

# NCVDLS Annual Report

North Carolina Veterinary Diagnostic Laboratory System

Volume 4  
10/30/2015

## 2014-2015



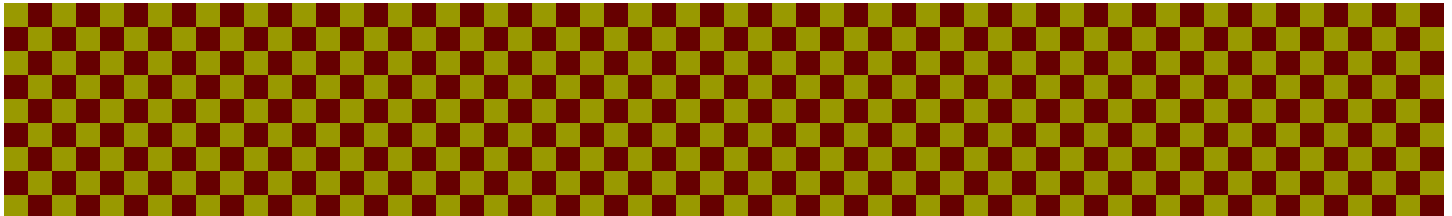
North Carolina Department of Agriculture  
& Consumer Services  
Veterinary Division

Steven W. Troxler, *Commissioner of Agriculture*  
R. Douglas Meckes, DVM, *State Veterinarian*  
Karen W. Post, DVM, MS, *Director of Laboratories*

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## NCVDLS Facilities

Rollins Animal Disease  
Diagnostic Laboratory  
2101 Blue Ridge Road  
Raleigh, NC 27607  
(919) 733-3986

Northwestern Animal Disease  
Diagnostic Laboratory  
1689 N. Bridge St.  
Elkin, NC 28621  
(336) 526-2499

Western Animal Disease  
Diagnostic Laboratory  
785 Airport Road  
Fletcher, NC 28732  
(828) 684-8188

Griffin Animal Disease  
Diagnostic Laboratory  
401 Quarry Rd.  
Monroe, NC 28112  
(704) 289-6448

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## NCVDLS Mission Statement

It is the mission of the North Carolina Veterinary Diagnostic Laboratory System to provide veterinarians, the animal industry, and the citizens of North Carolina with accurate and timely laboratory support services in order to diagnose, conduct surveillance, and assist in responding to and preventing animal disease. Both protection of public health and the food supply are Important components of this mission.



## Message From the Director

On an annual basis, we assemble summaries of the activities within the North Carolina Veterinary Diagnostic Laboratory System (NCVDLS). The information contained within is for the period between July 1, 2014 and June 30, 2015. Data from all four laboratories comprising our system are included.

Services have been on the increase, with an escalation of 1.72% overall in laboratory accessions when compared to the previous fiscal year. We hope you find this information to be both interesting and useful. Our goal, as always, is to provide clients with accurate and timely service to meet our Mission, as stated above. Please do not hesitate to contact me about this annual report, if you have questions.

Respectfully yours,

*Karen W. Post DVM, MS*

Karen W. Post, DVM, MS  
Diplomate ACVM

## NCVDLS Facilities and Laboratory Personnel

### Rollins Animal Disease Diagnostic Laboratory

1031 Mail Service Center  
Raleigh, NC 27699-1031  
Phone: (919)733-3986  
Fax: (919)733-0454

### Director of Laboratories

Karen W. Post, DVM, MS, D-ACVM

### Assistant Director

Richard Mock, PhD

### Administrative Staff

Cheryl Hearn	Administrative Officer I, Section Supervisor
Mechelle Johnson	Administrative Assistant I
Rebecca Boone	Processing Assistant IV
Phyllis Howard	Processing Assistant IV
Connie Howen	Processing Assistant IV
Paul Miller	Processing Assistant III
Cindy Orlosky	Processing Assistant V
Brandy Rodgers	Processing Assistant IV
Tamara Seago	Processing Assistant V
Dell Weaver	Medical Laboratory Assistant II

### Bacteriology

Sandy Murphy, BS, M-ASCP	Medical Laboratory Supervisor I, Section Supervisor
Melissa Cox	Medical Laboratory Technologist I
Lee Goldbach, MS	Medical Laboratory Technologist I
Megan Flowers, BS	Medical Laboratory Technician II
Richard Koch	Medical Laboratory Technologist I
Elizabeth Ortiz, BS	Medical Laboratory Technologist II
Bill O'Shields	Medical Laboratory Assistant III
Jeri Smart, BS,	Medical Laboratory Technologist I
Sommer Souther, BS	Medical Laboratory Technician II
Laura Tweed	Medical Laboratory Technologist I

### Building Maintenance

Stephen Szymczyk	Maintenance Mechanic V, Section Supervisor
Joey Stephenson	Maintenance Mechanic IV

### Information Technology

Josh Shepherd	Business and Technology Applications Analyst, Section Supervisor
Talley Ouro	Business and Technology Applications Analyst

### Molecular Diagnostics

Beverly Wood, BS, MT-ASCP	Laboratory Medical Specialist, Section Supervisor
Neeti Dahal, BS, PhD	Medical Laboratory Technologist II
Younghee Lee, BS	Medical Laboratory Technologist II
Chad Menard, BS	Medical Laboratory Technologist III
Ashlee Zack, BS,	Medical Laboratory Technologist II

### Pathology Services Coordinator

James Trybus, DVM, D-ACVP

### Avian Pathologist

Tahseen Abdul Aziz, DVM, MS, PhD, D-ACPV

### **Anatomic Pathologists**

Allison Boone, DVM, D-ACVP  
Steve Rushton, DVM, D-ACVP  
Alison Tucker, MS, VMD, D-ACVP

### **Diagnosticians**

Mahogany Caesar, MS, DVM  
Jennifer Haugland, DVM  
Stacy Robinson, DVM

### **Necropsy Assistant**

Allie Wetzel, BS Medical Laboratory Technician II

### **Histopathology**

Mary Baker, HT-ASCP Medical Laboratory Technologist III, Section Supervisor  
Danice Gregorowicz Medical Laboratory Technologist I  
Judy Liverman Medical Laboratory Technician II  
Cindy Nipper, HT-ACSP Medical Laboratory Technologist I

### **Immunohistochemistry**

David Weil, BS, HT-ASCP Medical Laboratory Technologist I

### **Quality Assurance and Safety**

Tina Buffington, BS Medical Laboratory Supervisor III, Quality Manager  
Ghazala Jawad, MS Medical Laboratory Supervisor III, Quality Manager  
Paul Hutter, BS Safety Officer III, Division Safety Officer

### **Serology**

Kristen Crook, BS, PhD Medical Laboratory Technologist III, Section Supervisor  
Brandon Brown, BS Medical Laboratory Technologist I  
Kim Gooden Medical Laboratory Technologist I  
Aisha Phipps, BS Medical Laboratory Technologist I

### **Virology**

Chad Cecil, PhD. Medical Laboratory Supervisor III, Section Supervisor  
Jonathan Fox, BS Medical Laboratory Technician II  
Kim Howle, BA, MS Medical Laboratory Technologist III  
Fuhing Lo, BS Medical Laboratory Technician II  
Angie Murphy, BS Medical Laboratory Technologist II  
Excel Swann, BS Medical Laboratory Technologist I  
HuiQing Tang, BS Medical Laboratory Technologist I  
Amy Tyson, BS Medical Laboratory Technologist I

### **NCVDLS Branch Facilities**

#### **Griffin Animal Disease Diagnostic Laboratory**

401 Quarry Road  
Monroe, NC 28112  
Phone: (704)289-6448  
Fax: (704)283-9660

Kim Hagans, DVM Resident Director  
Reg Ridenhour, DVM Veterinary Diagnostician  
Sherry Casey Processing Assistant IV  
Kathy Harwood, AAS Medical Laboratory Technologist I  
Carrie Lichtenhan, BS Medical Laboratory Technician II  
Kristie Long Medical Laboratory Technician II  
Jimmy Walters Medical Laboratory Assistant II

**Northwestern Animal Disease Diagnostic Laboratory**

1689 N. Bridge St.  
Elkin, NC 28621  
Phone: (336)526-2499  
Fax: (336)526-2603

Brad Barlow, DVM	Resident Director
Jessica Kees, DVM	Veterinary Diagnostician
Barbara Bright, BS	Medical Laboratory Technologist II
Marcella Galyean , AAS	Medical Laboratory Technician II
Nicholas Mosley	Veterinary Laboratory Assistant I
Cindy Smith	Processing Assistant IV

**Western Animal Disease Diagnostic Laboratory**

785 Airport Road  
Fletcher, NC 28732  
Phone: (828)684-8188  
Fax: (828)687-3574

Richard Oliver, DVM	Resident Director
David Drum, DVM, MS	Veterinary Diagnostician
Darlene Ayers	Processing Assistant IV
Lia Barth, BS	Medical Laboratory Technician II
Wilson Smith	Medical Laboratory Assistant II
Mary Swanson, DVM	Medical Laboratory Technician II



**SERVICE MILESTONES, 2013-2014**

Phyllis Howard	5 years
Nicholas Mosley	5 years
Connie Howen	5 years
Brandy Rodgers	10 years
Dr. David Drum	10 years
Tamara Seago	10 years
Dr. Kimberly Hagans	15 years
Judy Liverman	15 years
Brandon Brown	15 years
Beverly Wood	25 years
Barbara Bright	25 years

**RETIREMENTS**

Elsie F. Coombs	Rollins Laboratory Histology	9/1/2014
Brenda Howell	Northwestern Lab Admin	9/1/2014



## External Laboratory Advisory Committee Members

NAME	ADDRESS
Dr. Allen Cannedy Mixed Practice	Small Ruminant and Camelid Services 110 Merlot Drive Hillsborough, NC 27278
Dr. Eric Gonder Poultry – Turkeys	Butterball, LLC PO Box 10009 Goldsboro, NC 27532
Dr. Jennifer Haugland NCVDLS	Rollins Diagnostic Laboratory 1031 Mail Service Center Raleigh, NC 27699-1031
Dr. Richard Kirkman Large Animal	20416 US Hwy 64 West P O Box 350 Siler City, NC 27344
Dr. Shannon Jennings Poultry – Chickens & Turkeys	House of Raeford P O Box 699 Rose Hill, NC 28458
Dr. David Marshall State Veterinarian	NCDA&CS, Veterinary Division 1030 Mail Service Center Raleigh, NC 27699-1030
Dr. Richard Mock NCVDLS	Rollins Diagnostic Laboratory 1031 Mail Service Center Raleigh, NC 27699-1031
Dr. Karen Post NCVDLS	Rollins Diagnostic Laboratory 1031 Mail Service Center Raleigh, NC 27699-1031
Dr. Rick Sharpton Poultry – Chickens	Perdue, Inc. 1071 Vicksburg Dr. Winterville, NC 28590
Dr. Betsy Sigmon Small Animal	Creature Comforts Animal Hospital 3435 Kildaire Farm Road Cary, NC 27518
Dr. Chad Smith Corporate Swine	Goldsboro Milling Co. 938 Miller’s Chapel Road Goldsboro, NC 27532
Dr. Becky Tilley Poultry – Turkeys	Butterball, LLC PO Box 10009 Goldsboro, NC 27532

The NCVDLS established an External Laboratory Advisory Committee (ELAC) in 2005. Our initial purpose was to better serve our clients by uniting a diverse group of veterinarians and industry representatives to discuss the laboratory’s offered services, as well as legislation that directly affected our mission. We are appreciative of their time and advice.

**General Funds, Funded Contracts and Cooperative Agreements**  
**2014-2015 NCVDLs General Funds**

<b>Budget Summary</b>	<b>2013/2014</b>	<b>2014/2015</b>
Purchased Contractual Services 5321	\$124,583	\$174,526
Utility/Energy Services 5322	313,109	\$303,378
Repair Services 5323	152,966	\$101,969
Maintenance Agreements 5324	63,001	\$87,921
Rentals/Leases 5325	6,847	\$6,323
Travel & Other Employee Expenses 5327	43,964	\$39,217
Communications & Data 5328	100,852	\$99,574
Other Services 5329	12,531	\$14,602
General Admin Supplies 5331	35,606	\$38,141
Facility and Hardware Supplies 5332	31,664	\$28,032
Vehicle/Equipment Operating Supplies 5333	1,655	\$1,748
Clothing and Recreational Supplies 5335	3,755	\$730
Research/Development & Edu Supplies 5337	1,224,343	\$1,248,477
Other Materials & Supplies 5339	1,290	\$5,811
Equipment 5345	227,235	\$107,264
Art, Other Artifacts & Literature 5346	2,000	\$1,822
Intangible Assets (Computer software) 5347	35,171	\$3,131
Legal, Licenses & Permit Costs 5351	5,991	\$6,715
Other Admin Expenses 5358	\$0	\$4,867
Other Expenses 5359	1,934	\$4,029
Transfer of Appropriations 5389	3,754	\$80,281
<b>TOTAL</b>	<b>2,392,250</b>	<b>\$2,358,558</b>
Personal Services (Salaries, Benefits, etc.)	4,869,938	\$5,257,814
<b>TOTAL</b>	<b>7,262,188</b>	<b>\$7,616,371</b>

**2013/2014 Recurring Cooperative or Blanket Purchase Agreements**

USDA-APHIS-VS Blanket Purchase Agreement—\$24,440

- reimbursement for BSE Surveillance Sample Collection and Testing

USDA-APHIS-VS Blanket Purchase Agreement—\$6,480

- reimbursement for Scrapie Sample Collection and Testing

USDA-APHIS-WS Blanket Purchase Agreement—\$70,000

- reimbursement for Swine Influenza sample testing in feral swine

USDA-APHIS-VS Blanket Purchase Agreement—\$155,925

- reimbursement for African Swine Fever and Food and Mouth Disease testing

USDA-APHIS-VS Blanket Purchase Agreement—\$14,000

- reimbursement for SECD testing by RT-PCR

USDA-AHPIS-VS Swine Surveillance Cooperative Agreement—\$62,200

- reimbursement for surveillance and testing of Classical Swine Fever and PRV samples

USDA-NIFA Cooperative Agreement—\$202,000

- to aid the Food and Agriculture Defense Initiative for surveillance and early detection of animal diseases

**2014-2015 Physical Improvements/New Equipment Purchases**

**Rollins Laboratory**

- Molecular Diagnostics—2 ABI Thermal cyclers, 1 Smart Cycler desktop computer
- Serology—Heraeus Labofuge centrifuge, Thermo Upright Ultra Low Freezer

**Griffin Laboratory**

- Xerox copier/fax combination, Toshiba telephone system

**Western Laboratory**

- Labconco Paramount Hood

**2014-2015 Test Procedures Added**

- Rollins Lab Molecular Diagnostics—Equine Herpes Virus Rt-PCR
- Rollins Laboratory IHC—PNL2 Cell Marker Test
- Rollins Laboratory Serology—*Toxoplasma gondii* ELISA, Q Fever ELISA

**Professional Development and Outreach**

<b><u>FNAME</u></b>	<b><u>MEETING</u></b>	<b><u>CITY</u></b>	<b><u>BEG DATE</u></b>
Dr. Mahogany Caesar	2015 SEVPAC	Tifton, GA	5/29/2015
Dr. Chad Cecil	2014 USAHA/AAVLD Annual Meeting	Kansas City, MO	10/15/2014
Dr. Allison Boone	ACVP 2014 Annual Meeting	Atlanta, GA	11/7/2014
Tina Buffington	2014 USAHA/AAVLD Annual Meeting	Kansas City, MO	10/17/2014
Dr. David Drum	Blackmon Annual Equine Encore Conference	Athens, GA	11/5/2014
	Biomedical/Diagnostic Practice Mngmt Conference	Knoxville, TN	12/3/2014
Dr. Kimberly Hagans	2015 Emerald Coast Veterinary Conference	Destin, FL	6/3/2015
Ghazala Jawad	2014 USAHA/AAVLD Annual Meeting	Kansas City, MO	10/15/2014
Dr. Jessica Kees	AVMA Certification	Ames, IA	9/8/2014
	ACVP 2014 Annual Meeting	Atlanta, GA	11/9/2014
Dr. Richard Mock	2014 USAHA/AAVLD Annual Meeting	Kansas City, MO	10/16/2014
Dr. Karen Post	2014 USAHA/AAVLD Annual Meeting	Kansas City, MO	10/16/2014
Dr. Reginald Ridenhour	2014 USAHA/AAVLD Annual Meeting	Kansas City, MO	10/17/2014
Dr. Stacy Robinson	2014 USAHA/AAVLD Annual Meeting	Kansas City, MO	10/16/2014
Dr. Steven Rushton	2014 USAHA/AAVLD Annual Meeting	Kansas City, MO	10/16/2014
Dr. James Trybus	2014 USAHA/AAVLD Annual Meeting	Kansas City, MO	10/15/2014
Dr. Alison Tucker	ACVP 2014 Annual Meeting	Atlanta, GA	11/9/2014

## PROFICIENCY TESTING

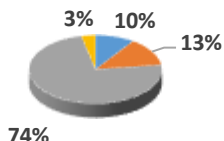
All four laboratories of the NCVDLs participate in proficiency testing from outside agencies. In addition to these external proficiency tests, laboratory sections participate in internal testing.

Blind Sample Tests are administered by section supervisors to random technologists. Samples have “dummy”

External Proficiency Testing	Test	Laboratory Section	Administering Agency
Internal Bacteriology QA Survey	Bacterial culture identification	Rollins Lab Bacteriology	AAVLD
<i>Salmonella</i> Group D	Environmental culture	Rollins Lab Bacteriology	NPIP
Southern Bug Exchange Inter-Laboratory Comparison Program	Bacterial culture identification	Rollins Lab Bacteriology	Consortium of Southern VDLS
<i>Tylorella equigenitalis</i>	Bacterial identification	Rollins Lab Bacteriology	NVSL
Leptospirosis	IHC Panel (Ring Test)	Rollins Lab IHC	AAVLD/NVSL
<i>Neospora Caninum</i>	Ring Test	Rollins Lab IHC	AAVLD/NVSL
Avian Influenza	Matrix Primer/ Probe Sets & H5 Primer/ Probe Sets, H5 & H7 PCR	Rollins Lab Molecular	NAHLN
Avian Paramyxovirus -1	END/NDV for Matrix and Fusion Primer/ Probe Sets	Rollins Lab Molecular	NAHLN
Swine Influenza Virus	Rt-PCR	Rollins Lab Molecular	NAHLN
CSF/FMD	Rt-PCR	Rollins Lab Molecular	NAHLN
MG & MS PCR	PCR	Rollins Lab Molecular	NPIP
African Swine Fever & Rinderpest Virus	PCR	Rollins Lab Molecular	NAHLN
PED and PDCoV	PCR	Rollins Lab Molecular	NAHLN
Brucellosis	BAPA, Card	Rollins Lab Serology	NVSL
Anaplasmosis	c-ELISA	Rollins Lab Serology	NVSL
Johne's Disease	ELISA	Rollins Lab Serology	NVSL
Leptospirosis	MAT	Rollins Lab Serology	NVSL
MG & MS Serology	Plate, ELISA & HI	Rollins Lab Serology	NPIP
Avian Influenza	AGID	Rollins Lab Virology	NVSL
Bovine Leukosis Virus	ELISA	Rollins Lab Virology	NVSL
Pseudorabies	ELISA (G1 & GB), Latex	Rollins Lab Virology	NVSL
Bluetongue	ELISA	Rollins Lab Virology	NVSL
Equine Infectious Anemia	AGID	Rollins Lab Virology	NVSL
West Nile Virus Panel—Equine	IgM Capture ELISA	Rollins Lab Virology	NVSL
<i>Salmonella</i> Group D	Environmental culture	Griffin Lab Bacteriology	NPIP
MG & MS Serology	Plate, ELISA & HI	Griffin Lab Serology	NPIP
Avian Influenza	AGID	Griffin Lab Virology	NVSL
Brucellosis	BAPA, Card	Western Lab Serology	NVSL
Equine Infectious Anemia	AGID	Western Lab Virology	NVSL
Avian Influenza	AGID	Northwestern Lab Serology	NVSL
MG & MS Serology	Plate, ELISA	Northwestern Lab Serology	NPIP

## NCVDLS 2014-2015 \*Accession Information

**Total Accession Count for NCVDLS:  
37,483**  
Increase over 2013-2014 of 1.75%



- Griffin Animal Disease Diagnostic Laboratory - 3,589
- Northwestern Animal Disease Diagnostic Laboratory - 5,010
- Rollins Animal Disease Diagnostic Laboratory - 27,586
- Western Animal Disease Diagnostic Laboratory - 1,298

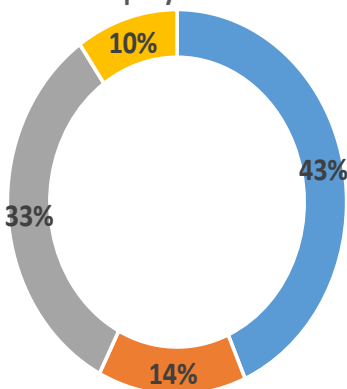
### Total Test Count by Animal Species

Avian	1,216,845	92.85%
Bovine	19,066	1.45%
Camelid	1,597	0.12%
Canine	26,955	2.06%
Caprine	6,493	0.50%
Equine	15,190	1.16%
Feline	7,042	0.54%
Fish	107	0.01%
Miscellaneous	2,103	0.16%
Ovine	1,334	0.10%
Porcine	13,819	1.05%
<b>TOTAL</b>	<b>1,310,551</b>	<b>100.00%</b>

### Fiscal Year Comparison of Accessions FY 13/14 to FY14/15

	2013-2014	2014-2015	% Increase
Rollins	27,146	27,586	1.60%
Western	1,269	1,298	2.23%
Northwestern	4,914	5,010	1.92%
Griffin	3,511	3,589	2.17%
<b>Total</b>	<b>36,840</b>	<b>37,483</b>	<b>1.72%</b>

### NCVDLS Necropsy Test Count - 7,332



- Rollins Laboratory - 3,184
- Northwestern Laboratory - 2,398
- Griffin Laboratory - 1,037
- Western Laboratory - 713

\*Accessions may contain more than one test , discipline, and sample.

## NCVDLS Total Test Count and Accession Count Comparison

Year	Test Count	Accession Count
2011-2012	1,261,563	32,583
2012-2013	1,261,919	34,728
2013-2014	1,310,713	36,840
2014-2015	1,327,843	37,483



## NCVDLS Test Count Comparison by Laboratory Discipline

Laboratory Discipline	2011-2012	2012-2013	2013-2014	2014-2015
Bacteriology	16,258	17,647	15,843	15,277
Cytology	1,263	1,440	1,601	1,805
Histopathology	38,189	40,940	43,017	44,920
Immunohistochemistry	576	690	594	792
Molecular Diagnostics	9,642	11,689	16,125	15,302
Mycology	263	245	233	252
Necropsy	8,463	7,337	7,844	7,332
Outsource	1,843	1,419	1,299	1,270
Parasitology	2,578	2,801	3,040	3,047
Serology	913,570	886,698	935,650	940,244
Virology	268,849	291,023	285,543	297,602
<b>TOTAL</b>	<b>1,261,494</b>	<b>1,261,929</b>	<b>1,310,789</b>	<b>1,327,843</b>

### Accession Counts Comparison

Lab	2011-2012	2012-2013	2013-2014	2014-2015
Rollins Lab	23,885	25,239	27,146	27,586
Griffin Lab	3,156	3,629	3,511	3,589
Northwestern Lab	4,618	4,755	4,914	5,010
Western Lab	924	1,105	1,269	1,298
	32,583	34,728	36,840	37,483

### Test Counts Comparison

Lab	2011-2012	2012-2013	2013-2014	2014-2015
Rollins Lab	533,173	516,266	511,654	517,174
Griffin Lab	171,836	184,920	210,484	222,132
Northwestern Lab	554,724	558,693	586,088	586,046
Western Lab	1,761	2,050	2,563	2,491
	1,261,494	1,261,929	1,310,789	1,327,843

Top Twenty-Five Tests	2014-2015	2013-2014	2012-2013
<i>Mycoplasma gallisepticum</i> (ELISA)	348,352	317,774	201,779
<i>Mycoplasma synoviae</i> (ELISA)	345,716	317,526	202,030
Avian Influenza (AGID)	139,647	137,912	130,950
<i>Mycoplasma synoviae</i> (Plate)	85,082	115,098	207,844
<i>Mycoplasma gallisepticum</i> (Plate)	84,925	115,150	207,599
Avian Influenza (ELISA)	82,011	80,209	80,853
<i>Mycoplasma meleagridis</i> (ELISA)	47,522	43,295	41,633
Histopathology H & E	42,213	40,982	38,816
Infectious Bursal Disease (ELISA)	12,848	10,374	10,954
REO (ELISA)	12,520	10,263	11,113
Infectious Bronchitis Virus (ELISA)	12,178	9,410	10,896
Avian Paramyxovirus-1 (APMV-1) (ELISA)	11,951	9,349	10,688
<i>Salmonella pullorum</i> (Plate)	10,800	12,300	9,601
Equine Infectious Anemia (AGID)	10,531	10,868	9,426
Aerobic Culture	7,629	8,014	8,247
Avian Influenza Matrix RRT-PCR	6,643	6,994	5,109
<i>Brucella abortus</i> (BAPA) (Plate)	4,780	4,821	6,440
Gross Exam Poultry	4,032	4,611	4,854
<i>Salmonella pullorum</i> (Tube)	3,736	3,439	3,679
Chicken Anemia Virus 1:10 (CAV) (ELISA)	3,391	3,165	4,137
NPIP <i>Salmonella</i> Culture	3,007	2,655	3,484
Pseudorabies Virus gB (ELISA)	2,411	5,113	4,289
Antimicrobial Susceptibility	2,118	2,189	2,588
Avian Encephalomyelitis Virus (ELISA)	1,906	1,873	1,265
Johne's ELISA	1,871	1,605	1,267