

## VETERINARY CLINICAL PATHOLOGY RESIDENCY AND GRADUATE PROGRAM

Department of Biomedical Sciences and Pathobiology

Virginia-Maryland College of Veterinary Medicine

Virginia Tech

5/30/2023

- I. Program goals
  - a. The goal of the Combined Veterinary Clinical Pathology Residency and MS/PhD Program (hereafter referred to as the Program) is to produce a competent diagnostic clinical pathologist that is qualified for board certification by the American College of Veterinary Pathologists (ACVP), and experience in all aspects of research.
- II. Objectives
  - a. The Program will provide residents with the following:
    - i. Advanced training in all aspects of veterinary clinical pathology
    - ii. Fulfillment of requirements for ACVP board eligibility
    - iii. Graduate coursework toward an advanced degree
    - iv. Experience in all aspects of research, including study design, conducting a project, scientific writing, and oral presentation
    - v. Teaching experience
- III. Prerequisites
  - a. Mandatory prerequisites for application to the Program include:
    - i. A DVM or equivalent degree from an AVMA-accredited veterinary college or equivalent foreign degree
    - ii. Admission to the Graduate School Programs of VMCVM and Virginia Tech (<https://graduateschool.vt.edu/admissions/how-to-apply.html>)
  - b. Highly desirable but not mandatory prerequisites for application to the Program include:
    - i. At least one year of post-DVM graduate clinical experience
- IV. Application procedure
  - a. Candidates will be judged on the following required materials:
    - i. Letter of intent
    - ii. Curriculum vitae
    - iii. 3 letters of reference
      1. At least 1 letter (preferably 2 letters) should be from a veterinary clinical pathologist
      2. At least 1 letter should comment on the applicant's research experience
    - iv. Official college transcripts from all undergraduate, graduate, and professional schools attended
    - v. Official TOEFL scores (for applicants whose primary language is not English)
  - b. All required materials and inquiries should be sent to the Veterinary Clinical Pathology Resident Coordinator, Dr. Kurt Zimmerman ([kzjmm@vt.edu](mailto:kzjmm@vt.edu)), VMCVM, 205 Duckpond Drive, Phase II, Virginia Tech (0442), Blacksburg, VA 24061.
  - c. The deadline for application is November 1 before the start of the Program.
  - d. Admission to the pathology residency program will be contingent upon admission to the VMCVM Graduate School Program.
- V. Administration of the program
  - a. The Program will be administered by the Department of Biomedical Sciences and Pathobiology (DBSP) and the Biomedical and Veterinary Sciences (BMVS) Graduate Program.
  - b. The Program will begin with the start early July, and will span 3-5 years, depending on

the graduate degree (MS/PhD)(Table 1).

**Table 1.** Approximate Timetable for the PhD/Residency; see BMVS Graduate Handbook for details on MS/PhD timelines: <https://intranet.vetmed.vt.edu/Academics/BMVStudentInformation>

Year of Residency	Semester	Key Dates	Residency	PhD
1	1	July start	Clinic duty	Form a committee
			Course work	Lab Work
	2		Clinic duty	Develop Plan of Study
			Course work	Formulate an initial research proposal
				Hold a committee meeting
2	3	Sept Apply Phase 1 Exam	Clinic duty	Refine research proposal
			Course work	Hold a committee meeting
				Lab work
	4	March Phase 1 Exam	Clinic duty	Refine research proposal
			Course work	Hold a committee meeting
				Prelim Exam (may delayed to yr 4)
				Lab work
3	5		Clinic duty	Refine research proposal
			Course work	Hold a committee meeting
				Lab work
	6	Feb Apply Phase II Exam	Clinic duty	Finalize research proposal
			Course work	Hold a committee meeting (minimum 1/yr after Semester 5)
				Lab work
4	7	Aug Phase 2 Exam	Clinic duty	Hold a committee meeting (minimum 1/yr after Semester 5)
				Lab work
	8		Clinic duty	Hold a committee meeting (minimum 1/yr after Semester 5)
				Lab work
5	9		Clinic duty	Hold a committee meeting (minimum 1/yr after Semester 5)
				Lab work
	10		Clinic duty	Hold a committee meeting (minimum 1/yr after Semester 5)
				Complete lab work
				Write Dissertation
			Dissertation Defense	

c. Resident Coordinator

- i. The resident will be pre-assigned a Resident Coordinator board certified in veterinary clinical pathology by the ACVP.

d. MS/PhD Advisor and graduate committee

- i. The resident will select a MS/PhD Advisor and Committee during the first year of the Program.
- ii. At least one clinical pathologist in DBSP will be on the resident's MS/PhD Committee.
- iii. The MS/PhD Advisor and Committee will be in charge of administering the MS/PhD component of the resident's Program.
- iv. The resident's MS/PhD program will not interfere with the resident's training in clinical pathology (see Section VI).

VI. Clinical pathology residency

a. Evaluation

- i. Residents will take a mock board examination each year of the Program in which they still need to be boarded.
- ii. The resident will be formally evaluated once each year by all of the Program's clinical pathologists (see Page 6).
- iii. Evaluations will be discussed with and returned to the resident, and the Resident Coordinator will retain a copy.

b. Clinical pathology service duty (Table 2)

- i. Residents will provide diagnostic service, along with an ACVP-boarded

clinical pathologist, to the VMCVM Veterinary Teaching Hospital Clinical Laboratory.

- ii. Independent weekends and holidays will begin sometime during the resident's 2<sup>nd</sup> or 3<sup>rd</sup> year at the discretion of the CP faculty.
- c. Surgical biopsy service duty (Table 2)
  - i. Residents will complete 15 days of surgical biopsy service duty, along with an ACVP-boarded anatomic pathologist, during the first 3 yrs. of the Program.

**Table 2.** Approximate Time Residents will be on Service Duty.

Year in Program	Service Type	Approximate Duration	Comments
1 <sup>st</sup>	CP	60 days/year	This is a flexible schedule tailored to student
	SB	5 days/year	
2 <sup>nd</sup>	CP	90 days/year	1 month off for phase 1 boards
	SB	5 days/year	
3 <sup>rd</sup>	CP	90 days/year	2 months off for phase 2 boards
	SB	5 days/year	
4 <sup>th</sup>		20 days/year	
5 <sup>th</sup>		20 days/year	

Abbreviations: CP, clinical pathology; SB, surgical biopsies

- d. Time off service
  - i. The time spent off of service should be used for advancement in the Program, such as studying for board certification and graduate courses, completing presentations, manuscripts and research projects, and preparing for teaching.
  - ii. Residents have 96hrs (12 days) of annual leave. University holidays and study time leave (when not on emergency duty) are not counted as leave time.
  - iii. Annual leave does not reduce duty requirements.
  - iv. University breaks, e.g., spring, summer, and winter break, are not considered holidays from assigned clinic duty if the VTH is open.
  - v. Resident leave should be coordinated and approved by their major PhD/MS advisor and the residency coordinator. Leave should be planned around assigned clinical duty and laboratory work schedules.
- e. Teaching
  - i. During the 1<sup>st</sup> year of the Program, residents will attend when able DVM lectures and laboratories led by a clinical pathology faculty member. During years 2-5 (6) of the program, residents will attend all laboratories.
  - ii. Residents will participate in clinical instruction of senior veterinary students in the Laboratory Services Clerkship.
  - iii. Residents will organize the weekly case presentation schedule for the Pathology Club rounds at least once a semester.
  - iv. Residents will assist at any continuing education seminars offered by the DBSP's clinical pathology service.
- f. Coursework and seminars

- i. Residents will complete the coursework required by the Residency Program (Table 3) and the BMVS Graduate Program (see Graduate Student Handbook).
- ii. All resident courses will be completed within the first 3 years of the Program.
- iii. Residents are expected to achieve marks that are required by the Graduate School (i.e. a cumulative GPA of at least 3.0).

**Table 3.** Clinical pathology residency courses.

Required resident courses and rounds				
Course	Name	Faculty	Freq	Credits
BMVS 5014	Animal path residency	Path faculty	weekly	variable
Indep study	Oncologic pathology (Meuten)	Zimmerman	weekly	3
Indep study	Hematology (Schalms)	CP faculty	weekly	3
Indep study	Clinical Chemistry Topics (Stockham/Tietz/DiBartola)	CP faculty	weekly	3
BMVS 5284	Cellular pathology (Cotran/Zackary)	Zimmerman	weekly	3
Audit	Adv Histopathology	Lammers	weekly	2
Attend	Histopathology rounds	Carvallo	1/month	na
Attend	Clin Path case rounds	CP faculty	weekly	na
Attend	Clin Path resident rounds	CP faculty	weekly	na

g. Rounds

- i. Residents will attend, participate in, and lead weekly Cytology Rounds and Clinical Pathology Resident Rounds.
- ii. Residents will attend and participate in weekly Histopathology Rounds (BMVS 5194) at least 1x a month.

h. Annual meetings

- i. Residents are encouraged to submit a case or poster/platform presentation each year to an annual national meeting, such as the ACVP/ASVCP Concurrent Annual Meetings.
- ii. Residents are required to present at other seminar series and the VMRCVM Annual Research Symposium (see graduate handbook for requirements)

i. Funding

- i. Residents are encouraged to attend one conference per year. DBSP will cover expenses above the \$1000.00 PD provided by ViTALS with reasonable expenses.
- ii. DBSP will cover \$1,700.00 of board expenses over three years.
- iii. DBSP will cover Tifton expenses. Estimated expenses per person are \$250.00. Fleet services van rental will add \$300 per trip. If a van isn't used, personal vehicle expenses will be reimbursed case-by-case.
- iv. ViTALS will enter all reimbursements for residents with DBSP supplying fund numbers when necessary.

a. Research and publications

- i. Residents will be the primary author on at least one "What is Your Diagnosis?" or "Case Report" manuscript in a refereed journal.

- b. ACVP boards
  - i. Residents will be ACVP board eligible at the discretion of the Program's clinical pathologists.
  - ii. Boards preparation
    - 1. The resident is encouraged to schedule at least 1 week/month of dedicated board exam preparation time.
    - 2. Completely protected board preparation time will begin 4 weeks immediately before taking Phase 1 and 8 weeks before the Phase 2 exam (first attempt). During this time, the resident will not have any other commitments to the Program, including service duty, coursework, or MS/PhD research.
  - iii. Requirements for endorsement to sit for the Phase 2, ACVP board examination include:
    - 1. Completion of duty assignments
    - 2. Completion of coursework
    - 3. Outlined and accepted Graduate project or thesis draft if MS.
    - 4. At least 1 manuscript accepted to a peer-reviewed journal
    - 5. Passing/acceptable scores on a mock board exam
  - iii. Program completion
    - a. Residents are encouraged to evaluate the Program by meeting with the Department Head for an exit interview upon completion.
  - iv. Acknowledgement of requirements
    - a. I have read, and I understand and agree to the Program's requirements.

	Printed Name	Signature	Date
Resident:	_____	_____	_____
Residency Coordinator:	_____	_____	_____
PhD Advisor:	_____	_____	_____

**I. CLINICAL PATHOLOGY RESIDENT EVALUATION**  
 Department of Biomedical Sciences and Pathobiology  
 Virginia-Maryland College of Veterinary Medicine  
 Virginia Tech

Date of Evaluation: \_\_\_\_\_

Resident: \_\_\_\_\_ Signature: \_\_\_\_\_

Resident Coordinator: \_\_\_\_\_ Signature: \_\_\_\_\_

Clinical Pathologist: \_\_\_\_\_ Signature: \_\_\_\_\_

Clinical Pathologist: \_\_\_\_\_ Signature: \_\_\_\_\_

	Exceeds Expectations	Meets Expectations	Needs Improvement
Knowledge	+	+	+
Skills	+	+	+
Responsibility	+	+	+
Attitude	+	+	+
Communication	+	+	+
Overall	+	+	+

Strengths: \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_

Areas for improvement: \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_

Courses taken: \_\_\_\_\_

Completed readings: \_\_\_\_\_

Current readings: \_\_\_\_\_

Completed projects/manuscripts: \_\_\_\_\_

Current projects/manuscripts: \_\_\_\_\_

Presentations given: \_\_\_\_\_

Other accomplishments: \_\_\_\_\_

General comments and recommendations: \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_