITOLOGY

PARASITOLOGY

4-YEAR TEST TREND

TEST	CALENDAR YEAR				% CHANGE
	2021	2022	2023	2024	
Fecal Egg Count-McMaster Method	20	268	168	817	386%
Centrifugal Flotation/Direct Smear	798	651	771	813	5%
Centrifugal Fecal Flotation	336	514	1,515	617	-59%
Fecal Egg Count - Wisconsin Method	45	62	122	596	389%
Parasitology Research	62	219	1,291	573	-56%
Fecal Egg Count	380	453	310	108	-65%
Canine Heartworm Antigen Test	319	219	143	94	-34%
Modified Knott's	252	126	120	73	-39%
Fecal Sedimentation	63	88	95	47	-51%
Fecal Culture / ID	2	119	38	46	21%
Gross Parasite Identification	71	39	19	19	0%
Giardia Antigen	39	41	20	15	-25%
Heartworm Antigen Heat Reversal	4	0	91	12	-87%
Double Centrifugal Fecal Flotation Test	0	0	0	11	N/A
Fecal Direct Smear	0	4	4	9	125%
Tick Identification	11	0	111	8	-93%
Baermann Method	34	21	4	5	25%
All Other Tests	48	57	35	11	-69%
Total Tests Per Year	2,484	2,881	4,857	3,874	-20%

PATHOLOGY

NECROPSY

5-YEAR TEST TREND

TEST	CALENDAR YEAR					% CHANGE
	2020	2021	2022	2023	2024	
Gross Necropsy	757	876	843	830	809	-3%
Large Biopsy Specimen (10 cm+)	-	-	-	-	25	N/A
Tissue Preparation	4	2	16	15	21	40%
Spinal Examination	10	6	21	8	11	38%
Bovine Spongiform Encephalopathy (BSE)	0	0	0	1	1	0%
Chronic Wasting Disease	3	0	1	5	0	N/A
Small Animal Limb Examination with Disposal	0	1	2	0	0	N/A
Total Tests Per Year	827	1,135	883	859	867	1%

NECROPSY ACCESSIONS BY SPECIES

5-YEAR TREND

SPECIES	CALENDAR YEAR					% CHANGE
	2020	2021	2022	2023	2024	
Canine	194	230	214	170	182	7%
Avian	65	99	108	109	147	35%
Bovine	165	141	146	152	142	-7%
Equine	118	141	128	135	105	-22%
Feline	59	58	52	71	61	-14%
Small Animal Other	58	57	54	59	58	-2%
Caprine	46	70	69	74	52	-30%
Ovine	23	28	24	20	19	-5%
Large Animal Other	4	11	5	1	13	1200%
Porcine	18	25	23	25	12	-52%
Alpaca	5	5	10	9	9	0%
Non-Human Primate	0	3	2	1	6	500%
Caged Pet Mammal	1	6	4	6	4	-33%
Llama	1	1	2	4	0	-100%
Camel	0	1	2	0	0	N/A

NECROPSY ACCESSIONS BY TEST TYPE

5-YEAR TREND

TEST	CALENDAR YEAR					% CHANGE
	2020	2021	2022	2023	2024	
Necropsy only	67	65	52	51	46	-10%
Necropsy + Histology only	287	340	322	378	378	0%
Necropsy + Histology + Other Testing	379	457	459	365	364	0%
Necropsy + Other Testing (no Histology)	24	14	10	36	21	-42%

NECROPSY ACCESSIONS BY CLIENT

5-YEAR TREND

ACCESSION TEST	CALENDAR YEAR					% CHANGE
	2020	2021	2022	2023	2024	
Total # of Necropsy Accessions	757	876	843	830	809	-3%
VTH * Accessions	261	288	210	225	216	-4%
Client Accessions (not VTH)	496	588	633	605	593	-2%

* CVM Veterinary Teaching Hospital



Photo By: Amy Hoyt

HISTOLOGY

5-YEAR TEST TREND

TEST	CALENDAR YEAR					% CHANGE
	2020	2021	2022	2023	2024	
Slide Preparation-No Interpretation (Commercial Clients)	232	350	584	4,870	8,564	76%
Histo-Short Report	2,950	2,818	2,425	2,683	2,883	7%
Special Stains	1,177	1,456	1,556	1,853	1,813	-2%
Histo Necropsy Workload	644	747	723	691	643	-7%
Decalcification	141	138	87	258	633	145%
H & E Recut	65	76	92	180	320	78%
Regress Biopsy-No Interpretation (Commercial Clients)	-	-	-	123	196	59%
Histo-Long (Detailed) Report	195	231	174	117	149	27%
Additional Biopsy > 3 Tissues Submitted	71	105	104	98	111	13%
Poultry Histopathology	20	53	49	65	103	58%
Zoo Pathology Surveillance	88	113	104	113	100	-12%
Immunohistochemistry (IHC) §	83	113	60	61	51	-16%
H & E Slide for Research	74	41	67	52	35	-33%
Special Stains for Research	7	16	16	15	30	100%
Unstained Sections for Research	30	19	20	19	22	16%
Duplicate H & E	6	5	9	6	10	67%
Serial Sections, Unstained	-	-	3	12	9	-25%
IHC for PI BVDV §	36	8	6	2	6	200%
Paraffin Scrolls For PCR	25	26	6	2	6	200%
H & E Slide for Teaching	5	6	2	9	5	-44%
All Other Tests	15	20	6	13	6	-54%
Total Tests Per Year	5,864	6,341	6,093	11,242	15,695	40%

§ Referral laboratory testing

MISCELLANEOUS BIOPSY-RELATED DATA

5-YEAR TREND

BIOPSY ACCESSION DATA	CALENDAR YEAR					% CHANGE
	2020	2021	2022	2023	2024	
Biopsy Only Accessions	2,758	2,643	2,425	2,403	2,581	7%
Biopsy + Other Testing (except Necropsy) Accessions	135	128	119	96	80	-17%
Number of Short-Format Reports	2,950	2,818	2,627	2,683	2,883	7%
Number of Detailed-Format Reports	195	231	174	117	149	27%
Biopsy-No interpretation (Commercial Clients)	1	232	584	4,870	8,564	76%



Photo By: Stephanie Taylor

PATHOLOGY (CONTINUED)

MISCELLANEOUS BIOPSY-RELATED DATA (CONTINUED)

5-YEAR TREND

SPECIAL STAIN	CALENDAR YEAR					% CHANGE
	2020	2021	2022	2023	2024	
GMS	357	413	429	500	463	-7%
Gram's	321	346	392	479	400	-16%
Toluidine Blue	39	51	46	122	182	49%
PAS	48	104	114	92	142	54%
Fite's Acid Fast	73	83	139	168	127	-24%
Giemsa	37	93	75	101	113	12%
Acid Fast (Ziehl-Neelsen)	148	137	99	75	90	20%
Copper (Rhodanine)	19	25	27	32	60	88%
Trichrome	27	40	58	75	56	-25%
Melanin-Bleach	16	26	27	40	52	30%
Fontana-Masson	10	18	16	28	36	29%
Iron (Prussian Blue)	27	42	38	52	34	-35%
Congo Red	19	33	33	31	27	-13%
Von Kossa	13	13	21	23	14	-39%
Steiner	14	15	11	13	9	-31%
Bile/Bilirubin (Hall's)	9	5	7	10	7	-30%
PAS without Diatase	0	0	12	4	1	-67%
PTAH	0	12	12	8	0	-33%
Alcian Blue 2.5	0	0	0	0	0	N/A
Luxol Fast Blue	0	0	0	0	0	N/A
Total Stains	1,177	1,456	1,556	1,853	1,813	-2%

PATHOLOGY (CONTINUED)

MISCELLANEOUS BIOPSY-RELATED DATA (CONTINUED)

5-YEAR TREND

BIOPSY SLIDES	CALENDAR YEAR					% CHANGE
	2020	2021	2022	2023	2024	
Total Number of Biopsy Slides	14,039	14,720	13,166	10,729	10,369	-3%
Total Number of Biopsy Slides (Commercial Clients)	-	-	-	12,914	22,790	76%
H&E Stains						
Total Number of H&E Slides	12,253	12,312	11,095	21,894	28,839	32%
H&E From Biopsy	7,144	6,353	5,102	4,708	5,202	10%
H&E From Biopsy (Commercial Clients)	-	-	-	11,718	20,368	74%
H&E From Necropsy	3,634	4,382	3,780	3,413	1,589	-53%
H&E - Research	457	249	1,155	395	188	-52%
H&E- Teaching	170	216	68	12	7	-42%
IHC Stains						
IHC Slides for BVDV PI (Ear Notch)	8	6	-	2	6	200%
IHC Slides (not including BVDV PI)	69	69	82	141	47	-67%
IHC Slides (Commercial Clients)	-	-	-	85	145	71%
Unstained Slides						
Unstained Slides - Research	484	916	452	426	489	15%
Unstained Slides (Commercial Clients)	-	-	-	890	1,820	104%
Special Stains						
Special Stains Slides	1,177	1,456	1,556	1,632	1,356	-17%
Special Stains Slides (Commercial Clients)	-	-	4	221	457	107%

SEROLOGY

PANELS AND PROFILES

5-YEAR TEST TREND

PANEL/PROFILE	TESTS	CALENDAR YEAR					% CHANGE
		2020	2021	2022	2023	2024	
Pseudorabies gB ELISA & <i>Brucella</i>	Pseudorabies gB ELISA, <i>B. abortus</i> Card Test	3,773	4,466	4,596	13,999	15,141	8%
Swine Serology Panel 1 **	Brucella Fluorescence Polarization Assay (FPA), Pseudorabies gB ELISA, PRRSV ELISA	1,665	3,029	3,365	3,173	3,041	-4%
Bovine Serum ELISA Panel	BVDV Antigen Capture ELISA, BLV ELISA, Johnes' ELISA	300	261	385	658	969	47%
Bovine Respiratory SN Profile 1 *	IBR, BVDV Type 1, PI-3, BRSV	0	11	290	176	947	438%
Swine Serology Panel 2 *	Pseudorabies gB ELISA, <i>B. abortus</i> FPA	0	54	303	413	560	36%
Bovine Respiratory SN Profile 2 *	IBR, BVDV Type 1, BVDV Type 2, PI-3, BRSV	0	179	183	946	282	-70%
Small Ruminant Biosecurity Panel *	CAE/OPP cELISA, Johnes ELISA	0	68	200	194	256	32%
Abortion Panel Bovine	BVDV Antigen Capture ELISA, BVD Type 1 SN, IBR SN, Lepto MAT, Neospora ELISA, <i>B. abortus</i>	224	185	161	194	186	-4%
Canine Tick Profile	<i>E. canis</i> SNAP, RMSF IFA, Lyme, <i>Anaplasma phagocytophilum</i> / <i>A. platys</i>	46	28	40	75	59	-21%
Goat Abortion Panel **	Buetongue Virus AGID, <i>B. abortus</i> AGGL, Q-Fever ELISA, <i>Toxoplasma</i> IgG IFA, <i>Leptospira</i> MAT	3	1	1	6	1	-83%
Tick Panel ELISA	<i>Anaplasma phagocytophilum</i> / <i>A. platys</i> , <i>Ehrlichia canis</i> / <i>E. ewingii</i> , <i>Borrelia burgdorferi</i>	2	1	0	0	0	N/A
Bovine Respiratory Panel **	BRSV VN, BVDV-1a VN, BVDV-1b VN, BVDV-2 VN, IBR VN, <i>H. somni</i> AGGL, <i>M. haemolytica</i> AGGL, PI-3 VN	10	0	0	0	0	N/A
Total Panels/Profiles Per Year		6,023	8,283	9,524	19,834	21,442	8%

* Panel introduced in CY 2021

** Panel introduced in CY 2020

SEROLOGY (CONTINUED)

SEROLOGY

5-YEAR TEST TREND

TEST	CALENDAR YEAR					% CHANGE
	2020	2021	2022	2023	2024	
<i>Mycoplasma gallisepticum</i> / <i>Mycoplasma synoviae</i> ELISA	21,599	23,705	24,712	34,800	39,071	12%
<i>Salmonella pullorum</i> /typhoid Microagglutination Screen	21,957	23,700	25,200	34,801	39,000	12%
<i>Brucella abortus</i> BAPA, Card, CF, FPA and STP § *	6,065	9,081	8,705	21,144	24,210	15%
Pseudorabies (PRV) gB and g1 ELISA § *	5,462	7,958	8,313	17,605	18,476	5%
Johne's Disease ELISA and CF § *	2,707	2,673	1,935	3,430	4,561	33%
Equine Infectious Anemia (EIA) ELISA, AGID and Western Blot §	1,994	2,437	2,787	3,623	4,291	18%
Avian Influenza ELISA	2,610	2,734	2,731	4,202	4,192	0%
PRRS ELISA *	1,676	3,637	3,441	3,198	2,786	-13%
BVDV Type I Serum Neutralization SN and VN § *	446	824	860	1,361	2,548	87%
BVDV Antigen Capture ELISA *	3,446	2,829	2,558	3,470	2,079	-40%
Bovine Pregnancy ELISA	1,406	1,676	1,880	1,543	2,050	33%
CAE c-ELISA / OPP c-ELISA	422	555	566	710	1,835	158%
Infectious Bovine Rhinotracheitis (IBR) SN *	284	786	803	1,359	1,809	33%
BRSV SN and VN § *	31	249	496	1,125	1,546	37%
Parainfluenza 3 SN and VN § *	144	204	473	1,124	1,529	36%
Goat and Sheep Pregnancy ELISA	523	509	350	1,299	1,395	7%
<i>Theileria (Babesia) equi</i> c-ELISA §	400	505	1,365	1,133	1,284	13%
Bovine Leukemia Virus (BLV) ELISA and AGID § *	1,754	1,580	1,425	1,433	1,256	-12%
BVDV Type II Serum Neutralization SN and VN § *	11	404	377	977	941	-4%
<i>Babesia caballi</i> c-ELISA §	259	289	516	549	883	61%
<i>Anaplasma</i> c-ELISA *	563	805	561	601	841	40%
Rabies dFA Test			717	795	782	-2%
<i>Neospora</i> c-ELISA § *	239	448	403	454	368	-19%
<i>Leptospira</i> Microscopic Agglutination (MAT) *	542	389	242	304	339	12%
Caseous Lymphadenitis SHI §	160	173	231	203	256	26%
<i>Brucella canis</i> Card Test, AGID, IFA and Tube Agglutination § *	279	307	533	384	224	-42%
Rocky Mountain Spotted Fever (RMSF) IFA *	107	95	110	156	114	-27%
Bluetongue c-ELISA and AGID § *	86	141	138	106	81	-24%

§ In-house and/or Referral Laboratory Testing

* Includes individual tests from Serology Panels and Profiles

SEROLOGY (CONTINUED)

SEROLOGY (CONTINUED)

5-YEAR TEST TREND

TEST	CALENDAR YEAR					% CHANGE
	2020	2021	2022	2023	2024	
<i>Brucella ovis</i> ELISA §	17	11	31	57	61	7%
<i>Anaplasma phagocytophilum</i> /A. platys SNAP *	48	29	40	75	59	-21%
<i>E. canis</i> / <i>E. ewingii</i> SNAP *	48	29	40	75	59	-21%
Heartworm ELISA *	46	28	40	75	59	-21%
Lyme Disease SNAP *	48	29	40	75	59	-21%
Vesicular Stomatitis Virus VN (Indiana and New Jersey) §	74	28	56	60	50	-17%
Equine Viral Arteritis (EVA) SN and VN § *	64	41	39	45	34	-24%
Avian Influenza AGID	6	2	2	18	26	44%
Equine Protozoal Myeloencephalitis (EPM) IFAT §	40	72	69	35	24	-31%
West Nile Virus (WNV) IgM ELISA §	23	43	41	43	22	-49%
Pseudorabies (PRV) g1 ELISA	0	0	0	26	20	-23%
End Point Titration IFA	0	0	0	10	15	N/A
Equine Pregnancy Panel (ChL & RIA)-Referral Laboratory	0	0	0	0	15	N/A
Q-Fever (<i>Coxiella burnetii</i>) c-ELISA, CF and IFA §	11	4	22	11	10	N/A
All Other Tests	573	476	464	288	82	-72%
Total Tests Per Year	76,170	89,485	93,312	142,782	159,342	12%

§ In-house and/or Referral Laboratory Testing

* Includes individual tests from Serology Panels and Profiles

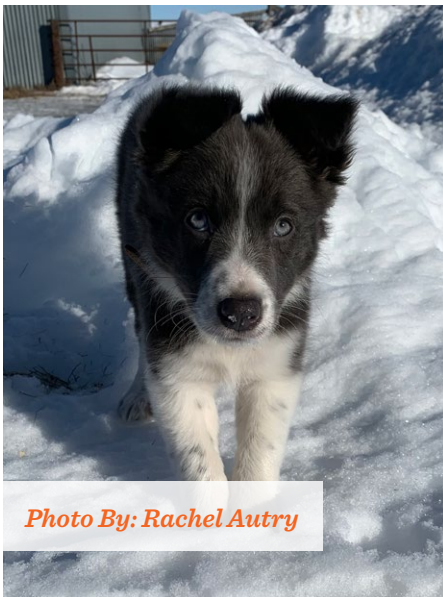


Photo By: Rachel Autry



Photo By: Emily Cooper

SEROLOGY (CONTINUED)

RABIES TESTING

5-YEAR TREND

SPECIES	CALENDAR YEAR					% CHANGE
	2020	2021	2022	2023	2024	
Canine	12	98	304	339	301	-11%
Feline	10	70	168	200	233	17%
Small Animal Other *	15	41	162	194	174	-10%
Bovine	11	19	36	36	42	17%
Equine	3	12	30	26	21	-19%
Caprine	1	6	5	5	5	0%
Large Animal Other **	1	3	9	9	4	-56%
Alpaca/Llama	0	0	1	3	0	-100%
Ovine	0	0	1	2	1	-50%
Porcine	0	1	1	2	1	-50%
Total Tests Per Year	53	250	717	816	782	-4%

* CY 2024 Small Animal Other: bat (89), skunk (37), raccoon (33), squirrel (5), opossum (4), mouse (2), gopher (1), ground hog (1), mole (1), rat (1)

** CY 2024 Large Animal Other: bobcat (2), deer (1), donkey (1)



Photo By: Shannon Caseltine

SEROLOGY (CONTINUED)

RABIES TESTING BY SPECIES

CY 2024

SPECIES	TOTAL # OF TESTS	POSITIVE RESULT	NEGATIVE RESULT	NO RESULT ‡
Canine	301	2	298	1
Feline	233	3	227	3
Bat	89	2	81	6
Bovine	42	6	36	0
Skunk	37	16	20	1
Raccoon	33	0	33	0
Equine	21	2	19	0
Caprine	5	2	3	0
Squirrel	5	0	5	0
Bobcat	2	0	2	0
Mole	1	0	1	0
Mouse	2	0	2	0
Deer	1	0	1	0
Donkey	1	0	1	0
Gopher	1	0	0	1
Ground Hog	1	0	0	1
Opossum	4	0	3	1
Ovine	1	0	1	0
Porcine	1	0	1	0
Rat	1	0	1	0
Total Results	782	33	735	14

‡ Unsatisfactory sample per OSDH

OUTSOURCED TESTING

5-YEAR TEST TREND

NOTE: Outsourced Testing is testing not affiliated with one of the primary laboratory units of OADDL. All Outsourced Testing is performed at referral laboratories.

TEST	CALENDAR YEAR					% CHANGE
	2020	2021	2022	2023	2024	
Cytology (only, slides)	246	107	107	117	60	-49%
Ruminant Chemistry and/or CBC	-	-	-	6	19	217%
Fluid Analysis with Cytology	11	7	16	7	15	114%
Urinary Calculi Analysis	15	25	11	12	15	25%
CBC and Blood Chemistry Panel	36	32	22	11	11	0%
Urinalysis	8	17	14	21	9	-57%
Equine Chemistry and/or CBC	2	23	20	4	9	125%
Genetic Testing	0	0	5	5	4	-20%
Potassium Bromide Level	8	8	5	4	4	0%
All Other Tests	140	201	124	53	16	-70%
Total Tests Per Year	466	420	324	240	162	-33%



Photo By: Emily Cooper

TOXICOLOGY

5-YEAR TEST TREND

NOTE: Except where indicated as In-house all Toxicology testing is performed at a referral laboratory.

TEST	CALENDAR YEAR					% CHANGE
	2020	2021	2022	2023	2024	
Mineral Panel *	98	92	110	133	137	3%
Nitrate Quantitation-Aqueous Fluid	72	55	76	91	73	-20%
Water Quality	98	63	32	64	50	-22%
Mass Spectrometry Toxicant Screen			7	15	32	113%
Bone Marrow Fat Analysis	11	7	15	11	22	100%
Cyanide (In-house)	8	9	48	17	19	12%
Nitrate Quantitation-Forage	11	25	40	19	17	-11%
Drug Screen/Quantitation	24	17	22	82	12	-85%
Trace Mineral - Lead	17	20	15	12	12	0%
Toxicology - Special Testing	12	14	8	24	11	-54%
GC/MS Toxicant Screen	7	17	14	6	6	0%
Magnesium	16	2	2	8	6	-25%
Mycotoxin Screen	10	17	11	17	6	-65%
Forage Analysis	5	16	7	4	5	25%
Vitamin A Analysis	8	5	3	9	5	-44%
Vitamin E Analysis	0	3	4	15	5	-67%
Calcium	8	0	2	0	4	N/A
All Other Testing	94	57	49	73	22	-70%
Total Tests Per Year	499	419	465	600	444	-26%

* **Mineral Panel** includes Trace Mineral Panels, Metal and Mineral Panels and Heavy Metal and Mineral Panels

TEST RELATED SUPPLIES SENT TO CLIENTS

5-YEAR TREND

SUPPLY	CALENDAR YEAR					% CHANGE
	2020	2021	2022	2023	2024	
<i>Tritrichomonas foetus</i> PBS Transport Tube	11,028	11,339	12,319	14,440	13,401	-7%
3 oz. 10% Buffered Formalin Jar	720	954	850	930	976	5%
Histo Mailers	-	111	303	355	324	-9%
BHI Broth Media	35	32	134	442	295	-33%
Molecular Avian Influenza Swabs	62	34	129	308	263	-15%
<i>Campylobacter fetus</i> Media	228	106	69	27	22	-19%
Bacterial Culturette w/o Charcoal	52	104	93	26	19	-27%
Sm. Ruminant Biosecurity Sample Collection Kit	0	0	0	1	1	0%
Barrel	0	20	8	0	0	N/A
<i>Tritrichomonas foetus</i> Transport Medium Pouch	28	0	0	0	0	N/A
Total Supplies	12,153	12,680	13,905	16,529	15,301	-7%



Photo By: Darlene Minor



Photo By: Brianna Hamilton

OADDL BOARD OF ADVISORS

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Dr. Ken Powell

Dr. Fawn Reely

Dr. Jerry Ritchey

Dr. Donna Slater

Dr. Mike Tripp (Chair)

Dr. Bret White

Dr. Barry Whitworth (Vice Chair)

Mr. Scott Yates

GROUP REPRESENTED

Oklahoma Cattlemen's Association, Member, Vice Chair Beef Production Committee

Director, CVM Veterinary Teaching Hospital

Pharmaceutical Industry

USDA APHIS Area Veterinarian in Charge

State Veterinarian

Small Ruminant Industry

Equine Industry

Mixed Animal Practice

Poultry Industry

OVMA Representative, Sr. Territory Sales Manager at Boehringer-Ingelheim Animal Health

Interim Dean, College of Veterinary Medicine

Small Animal Practice

Swine Industry

Food Animal Practice

Oklahoma Cooperative Extension

Director of Food Safety Services, ODAFF

PERSONNEL: ADMINISTRATION, FACULTY, PATHOLOGY RESIDENTS AND STAFF

CY 2024

ADMINISTRATION

POSITION

Jerry Saliki	Professor OADDL Director (May 2020 to Present) Section Head: Serology
Emily Cooper	Assistant Director/Quality Manager Section Head: Receiving Office
Ryan Van Fleet *	Coordinator of Business Operations: January 2024 - October 2024
Angela Carter **	Coordinator of Business Operations: November 2024 - December 2024
Janisue Coleman	Associate Quality Manager & Biosafety Officer

FACULTY

POSITION

AREAS OF INTEREST

Alexandra Ford	Clinical Assistant Professor Pathologist	Infectious Disease Exotics
Valerie McElliott	Clinical Assistant Professor Pathologist	Musculoskeletal Pathology Neuropathology Electron Microscopy
Clare Brown **	Assistant Professor Pathologist	Infectious Disease Feline Pathology Exotics and Wildlife Pathology
Sunil More	Assistant Professor Pathologist	Respiratory Disease Infectious Disease
Akhilesh Ramachandran	Professor/Associate Director Section Head: Microbiology Section Head: Molecular Diagnostics	Bacteriology Molecular Diagnostics
Ruth Scimeca	Assistant Professor Clinical Parasitologist Section Head: Parasitology Diagnostics	Host-response to Parasitic Diseases Tick-borne Pathogens Parasitology Diagnostics
Tim Snider *	Professor Pathologist	Gastrointestinal Disease Reproductive Pathology Infectious Pathology
Brianne Taylor *	Clinical Assistant Professor Pathologist	Infectious Disease Equine Pathology

* Left OADDL in CY 2024

** Joined OADDL in CY 2024

PERSONNEL: ADMINISTRATION, FACULTY, PATHOLOGY RESIDENTS AND STAFF (CONTINUED)

CY 2024

STAFF

Allen, Jason**
 Allen, Noah
 Autry, Rachel**
 Bassham, Brandy**
 Bloszinsky, Lucas**
 Bennett, Blaine**
 Bush, Kelsey**
 Caseltine, Shannon
 Cox, Ella**
 Crockett, Taytum
 Cullen, Lindsey**
 Danker, Andrew**
 Daughtery, Cheyenne**
 Deal, Clay
 Fletcher, Harley*
 Gupta, Sushim
 Hahn, Raina*
 Hamilton, Brianna
 Hergenreder, Katie*
 Hoyt, Amy
 Kiyuna, Emily
 Loane, Megan*
 Looper, Emily
 Madden, Robin
 Maloney, Shannon*
 McConnell, Sean*
 Medellin, Alejandra*
 Minor, Darlene**
 Morrow-Williams, Makinzi*
 Norris, Callie*
 Randall, Jordan
 Rowden, Michele
 Smith, Sara**
 Stair, Eron
 Stanley, Crystal
 Talent, Scott
 Taylor, Stephanie
 Voth, Kaitlyn**
 Windiate, Victoria
 Woods, Brittany*

LABORATORY UNIT

Histology
 Microbiology
 Molecular Diagnostics
 Receiving Office; Necropsy
 Histology
 Receiving Office; Necropsy
 Histology
 Rabies/Molecular Diagnostics
 Receiving Office; Necropsy
 Serology
 General Office
 Molecular Diagnostics
 Molecular Diagnostics
 Microbiology
 Receiving Office; Necropsy
 Microbiology
 Molecular Diagnostics
 Histology
 Histology
 Serology
 Histology
 Receiving Office; Necropsy
 Parasitology
 Molecular Diagnostics
 General Office
 Histology
 Molecular Diagnostics
 Histology
 Histology
 Serology
 Serology
 Accounting
 Molecular Diagnostics
 Histology
 Serology
 Microbiology
 General Office
 General Office
 OADDL Informatics; CVM Laboratory Safety
 Histology

POSITION

Senior Laboratory Technologist
 Senior Laboratory Technologist
 Senior Laboratory Technologist
 Lab Technician
 Senior Laboratory Technologist
 Laboratory Manager
 Senior Laboratory Technologist
 Laboratory Supervisor
 Lab Technician
 Senior Laboratory Technologist
 Medical Records Technician
 Senior Laboratory Technologist
 Senior Laboratory Technologist
 Senior Laboratory Technologist
 Lab Technician
 CDC Fellow
 Senior Laboratory Technologist
 Laboratory Manager
 Senior Laboratory Technologist
 Laboratory Manager
 Laboratory Supervisor
 Laboratory Manager
 Laboratory Supervisor
 Laboratory Manager
 Medical Records Technician
 Senior Laboratory Technologist
 Laboratory Supervisor
 Senior Laboratory Technologist
 Senior Laboratory Technologist
 Senior Laboratory Technologist
 Senior Laboratory Technologist
 Senior Laboratory Technologist
 Accounting Specialist
 Laboratory Supervisor
 Senior Laboratory Technologist
 Senior Laboratory Technologist
 Laboratory Manager
 Medical Records Supervisor
 Administrative Assistant
 Coordinator
 Senior Laboratory Technologist

* Left OADDL in CY 2024

** Joined OADDL in CY 2024

INSTRUCTION OF VET MED AND OSU STUDENTS

- HONR 1000, Taylor B (IOR), Scimeca R
- VCS 7072 Diagnostics I, McElliott V (IOR), Ford A, Scimeca R, Taylor B, More S, McElliott V, Brown C, Ramachandran A
- VMED 7136 (Histo/Phys I), Ford A
- VCS 7142 Externship I, Taylor B (IOR)
- VME 7264-27780 General Pathology, More S, Taylor B, Ford A
- VMED 7323 Veterinary Parasitology II, Scimeca R
- VMED 7454 Veterinary Virology, McElliott V, Ford A, More S
- VCS 7532, Applied Diagnostic Medicine and Laboratory Investigations III, Taylor B (IOR), McElliott V
- VMED 7563 Veterinary Musculoskeletal system, McElliott V
- VMED 7564 Alimentary System, Taylor B, Ford A
- VMED 7612 Veterinary Neurology, McElliott V
- VMED 7661 Infectious and Parasitic Disease in Wildlife, Taylor B (IOR)
- VMED 7662 Urinary System, Taylor B
- VMED 7674 Theriogenology, Taylor B
- VMED 7712 (Systemic Pathology Elective), Ford A
- VMED 7912 (Grand Rounds), Ford A
- CBSC 5023-27910 Comparative Biomedical Sciences II, More S (IOR), Ford A, Taylor B

AWARDS, HONORS, CERTIFICATIONS

- **Brown C**, 2024 Phi Zeta Research Manuscript Award (Basic Research category)
- **Brown C**, Obtained certification Diplomate of ACVP
- **Ford A**, AVMA VLC Early Career Scholarship Award
- **McElliott V**, Chair, American College of Veterinary Pathology (ACVP), Pathology Training Committee (PTC)
- **More S**, Nomination: Regents Distinguished Research Award for 2024
- **Taylor B**, Card Reader: CVM Commencement. May 2024.
- **Taylor B**, Davis-Thompson Foundation Newsletter monthly cover photograph winner. February 2024.
- **Taylor B**, Nu Chapter of the Phi Zeta Society induction. April 2024.

OUTREACH AND PRESENTATIONS TO THE PUBLIC AND CLIENTS

- **Ford A**, FFA Career Development Practicum (OSU CVM)
- **Ford A**, Summer Seminar: Cancer, Contagions, or Cruelty? A Collection of Small Animal Forensic Cases
- **Ford A**, Youth Medical Mentorship (OSU Tulsa)
- **McElliott V**, 2024 Abstract Reviewer, American College of Veterinary Pathology (ACVP), Late-Breaking Abstract Committee (LBA)
- **Saliki J**, Moderator: CVM Fall Conference, Oklahoma State University, November 2024
- **Saliki J**, OADDL updates: OVMA meeting, Norman Oklahoma, January 2024
- **Scimeca R**, Current and future parasitology diagnostics: Improving patient care.
- **Scimeca R**, Fall conference, CVM, OSU. November 15, 2024. Oral presentation.
- **Scimeca R**, Parasite palooza. Veterinary Technicians parasitology diagnostic training. Presented to regional veterinarians. July 9, 2024.
- **Scimeca R**, Time to tick talk. Veterinary Practice News, Continuous education webinar. Oral presentation
- **Taylor B**, Guest lecturer: Anatomic Pathology, Royal Veterinary College, Hampstead, UK, September 2024
- **Taylor B**, Judge: FFA Statewide Veterinary Science CDE, Oklahoma State University, May 2024
- **Taylor B**, Moderator: CVM Fall Conference, Oklahoma State University, November 2024
- **Taylor B**, Reviewer: ACVP Phase I Boards Mock Exam, Davis-Thompson Foundation, January 2024
- **Taylor B**, Speaker: Adventures in Agriculture, Oklahoma City, OK, November 2024
- **Taylor B**, Speaker: CVM Early Admission Program, Oklahoma State University, November 2024
- **Taylor B**, Speaker: Youth Medical Mentorship, Tulsa, OK, November 2024
- **Taylor B**, Speaker: Dr. Pete Immersion Camp, Oklahoma State University, Tulsa, OK, July 2024

ATTENDANCE AT MEETINGS

- **Brown C**: 2024 50th Annual South Eastern Veterinary Pathology Conference
- **Brown C**: 2024 Residents' Professional Development and Leadership Conference – AAVC
- **Ford**: AVMA Veterinary Leadership Conference
- **More S, Ramachandran A, Saliki J**: INTERACT Symposium on One Health and One Medicine, September 17-18, 2024
- **More S, Ramachandran A**: International Symposium - One Planet, One Health and One Future, organized by the Dr. Cyrus Poonawalla Center for Infectious Diseases and Pandemic Preparedness, November 5, 2024 at the Indian Institute of Public Health, Hyderabad, India
- **More S**: Oklahoma Center for Respiratory and Infectious Diseases (OCRID) hosted their 11th Annual Research Symposium on April 4, 2024

- **Scimeca R:** American Association of Veterinary Parasitologists, Atlanta, GA, July 27-30, 2024
- **Scimeca R:** Fall conference, CVM, OSU. November 14-15, 2024.
- **Scimeca R:** National Center of Veterinary Parasitology, Spring Summer and Fall Meetings.
- **Taylor B, Villasenor A, Scimeca R, Ford A:** American College of Veterinary Pathologists Annual Meeting. Seattle WA. November 2024
- **Villasenor A, Ramachandran A, Saliki J, Cooper E, Ford A:** American Association of Veterinary Laboratory Diagnosticians (AAVLD) annual meeting (October, Nashville, TN)

POSTERS, SCIENTIFIC PRESENTATIONS, SCIENTIFIC PUBLICATIONS

- **More S, Snider TA, Ramachandran A.** Sporotrichosis in Domestic Cat and Zoonotic Transmission. *Emerging Infectious Diseases*. 2024; 30(12).
- Kerr CM, Pfannenstiel JJ, Alhammad YM, O'Connor JJ, Ghimire R, **More S**, et al. Mutation of highly conserved residues in loop 2 of the coronavirus macrodomain demonstrates that enhanced ADP-ribose binding is detrimental to infection. DOI: 10.1101/2024.01.03.574082
- Chanda D, Del Rivero T, Ghimire R, **More S**, Mitrani MI, Bellio MA, et al. Acellular Human Amniotic Fluid-Derived Extracellular Vesicles as Novel Anti-Inflammatory Therapeutics against SARS-CoV-2 Infection. *Viruses*. 2024; 16(2): 273.
- Hoover AR, **More S**, Liu K, West CL, Valerio TI, Furrer CL, Adams JP, et al. N-dihydrogalactochitosan serves as an effective mucosal adjuvant for intranasal vaccine in combination with recombinant viral proteins against respiratory infection. *Acta Biomaterialia*. 2024; 175: 279-292.
- Gunasekara S, Tamil Selvan M, Murphy CL, Shatnawi S, Cowan S, **More S**, et al. Characterization of Neutrophil Functional Responses to SARS-CoV-2 Infection in a Translational Feline Model for COVID-19. *International Journal of Molecular Sciences*. 2024; 25(18): 10054.
- Gunasekara S, Shatnawi S, Ludwig B, **More S**, Miller C, Rudd J. Understanding variant-specific variations in neutrophil functional kinetics associated with SARS-CoV-2 infection in a feline animal model. *The Journal of Immunology*. 2024; 212(1_Supplement): 0348_5935-0348_5935.
- Villalva C, Patil G, **Narayanan SS**, Ghimire R, Chanda D, Samarakoon N, **Snider T, Ramachandran A, Channappanavar R, More S.** Klebsiella pneumoniae co-infection leads to fatal pneumonia in SARS-CoV-2-infected mice. *Frontiers in Virology*. 2024; 4: 1426728.
- Ashar H, Singh A, Kishore D, Neel T, **More S**, Liu C, Dugat D, Ranjan A. Enabling chemo-immunotherapy with HIFU in canine cancer patients. *Annals of Biomedical Engineering*. 2024; 52(7): 1859-1872.
- Gonzalez-Jassi H, Fithian J, Doden G, **More S, Ramachandran A, Taylor B, Cino Ozuna G**, Hunter A, **Mitchell S**, Wiles R, Brandão J. Vaccine-induced distemper in domestic ferrets (*Mustela putorius furo*): 5 cases (2022). *Journal of Exotic Pet Medicine*. 2024; 51: 20-26.
- Harr KM, **Scott M, More S**, Mafi GG, Pfeiffer M, Ramanathan R. Impact of different levels of dark-cutting severity on the retail color and color stability of beef longissimus lumborum steaks. *Journal of Animal Science*. 2024; 102(Supplement_1): 41-42.
- Harr KM, **Scott M, More S**, Mafi GG, Pfeiffer M, Ramanathan R. Impact of visual dark-cutting severity and wet aging on the bloom and retail color stability of beef longissimus lumborum steaks. *Journal of Animal Science*. 2024; 102(Supplement_3): 220-221.

POSTERS, SCIENTIFIC PRESENTATIONS, SCIENTIFIC PUBLICATIONS (CONTINUED)

- Harr KM, Jewell N, Edwards J, **More S**, Mafi GG, Pfeiffer M, et al. Comparing the effects of packaging normal-pH and atypical dark-cutting beef in modified atmosphere conditions on surface color. *Meat Science*. 2024; 213: 109466.
- Kerr CM, Pfannenstiel JJ, Alhammad YM, O'Connor JJ, Ghimire R, **More S**, et al. Mutation of a highly conserved isoleucine residue in loop 2 of several β -coronavirus macrodomains indicates that enhanced ADP-ribose binding is detrimental for replication. *Journal of Virology*. 2024; 98(11): e01313-24.
- Bernardini A, **Taylor B**, Jeffries M. Effects of long-term carprofen administration in C57BL/6J mice (*Mus musculus*). *American Association for Laboratory Animal Science Annual Meeting*. Nashville, TN. November 2024.
- Lott Z, **Narayanan S**, **Taylor B**. Poorly differentiated urogenital tumor and concurrent renal dysplasia in an Indian runner duck. *American College of Veterinary Pathologists Annual Meeting*. Seattle, WA. November 2024.
- **Narayanan S**, **Mitchell S**, **Ramachandran A**, **Taylor B**, **Cino Ozuna G**. Bluetongue virus-associated fetal death and dam mortality in canines. *American Association of Veterinary Laboratory Diagnosticians Annual Meeting*. Nashville, TN. October 2024.
- Shatnawi S, Gunasekara S, Bashor L, Selvan M, Cowan S, Ritchey J, VandeWoude S, **Taylor B**, Miller C, Rudd J. Utilizing Feline Lentiviral Infection to Establish a Translational Model for COVID-19 in People with Human Immunodeficiency Virus Infection. *Microorganisms*. 2024 Jun 25; 12(7): 1289. (This was selected as the cover feature for this issue)
- Williams MR, Crisman E, **Taylor B**. Microvasculature of the suspensory ligament of the equine hindlimb. *American Journal of Veterinary Research*. 2024 Apr 20; 85(7): ajvr.24.01.0019.
- Tubulointerstitial nephritis caused by *Encephalitozoon cuniculi* in a young domestic rabbit. **Villasenor A**, **Ford A**. 67th AAVLD Annual Meeting. Nashville, TN. October 12, 2024.
- Jumper W, **Brown C**, Jumper W. Case Report: Investigating an outbreak of tremorgenic mycotoxicosis in beef cows on pasture in Mississippi due to ergot (*Claviceps paspali*) infection in dallisgrass (*Paspalum dilatatum*). *The Bovine Practitioner*. August 2024.
- Campbell, **Brown C** et al. JAVMA Neuro What's your diagnosis; Sept 2024.
- Jugan M, Plattner BL, **Ford AK**, Freilich L, Bieberly Z, Schermerhorn T. Plasma glucagon-like peptide-2 in cats with chronic enteropathies. *Journal of Feline Medicine and Surgery*. 2025 Jan; 27(1): 1098612X241305923. doi: 10.1177/1098612X241305923. PMID: 39840661; PMCID: PMC11755514.
- Bin Tan, **Ford AK** et al. Design of a SARS-CoV-2 papain-like protease inhibitor with antiviral efficacy in a mouse model. *Science*. 2024; 383: 1434-1440. DOI: 10.1126/science.adm9724.
- da Silva Barcelos L, **Ford AK**, Frühauf MI, Botton NY, Fischer G, Maggioli MF. Interactions Between Bovine Respiratory Syncytial Virus and Cattle: Aspects of Pathogenesis and Immunity. *Viruses*. 2024; 16: 1753. <https://doi.org/10.3390/v16111753>.
- Hurd JA, Toben G, **Ford AK**, Miller CA, et al. Exposure to novel females increases fecundity in adult male prairie voles. *Hormones and Behavior*. bioRxiv [Preprint]. 2024 Dec 20: 2024.12.18.627569. doi: 10.1101/2024.12.18.627569. PMID: 39763992; PMCID: PMC11702668.
- *Toxoplasma gondii* and Rabies—The Parasite, the Virus, or Both? Wilson R, **Caseltine S**, Will E, **Saliki J**, **Scimeca RC**. *Microorganisms*. 2025; 13: 109. <https://doi.org/10.3390/microorganisms13010109>.
- Diagnostic testing for Tick-Borne Diseases: Recommendation and Interpretation of Results. Myers S, **Scimeca RC**. *Today's Veterinary Practice*. 2024.

POSTERS, SCIENTIFIC PRESENTATIONS, SCIENTIFIC PUBLICATIONS (CONTINUED)

- Detection of *Anaplasma bovis*-like agent in the Southcentral United States. Smith RC, Myers S, Sundstrom KD, Wilson R, **Scimeca RC**, Starkey LA, Little SE. *Tick- and Tick-borne Diseases*. 2024; 15(6): 102411. doi: 10.1016/j.ttbdis.2024.102411.
- First Report of *Haemaphysalis longicornis* (Neumann) in Oklahoma, USA. Myers SA, **Scimeca RC**. *Pathogens*. 2024; 13: 861. <https://doi.org/10.3390/pathogens13100861>.
- *Skrjabinigylus chitwoodorum* in a rabies-positive striped skunk in Texas. Myers S, **Taylor B**, Wilson R, **Caseltine S**, **Scimeca RC**. *Journal of Diagnostic Investigation*. 2024. doi: 10.1177/10406387241293421.
- Tick salivary proteome and lipidome with low glycan content correlate with allergic type reactions in the zebrafish model. Vaz-Rodrigues R, Mazuecos L, Villar M, Contreras M, González-García A, Bonini P, **Scimeca RC**, Mulenga A, de la Fuente J. *International Journal for Parasitology*. 2024. doi: 10.1016/j.ijpara.2024.07002.
- The Establishment of a Novel In Vitro System for Culturing *Cytauxzoon felis*. Weerarathne P, Reichard M, Miller C, **Scimeca RC**. *Pathogens*. 2024; 13: 565. <https://doi.org/10.3390/pathogens13070565>.
- Field deployable PCR assays for foot and mouth disease (FMD) and serotype identification using metagenome sequencing. AAVLD 2024, Nashville, TN. **Gupta SK**, Gaffney C, Kisner T, Okah-Nnane NH, Isaac D, Wade A, Tanya V, **Saliki J**, **Ramachandran A**. 67th AAVLD, Nashville, TN, October 29-November 5, 2024.
- Aakur SN, Laguduva VR, Ramamurthy P, **Ramachandran A**. TEPI: Taxonomy-Aware Embedding and Pseudo-Imaging for Scarcely-Labeled Zero-Shot Genome Classification. *IEEE Journal of Biomedical and Health Informatics*. 2024.
- Doden G, **Ramachandran A**, Kanda I, Di Girolamo N, Robertson J, Dugat D, Brandão J. Saline, chlorhexidine, and povidone-iodine alone or in combination with iodine povacrylex are effective antiseptics in chickens (*Gallus gallus domesticus*). *American Journal of Veterinary Research*. 2024; 1: 1–7.
- Glassman AR, Zachariah TT, Patterson JL, Mansfield KL, Seney EE, **Ramachandran A**. Aerobic blood cultures and comparison to clinical findings of free-ranging green turtles (*Chelonia Mydas*) in east central Florida. *Journal of Zoo and Wildlife Medicine*. 2024; 55: 665–672.
- **Mitchell SD**, **Ramachandran A**, **Gupta SK**, Olson D, **Ford AK**. Acute gastrointestinal disease in a young bobcat (*Lynx rufus*). *Journal of the American Veterinary Medical Association*. 2024; 262: 1–3.
- Cutaneous hemangiosarcoma in a foal (*Equus caballus*). **Narayanan S**, **More S**. *American Association for Veterinary Laboratory Diagnostics Annual Meeting*. October 10-16, 2024, Nashville, TN.
- **Brown C**. 2024 Southeastern Veterinary Pathology Conference (SEVPAC): Oral case presentation; mentored 2 student presentations.
- Flukey Respiration: Pulmonary Trematodiasis and migrating grass awn in a 3-year-old dog (Poster, ACVP). **Narayanan S**, Myers S, **Ford AK**.
- Encephalitozoon cuniculi tubulointerstitial nephritis in a young domestic rabbit (diagnostic slide seminar, AAVLD). **Villasenor A**, **Ford AK**.
- Myers S, **Taylor B**, Wilson R, **Caseltine S**, **Scimeca R**. *Skrjabinigylus chitwoodorum* in a rabies-positive striped skunk in Texas. *American Association of Veterinary Parasitologists*, Atlanta, GA, July 27-30, 2024 (Oral presentation).
- Wilson R, **Caseltine S**, **Scimeca R**. Toxoplasma gondii and rabies: Is the parasite, the virus, or both? *American Association of Veterinary Parasitologists*, Atlanta, GA, July 27-30, 2024 (Oral presentation).

GLOSSARY

AAVLD	American Association of Veterinary Laboratory Diagnosticians	IFA/IFAT	Indirect Fluorescent Antibody/IFA Test
ACVP	American College of Veterinary Pathology	IgG	Immunoglobulin G
AGGL	Agglutination Test	IgM	Immunoglobulin M
AGID	Agar Gel Immunodiffusion Assay	IHC	Immunochemistry
AIV	Avian Influenza Virus	ILT	Infectious Laryngotracheitis
ASF	African Swine Fever	IOR	Instructor of Record
AVMA	American Veterinary Medical Association	MAT	Microscopic Agglutination Test
BAPA	Buffered Acidified Plate Antigen	MS/MG	<i>Mycoplasma synoviae</i> / <i>Mycoplasma gallisepticum</i>
BCV	Bovine Coronavirus	NPIP	National Poultry Improvement Plan
BHI	Brain Heart Infusion Medium	OHRC	Oklahoma Horse Racing Commission
BLV	Bovine Leukemia Virus	OPP/OPPV	Ovine Progressive Pneumonia/OPP Virus
BRSV	Bovine Respiratory Syncytial Virus	OSDH	Oklahoma State Department of Health
BSE	Bovine Spongiform Encephalopathy	OSU	Oklahoma State University
BVD/BVDV	Bovine Viral Diarrhea/BVD Virus	OVMA	Oklahoma Veterinary Medical Association
c-ELISA	Competitive (blocking) ELISA	PAS	Periodic Acid-Schiff stain
CAE	Caprine Arteritis Encephalitis	PBS	Phosphate-buffered Saline
CBC	Complete Blood Count	PCR	Polymerase Chain Reaction
CF	Compliment Fixation	PI	Persistently Infected
CSF	Classical Swine Fever	PI-3	Parainfluenza-3 Virus
CVM	College of Veterinary Medicine	PrP	Protease resistant Protein
CWD	Chronic Wasting Disease	PRRS/PRRSV	Porcine Reproductive and Respiratory Syndrome/ PRRS Virus
CY	Calendar Year (January –December)	PRV	Pseudorabies Virus
dFA	Direct Fluorescent Antibody	PTAH	Phosphotungstic Acid Hematoxylin stain
EEE	Eastern Equine Encephalitis	qPCR	quantitative Polymerase Chain Reaction
EHD	Epizootic Hemorrhagic Disease	RAP	Rapid Automated Presumptive
EHV	Equine Herpesvirus	RFFIT	Rapid Fluorescent Focus Inhibition Test
EIA	Equine Infectious Anemia	RMSF	Rocky Mountain Spotted Fever
ELISA	Enzyme-Linked Immunosorbent Assay	SARS-CoV2	Severe Acute Respiratory Syndrome-Coronavirus 2
END	Exotic Newcastle Disease	SHI	Synergistic Hemolysin Inhibition
EU	European Union	SIV	Swine Influenza Virus
EVA	Equine Viral Arteritis	SN	Serum Neutralization
FA	Fluorescent Antibody	sp./spp.	Specie/Species
FMD	Foot and Mouth Disease	STP	Standard Plate Test
FPA	Fluorescence Polarization Assay	TAT	Turnaround Time
GC/MS	Gas Chromatography/Mass Spectrometry	VMH/VTH	OSU CVM Veterinary Medical Hospital
GMS	Grocott's Methenamine Silver stain	VN	Virus Neutralization
H&E	Hematoxylin and Eosin stain	WNV	West Nile Virus
HI	Hemagglutination Inhibition		
IBR	Infectious Bovine Rhinotracheitis		