2024 ANNUAL REPORT

OADDL
College of Veterinary Medicine

Diagnostic *Excellence* SINCE 1975

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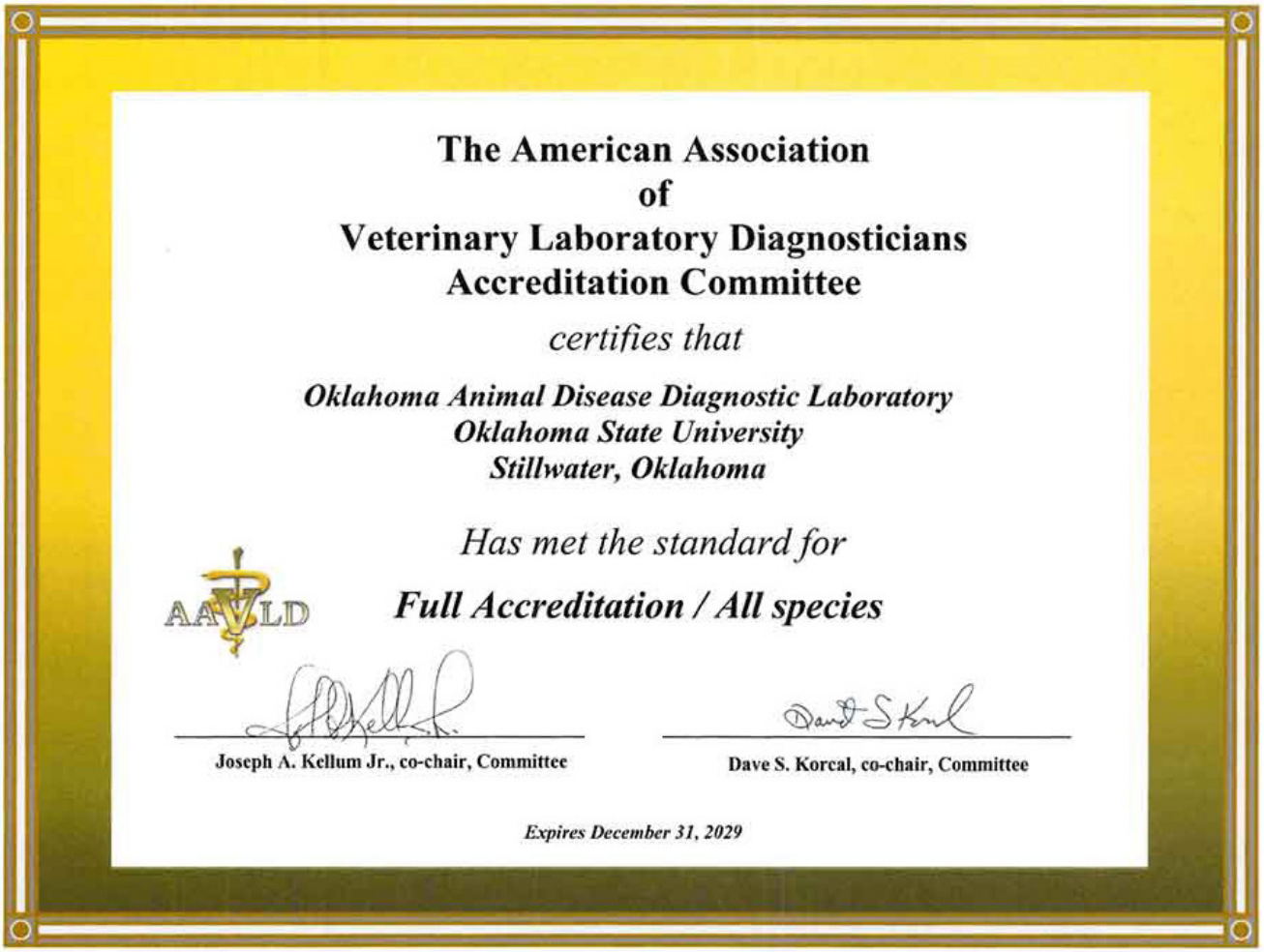
Cover photos courtesy of Rachel Autry and Emily Cooper.

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.



The American Association
of
Veterinary Laboratory Diagnosticians
Accreditation Committee

certifies that

Oklahoma Animal Disease Diagnostic Laboratory
Oklahoma State University
Stillwater, Oklahoma

Has met the standard for

AAVLD

Full Accreditation / All species

Joseph A. Kellum Jr., co-chair, Committee

Dave S. Korcal, co-chair, Committee

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

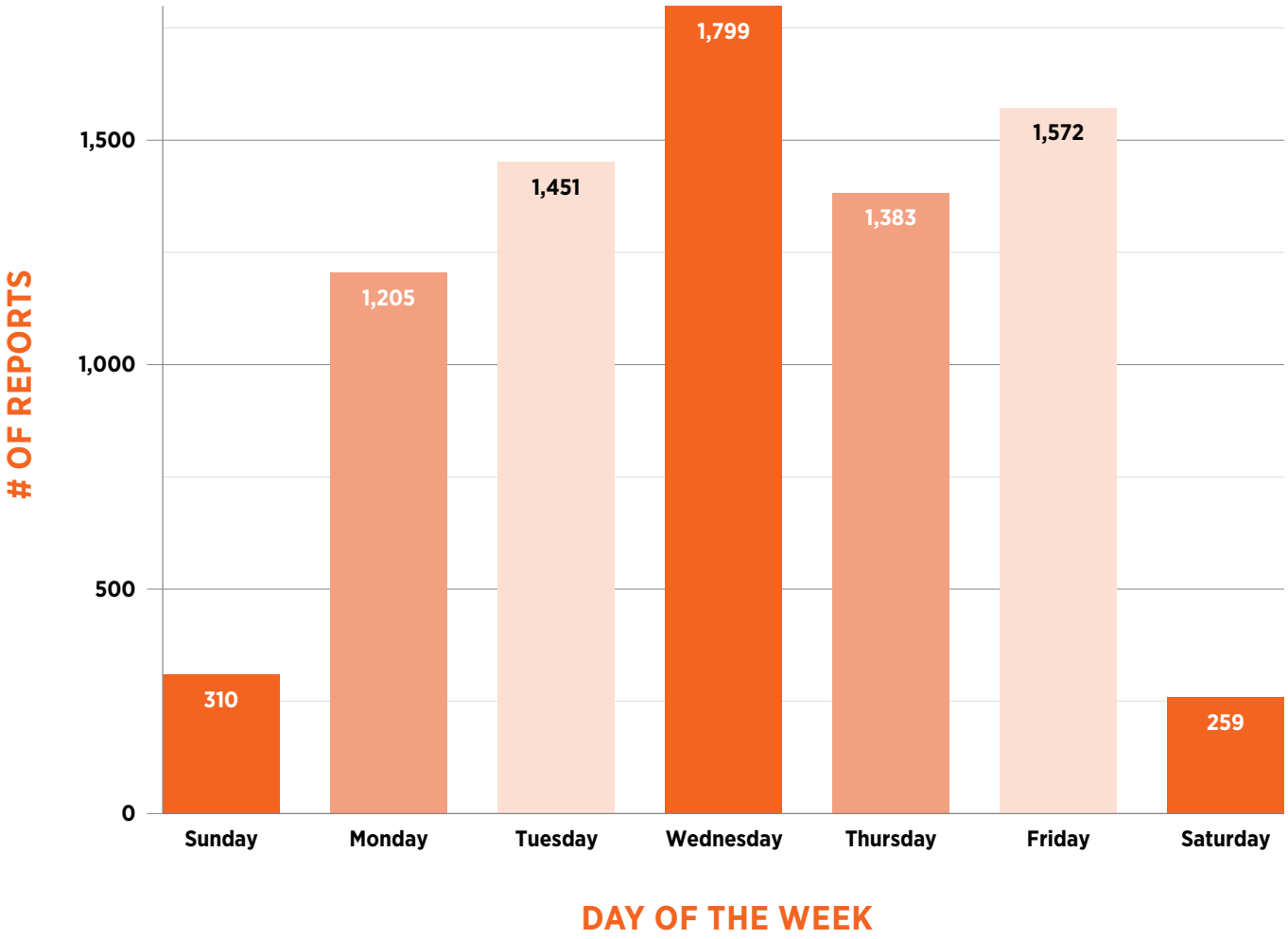
I'm so excited that OADDL is able and willing to process these incident samples! I've worked with several labs across the country and have the highest regard of OADDL.

— 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

0-10 11-100 101-1,000 1,001+

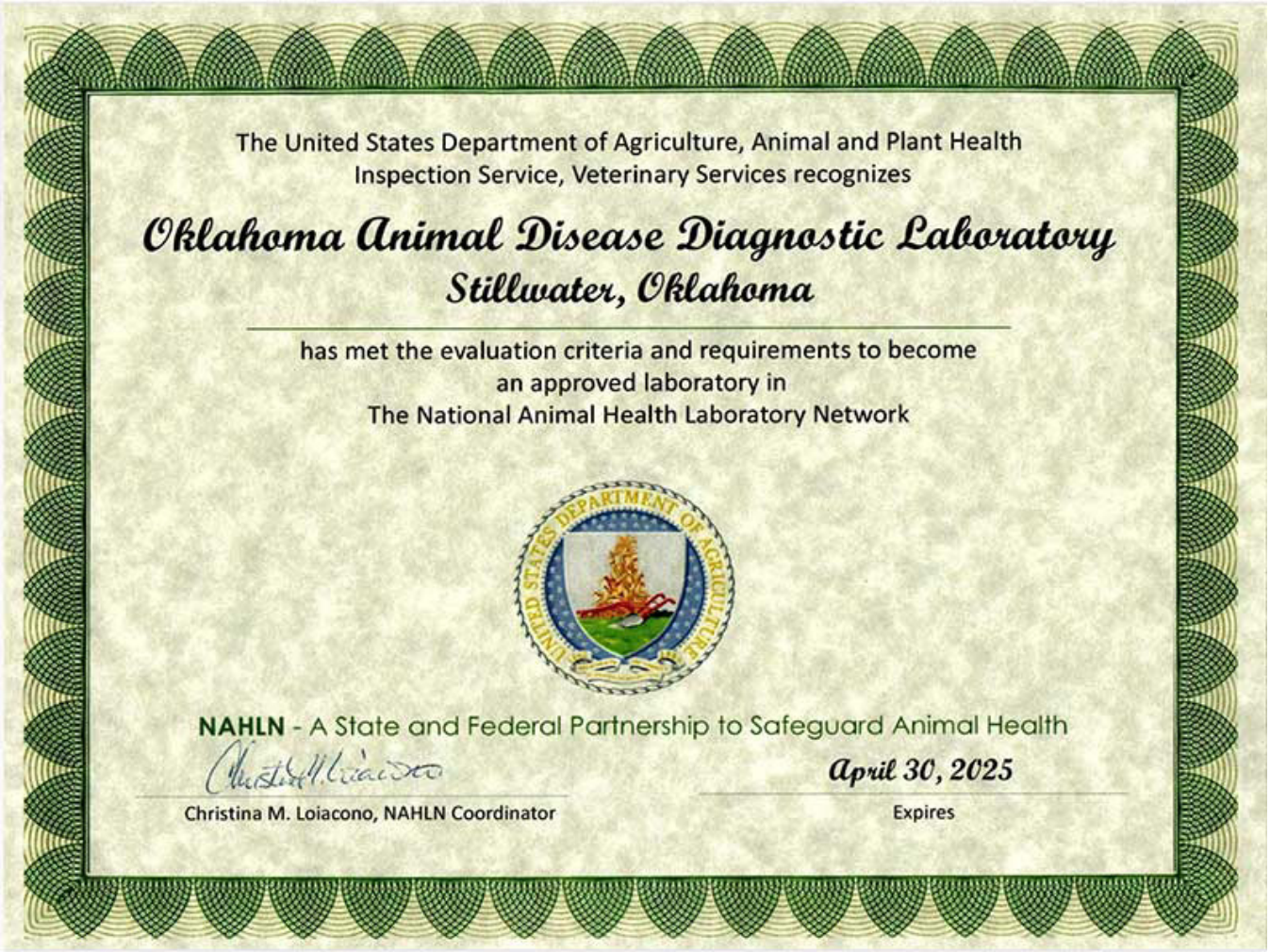
NEIGHBORING STATES OF OKLAHOMA

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


The United States Department of Agriculture, Animal and Plant Health Inspection Service, Veterinary Services recognizes

Oklahoma Animal Disease Diagnostic Laboratory

Stillwater, Oklahoma

has met the evaluation criteria and requirements to become an approved laboratory in The National Animal Health Laboratory Network

NAHLN - A State and Federal Partnership to Safeguard Animal Health

Christina M. Loiacono, NAHLN Coordinator

April 30, 2025

Expires

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-LIRNS'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 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)
Brucella abortus BAPA	USDA	Serology (5)
Brucella abortus Card	USDA	Serology (5)
Brucella abortus FPA	USDA	Serology (5)
Brucella abortus 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%
Bacillus anthracis 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%
Bluetongue Virus Virus Isolation	-	-	-	-	**-**	N/A
Brucella spp.						
Brucella abortus (BAPA, Card Agglutination, FPA)	6,050	8,892	8,703	21,143	**24,207**	14%
Brucella abortus Complement Fixation (CF)	12	-	-	1	**1**	0%
Brucella abortus RAP	-	-	-	-	**-**	N/A
Brucella abortus Standard Plate	9	4	2	-	**2**	N/A
Brucella canis AGID	2	-	25	17	**-**	-100%
Brucella canis Card Test	234	261	24	43	**-**	-100%
Brucella canis IFA	37	36	395	341	**224**	-34%
Brucella canis 2-Mercaptoethanol Tube Agglutination	2	-	11	17	**-**	-100%
Brucella melitensis Card Test	20	5	34	8	**6**	-25%
Brucella ovis ELISA	17	11	31	57	**61**	7%
Brucella spp. Culture	59	57	66	66	**65**	-2%
Brucella spp. PCR	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	
Chronic Wasting Disease (CWD) IHC PrP	3	-	-	5	-	-100%
Classical Swine Fever (CSF) PCR ‡	7	-	-	-	**1**	N/A
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%
Equine Infectious Anemia PCR	-	-	-	-	-	N/A
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%

* *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	
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
Infectous Laryngotracheitis (ILT)						
Infectous Laryngotracheitis ELISA	-	-	-	-	**-**	N/A
Infectous 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						
Leptospira Microscopic Agglutination Test (canine)	25	32	19	21	**20**	-5%
Leptospira sp. Real-Time PCR (canine)	9	10	4	16	**19**	19%
Mycoplasma spp. (avian)						
Mycoplasma gallisepticum/Mycoplasma synoviae ELISA	21,599	23,705	24,712	34,800	**39,071**	12%
Mycoplasma gallisepticum/Mycoplasma synoviae PCR (single)	8	8	11	27	**50**	85%
Mycoplasma gallisepticum/Mycoplasma synoviae PCR (pooled)	43	1	-	-	**-**	N/A
Mycoplasma gallisepticum Hemagglutination Inhibition	216	161	161	-	**7**	N/A
Mycoplasma synoviae Hemagglutination Inhibition	216	161	161	-	**7**	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	
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%
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 Inhibiiton Test (RFFIT) *					**2**	N/A
Salmonella spp.						
Salmonella spp. Culture	222	198	296	377	**186**	-51%
Salmonella pullorum Agglutination-Rapid Serum Test	-	-	-	-	**-**	N/A
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%

* *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	
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
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%
Salmonella 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%
Bibersteinia trehalosi 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%
Histophilus somni 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%
Mannheimia heamolytica Culture	118	22%
Mycoplasma bovis PCR	60	28%
Pasteurella multocida Culture	118	13%
Rabies Direct FA	42	14%
Salmonella spp. Culture	39	13%
Tritrichomoniasis PCR	13,266	0.1%
Trueperella pyogenes Culture	118	9%

AVIAN DISEASES

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

PORCINE DISEASES

DISEASE	# OF TESTS	% POSITIVE
Brucella abortus BAPA	464	0%
Brucella abortus CARD	15,142	0%
Brucella abortus FPA	3,576	14%
Brucella abortus STP	1	0%
Brucella 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	*Mannheimia haemolytica*	*Histophilus somni*	*Pasteurella multocida*
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

	URINE		*EARS*		*SKIN & WOUNDS*
ANTIBIOTIC	*Escherichia coli*	*Staph. pseudintermedius*	*Pseudomonas aeruginosa*	*Staph. pseudintermedius*	*Staph. pseudintermedius*
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

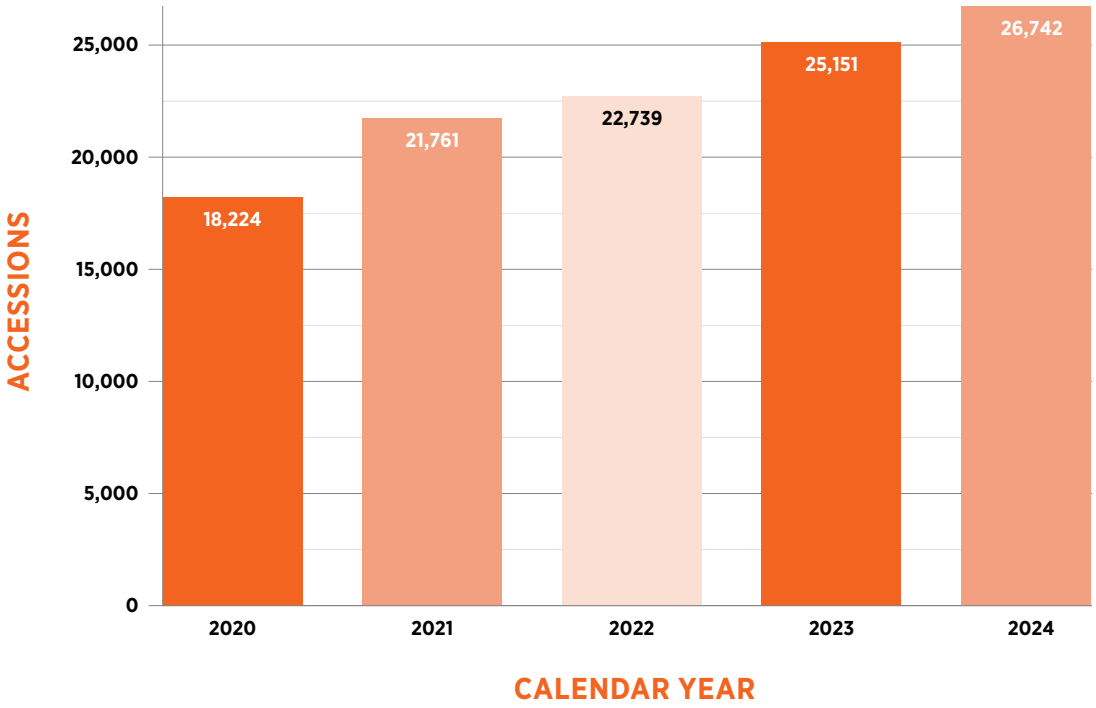
CANINES *(CONTINUED)*

ANTIBIOTIC	URINE		EARS		SKIN & WOUNDS
	Escherichia coli	*Staph. pseudintermedius*	*Pseudomonas aeruginosa*	*Staph. pseudintermedius*	*Staph. pseudintermedius*
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% (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)	

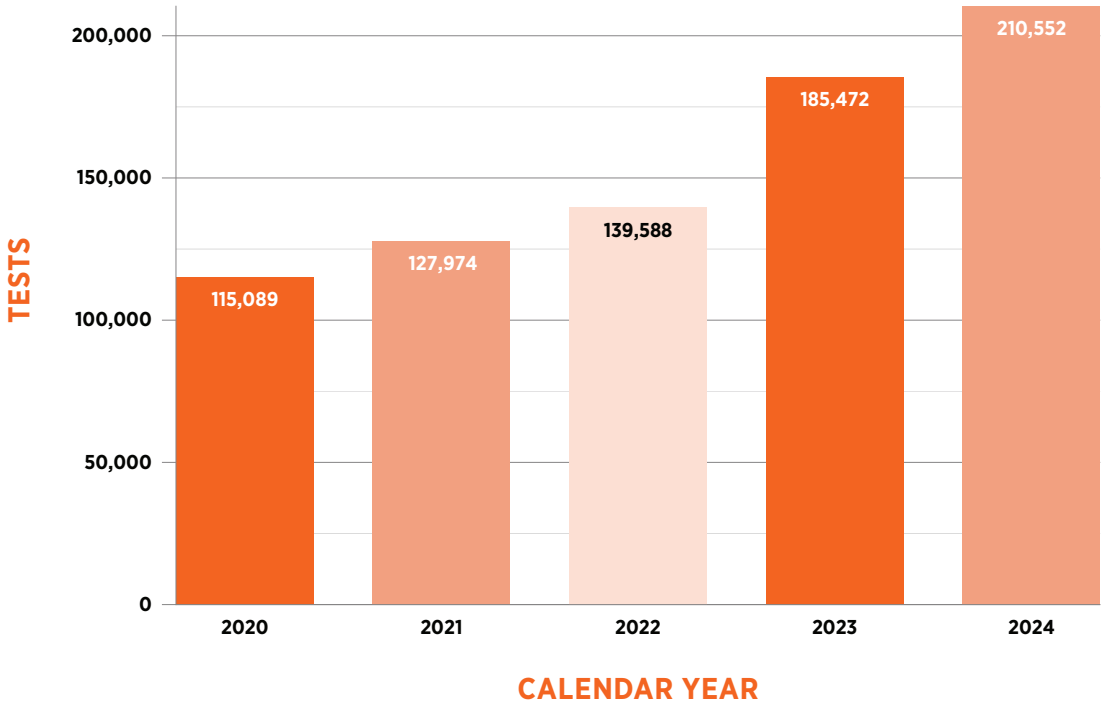
ACCESSIONS AND GENERAL TESTING

5-YEAR TREND

5-YEAR ACCESSION TREND



5-YEAR TEST TREND

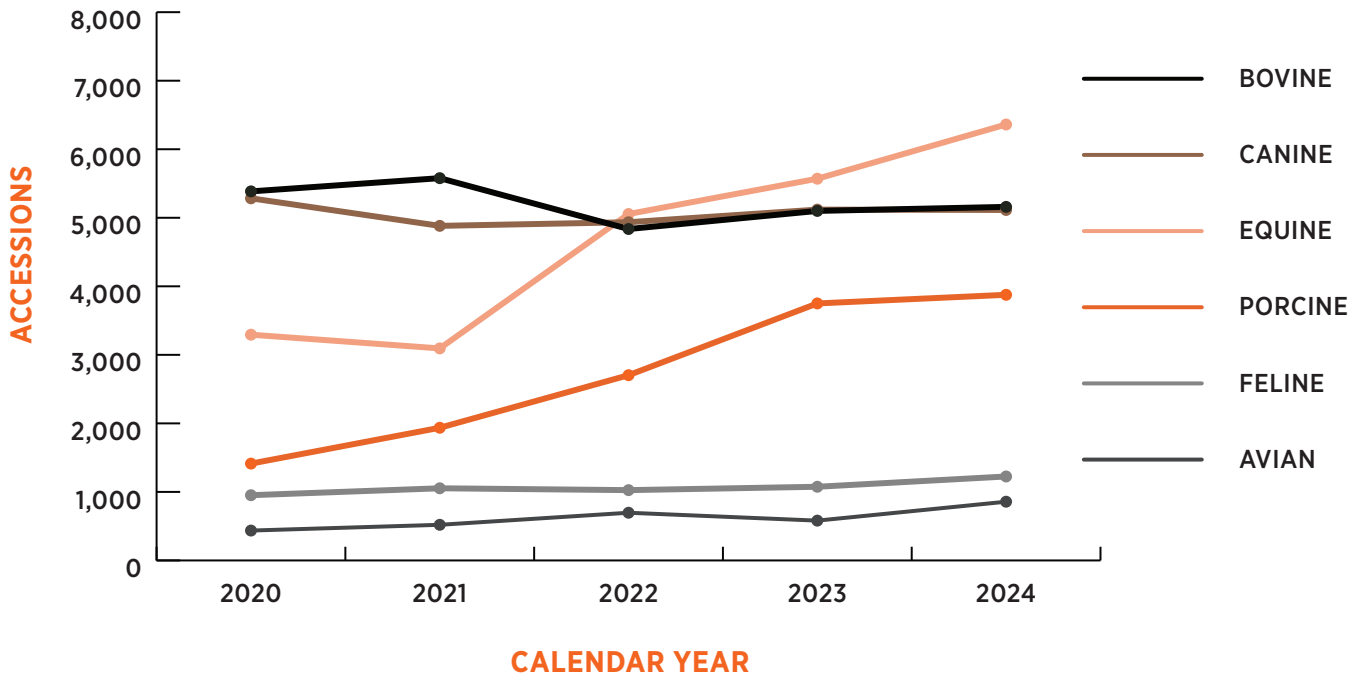


ACCESSIONS BY **SPECIES**

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 Mycoplasmology*
** *Includes Histology and Pathology (Necropsy)*
*** *Includes Serology and Rabies*

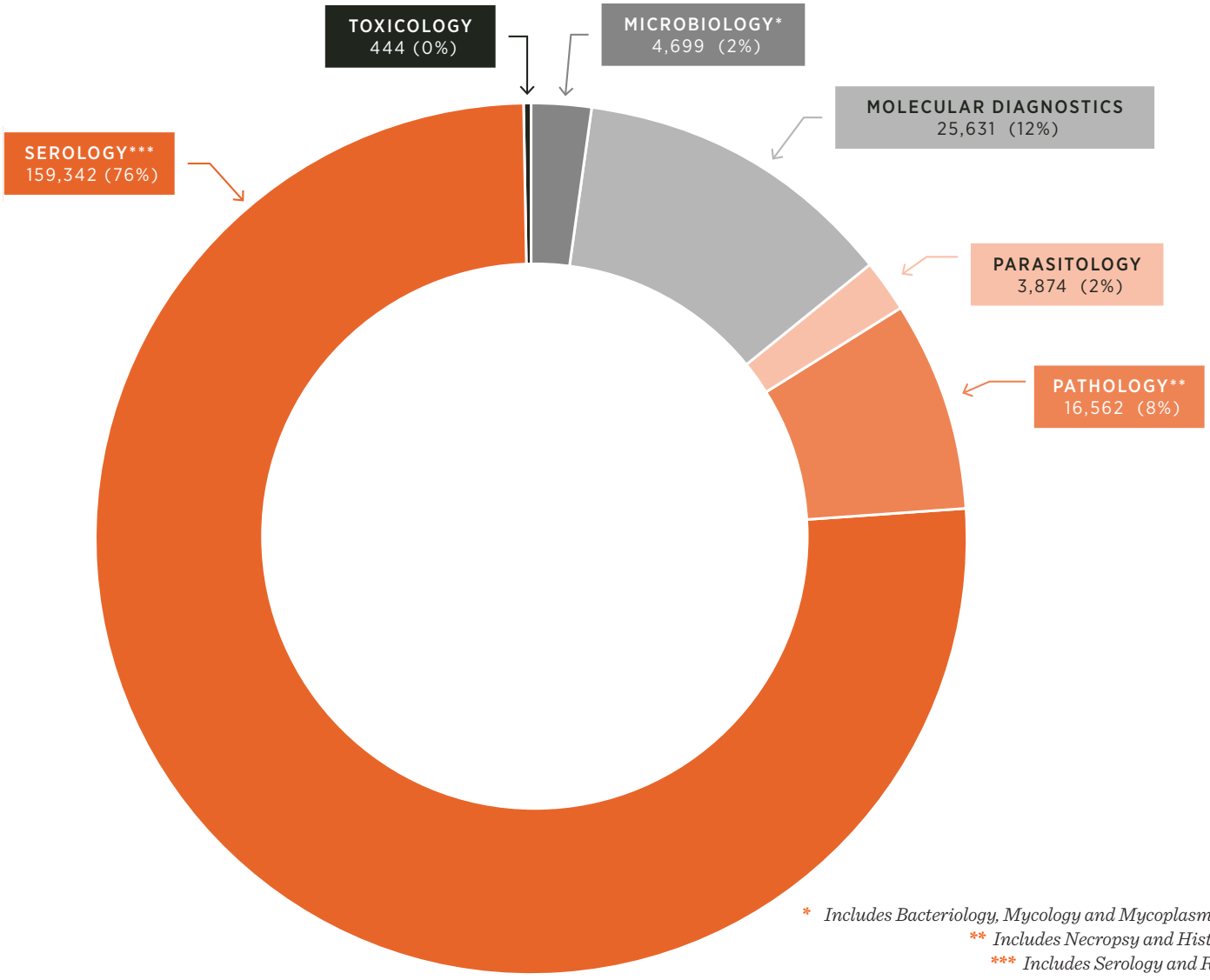
Photo By: Shannon Caseltine

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



* *Includes Bacteriology, Mycology and Mycoplasmology*
** *Includes Necropsy and Histology*
*** *Includes Serology and Rabies*

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%
Salmonella spp. Culture ‡	168	149	246	277	**126**	-55%
Milk Culture	107	94	87	112	**104**	-7%
Clostridium perfringens Culture	119	213	204	213	**88**	-59%
Brucella 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%
Campylobacter fetus Culture	228	162	87	61	**54**	-11%
Blue Green Algae-Microscopic Screening	25	50	58	65	**46**	-29%
Campylobacter jejuni Culture	39	48	152	169	**41**	-76%
Clostridium sp. Culture	26	35	31	45	**41**	-9%
Salmonella pullorum Screening	6	5	33	18	**13**	-28%
Bacillus anthracis 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

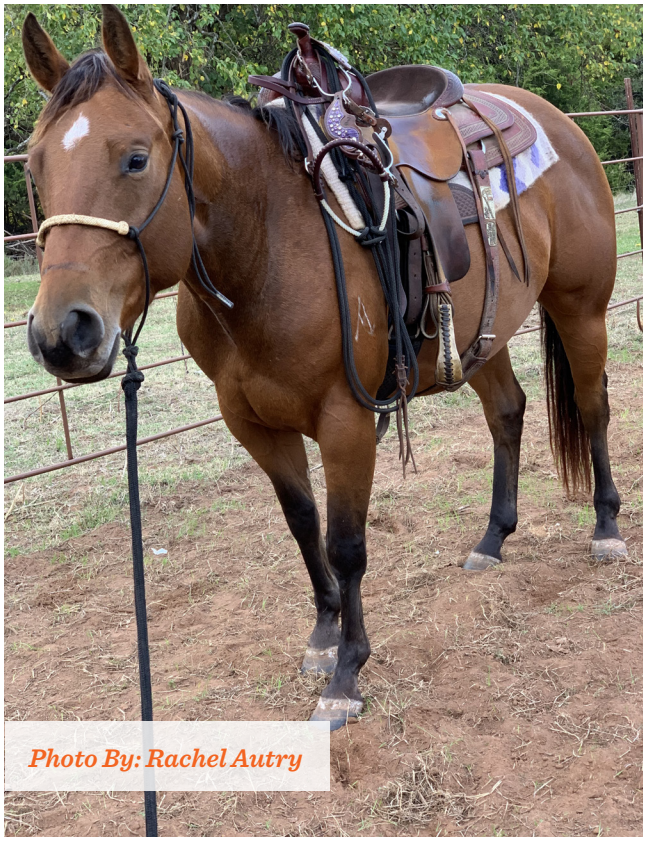


Photo By: Rachel Autry

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	
Mycoplasma spp. Culture	8	15	7	14	7	-50%
Total Tests Per Year	**8**	**15**	**7**	**14**	**7**	**-50%**

Photo By: Emily Cooper

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%
Tritrichomonas foetus Real-Time PCR	5,107	5,009	4,586	4,830	**4,564**	-6%
Avian Influenza PCR	196	243	763	429	**2,167**	405%
Tritrichomonas foetus 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%
Anaplasma marginale 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 *Mycoplasma hyopneumoniae* Real-Time PCR (single and pooled)	5	412	677	132	**88**	-33%

r *In-house and/or Referral Laboratory Testing*

* *Includes individual testing from Molecular Diagnostics Panels*

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%
Cytauxzoon felis PCR	8	16	17	65	**74**	14%
Bluetongue Virus PCR	48	33	59	45	**73**	62%
Mycoplasma bovis PCR *	55	83	72	67	**61**	-9%
BRSV PCR *	57	205	71	62	**58**	-6%
Mycoplasma gallisepticum/M. synoviae PCR (single and pooled)	51	9	11	27	**50**	85%
Clostridium perfringens Multiplex PCR	56	44	65	144	**49**	-66%
Bovine Leukemia Virus PCR †	7	0	1	11	**40**	264%
Leptospira sp. Real-Time PCR	38	32	30	33	**40**	21%
Streptococcus equi 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%
Coxiella burnetii (Q-Fever) PCR	7	2	24	28	**23**	-18%
Canine Respiratory Panel (qPCR) †	56	78	42	70	**22**	-69%
Chlamydophila spp. PCR †	7	7	18	17	**21**	24%
Metagenomics PCR †	3	0	0	0	**21**	N/A
Rickettsia 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%
Lawsonia intracellularis 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

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%**

NECROPSY

5-YEAR TEST TREND

TEST	CALENDAR YEAR 2020	2021	2022	2023	2024	% CHANGE
Gross Necropsy	757	876	843	830	**809**	-3%
Large Biopsy Specimen (10 cm+)	0	0	0	0	**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 2020	2021	2022	2023	2024	% CHANGE
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%
Regross 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

MISCELLANEOUS BIOPSY-RELATED DATA *(CONTINUED)*

5-YEAR TREND

SPECIAL STAIN	CALENDAR YEAR 2020	2021	2022	2023	2024	% CHANGE
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%**

MISCELLANEOUS BIOPSY-RELATED DATA *(CONTINUED)*

5-YEAR TREND

BIOPSY SLIDES	CALENDAR YEAR 2020	2021	2022	2023	2024	% CHANGE
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%

PANELS AND PROFILES

5-YEAR TEST TREND

PANEL/PROFILE	TESTS	CALENDAR YEAR 2020	2021	2022	2023	2024	% CHANGE
Pseudorabies gB ELISA & *Brucella*	Pseudorabies gB ELISA, *B. abortus* Card Test	3,773	4,466	4,596	13,999	**15,141**	8%
Swine Serology Panel 1 **	Brucella Flourescence 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, Johne's 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, *B. abortus* 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, *B. abortus*	224	185	161	194	**186**	-4%
Canine Tick Profile	E. canis SNAP, RMSF IFA, Lyme, *Anaplasma phagocytophilum / A. platys*	46	28	40	75	**59**	-21%
Goat Abortion Panel **	Buetongue Virus AGID, *B. abortus* AGGL, Q-Fever ELISA, *Toxoplasma* IgG IFA, *Leptospira* MAT	3	1	1	6	**1**	-83%
Tick Panel ELISA	*Anaplasma phagocytophilum/ A. platys, Ehrlichia canis/ E. ewingii, Borrelia burgdorferi*	2	1	0	0	**0**	N/A
Bovine Respiratory Panel **	BRSV VN, BVDV-1a VN, BVDV-1b VN, BVDV-2 VN, IBR VN, *H. somni* AGGL, *M. haemolytica* 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

5-YEAR TEST TREND

TEST	CALENDAR YEAR 2020	2021	2022	2023	2024	% CHANGE
Mycoplasma gallisepticum / Mycoplasma synoviae ELISA	21,599	23,705	24,712	34,800	39,071	12%
Salmonella pullorum/typhoid Microagglutination Screen	21,957	23,700	25,200	34,801	39,000	12%
Brucella abortus 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%
Theileria (Babesia) equi 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%
Babesia caballi c-ELISA §	259	289	516	549	883	61%
Anaplasma c-ELISA *	563	805	561	601	841	40%
Rabies dFA Test			717	795	782	-2%
Neospora c-ELISA § *	239	448	403	454	368	-19%
Leptospira Microscopic Agglutination (MAT) *	542	389	242	304	339	12%
Caseous Lymphadenitis SHI §	160	173	231	203	256	26%
Brucella canis 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)*

5-YEAR TEST TREND

TEST	CALENDAR YEAR					% CHANGE
	2020	2021	2022	2023	2024	
Brucella ovis ELISA §	17	11	31	57	61	7%
Anaplasma phagocytophilum/A. platys SNAP *	48	29	40	75	59	-21%
E. canis/E. ewingii 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 Myeloencepthalitis (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 (*Coxiella burnetti*) 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

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

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	
Tritrichomonas foetus 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%
Campylobacter fetus 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
Tritrichomonas foetus 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**

BOARD MEMBER	GROUP REPRESENTED
Dr. Rosslyn Biggs	Oklahoma Cattlemen's Association, Member, Vice Chair Beef Production Committee
Dr. Kelly Black	Director, CVM Veterinary Teaching Hospital
Dr. K. Shawn Blood	Pharmaceutical Industry
Dr. Becky Brewer	USDA APHIS Area Veterinarian in Charge
Dr. Rod Hall	State Veterinarian
Dr. Steve Hart (Past Chair)	Small Ruminant Industry
Dr. Michael Johnston	Equine Industry
Dr. W. H. Mitchell (Board Chair)	Mixed Animal Practice
Dr. Ken Powell	Poultry Industry
Dr. Fawn Reely	OVMA Representative, Sr. Territory Sales Manager at Boehringer-Ingelheim Animal Health
Dr. Jerry Ritchey	Interim Dean, College of Veterinary Medicine
Dr. Donna Slater	Small Animal Practice
Dr. Mike Tripp (Chair)	Swine Industry
Dr. Bret White	Food Animal Practice
Dr. Barry Whitworth (Vice Chair)	Oklahoma Cooperative Extension
Mr. Scott Yates	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 Elctron 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	LABORATORY UNIT	POSITION
Allen, Jason**	Histology	Senior Laboratory Technologist
Allen, Noah	Microbiology	Senior Laboratory Technologist
Autry, Rachel**	Molecular Diagnostics	Senior Laboratory Technologist
Bassham, Brandy**	Receiving Office; Necropsy	Lab Technician
Bloszinsky, Lucas**	Histology	Senior Laboratory Technologist
Bennett, Blaine**	Receiving Office; Necropsy	Laboratory Manager
Bush, Kelsey**	Histology	Senior Laboratory Technologist
Caseltine, Shannon	Rabies/Molecular Diagnostics	Laboratory Supervisor
Cox, Ella**	Receiving Office; Necropsy	Lab Technician
Crockett, Taytum	Serology	Senior Laboratory Technologist
Cullen, Lindsey**	General Office	Medical Records Technician
Danker, Andrew**	Molecular Diagnostics	Senior Laboratory Technologist
Daughtery, Cheyenne**	Molecular Diagnostics	Senior Laboratory Technologist
Deal, Clay	Microbiology	Senior Laboratory Technologist
Fletcher, Harley*	Receiving Office; Necropsy	Lab Technician
Gupta, Sushim	Microbiology	CDC Fellow
Hahn, Raina*	Molecular Diagnostics	Senior Laboratory Technologist
Hamilton, Brianna	Histology	Laboratory Manager
Hergenreder, Katie*	Histology	Senior Laboratory Technologist
Hoyt, Amy	Serology	Laboratory Manager
Kiyuna, Emily	Histology	Laboratory Supervisor
Loane, Megan*	Receiving Office; Necropsy	Laboratory Manager
Looper, Emily	Parasitology	Laboratory Supervisor
Madden, Robin	Molecular Diagnostics	Laboratory Manager
Maloney, Shannon*	General Office	Medical Records Technician
McConnell, Sean*	Histology	Senior Laboratory Technologist
Medellin, Alejandra*	Molecular Diagnostics	Laboratory Supervisor
Minor, Darlene**	Histology	Senior Laboratory Technologist
Morrow-Williams, Makinzi*	Histology	Senior Laboratory Technologist
Norris, Callie*	Serology	Senior Laboratory Technologist
Randall, Jordan	Serology	Senior Laboratory Technologist
Rowden, Michele	Accounting	Accounting Specialist
Smith, Sara**	Molecular Diagnostics	Laboratory Supervisor
Stair, Eron	Histology	Senior Laboratory Technologist
Stanley, Crystal	Serology	Senior Laboratory Technologist
Talent, Scott	Microbiology	Laboratory Manager
Taylor, Stephanie	General Office	Medical Records Supervisor
Voth, Kaitlyn**	General Office	Administrative Assistant
Windiate, Victoria	OADDL Informatics; CVM Laboratory Safety	Coordinator
Woods, Brittany*	Histology	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.

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- 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.
- Skrjabingylus 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.2024.07.002.
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- 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.
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- **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**. Skrjabingylus 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
ACVP	American College of Veterinary Pathology
AGGL	Agglutination Test
AGID	Agar Gel Immunodiffusion Assay
AIV	Avian Influenza Virus
ASF	African Swine Fever
AVMA	American Veterinary Medical Association
BAPA	Buffered Acidified Plate Antigen
BCV	Bovine Coronavirus
BHI	Brain Heart Infusion Medium
BLV	Bovine Leukemia Virus
BRSV	Bovine Respiratory Syncytial Virus
BSE	Bovine Spongiform Encephalopathy
BVD/BVDV	Bovine Viral Diarrhea/BVD Virus
c-ELISA	Competitive (blocking) ELISA
CAE	Caprine Arteritis Encephalitis
CBC	Complete Blood Count
CF	Compliment Fixation
CSF	Classical Swine Fever
CVM	College of Veterinary Medicine
CWD	Chronic Wasting Disease
CY	Calendar Year (January –December)
dFA	Direct Fluorescent Antibody
EEE	Eastern Equine Encephalitis
EHD	Epizootic Hemorrhagic Disease
EHV	Equine Herpesvirus
EIA	Equine Infectious Anemia
ELISA	Enzyme-Linked Immunosorbent Assay
END	Exotic Newcastle Disease
EU	European Union
EVA	Equine Viral Arteritis
FA	Fluorescent Antibody
FMD	Foot and Mouth Disease
FPA	Fluorescence Polarization Assay
GC/MS	Gas Chromatography/Mass Spectrometry
GMS	Grocott's Methenamine Silver stain
H&E	Hematoxylin and Eosin stain
HI	Hemagglutination Inhibition
IBR	Infectious Bovine Rhinotracheitis
IFA/IFAT	Indirect Fluorescent Antibody/IFA Test
IgG	Immunoglobulin G
IgM	Immunoglobulin M
IHC	Immunochemistry
ILT	Infectious Laryngotracheitis
IOR	Instructor of Record
MAT	Microscopic Agglutination Test
MS/MG	*Mycoplasma synoviae/Mycoplasma gallisepticum*
NPIP	National Poultry Improvement Plan
OHRC	Oklahoma Horse Racing Commission
OPP/OPPV	Ovine Progressive Pneumonia/OPP Virus
OSDH	Oklahoma State Department of Health
OSU	Oklahoma State University
OVMA	Oklahoma Veterinary Medical Association
PAS	Periodic Acid-Schiff stain
PBS	Phosphate-buffered Saline
PCR	Polymerase Chain Reaction
PI	Persistently Infected
PI-3	Parainfluenza-3 Virus
PrP	Protease resistant Protein
PRRS/ PRRSV	Porcine Reproductive and Respiratory Syndrome/ PRRS Virus
PRV	Pseudorabies Virus
PTAH	Phosphotungstic Acid Hematoxylin stain
qPCR	quantitative Polymerase Chain Reaction
RAP	Rapid Automated Presumptive
RFFIT	Rapid Fluorescent Focus Inhibition Test
RMSF	Rocky Mountain Spotted Fever
SARS-CoV2	Severe Acute Respiratory Syndrome-Coronavirus 2
SHI	Synergistic Hemolysin Inhibition
SIV	Swine Influenza Virus
SN	Serum Neutralization
sp./spp.	Specie/Species
STP	Standard Plate Test
TAT	Turnaround Time
VMH/VTH	OSU CVM Veterinary Medical Hospital
VN	Virus Neutralization
WNV	West Nile Virus